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TRC Project Number: 311827

June 26, 2019

Ms. Shauna Little
Environmental Protection Agency
Office of Environmental Stewardship (OES)
Water Technical Unit
5 Post Office Square, Suite 100 (OES4-SMR)
Boston, MA 02109-3912

Re: Ropewalk Complex Redevelopment
50/60 Thirteenth Street, Charlestown, Massachusetts
Notice of Intent (NOI) for Coverage under the
Remediation General Permit (RGP) for Massachusetts
Discharge of Treated Water to the Boston Harbor, Boston, Massachusetts

Dear Ms. Little:

On behalf of the Capitol Air Systems, TRC Companies, Inc. has prepared the attached National Pollutant Discharge Elimination System (NPDES) Notice of Intent (NOI) (Attachment A) for coverage under the Remediation General Permit (RGP).

Project Background

Boston Planning and Development Agency (BPDA) and Vision Properties (Vision) are currently redeveloping the Ropewalk parcel to residential housing. Redevelopment work includes the drilling and installation of geothermal wells. Several of the geothermal wells have been installed and were generating groundwater at rates between 10 and 30 gallons per minute (gpm) during early phases of the work. Groundwater production rates may be higher at various locations as the project has only recently been initiated and is currently on hold. Due to the water production rate exceeding the infiltration rate into the soil a Remedial General discharge permit is being requested. A Site Location Plan, a Site Plan, and a Massachusetts Department of Environmental Protection (MassDEP) Priority Resources Map are provided as Figures 1 through 3 in Attachment B, respectively. Dewatering, treatment, and discharge of treated water is expected to begin immediately upon issuance of a permit.

The existing property buildings (Ropewalk Building No. 58 and Building No. 60) comprising the Ropewalk Complex were initially constructed to support the Boston Navy Yard by creating mooring rope. Building Nos. 58 and 60 are currently undergoing redevelopment into residential dwellings. Please refer to Figure 2 for the subject property lease showing locations of the property buildings and subsurface investigation locations.

The subject property has been associated with the following four RTNs:

RTNs 3-10574 & 3-10643

Massachusetts Department of Environmental Protection (MassDEP) issued RTN 3-10574 on March 2, 1994 following the detection of petroleum-impacted soil during the removal of two 25,000-gallon capacity No. 6 fuel oil underground storage tanks (Tank Nos. 4 and 5) located north of Building No. 108 and the former Maintenance Building. Impacts were concentrated in southeastern portion of the excavation, within a brick tunnel uncovered during response actions, and at the water table. A total of 712.07 tons of soil were transported offsite for disposal under BOLs generated for RTN 3-10574.

MassDEP issued RTN 3-10643 on March 29, 1994 following detection of elevated concentrations of total petroleum hydrocarbons in soil samples collected from a soil stockpile generated during the removal of Tank Nos. 4 and 5. Approximately 473.5 tons of petroleum contaminated soil were transported offsite for disposal.

MassDEP placed RTNs 3-10574 and 3-10643 in default and listed them as Tier 1D status on July 17, 2002. In addition, MassDEP issued a Notice of Noncompliance (NON) for RTNs 3-10574 and RTN 3-10643.

RTN 3-15032

MassDEP issued RTN 3-15032 on April 30, 1997 to the release of more than 10 gallons of a petroleum product near Building No. 108 and detection of polychlorinated biphenyls in soil in the courtyard between Building No. 108 and Building No. 58. MassDEP issued a NON for RTN 3-15032 on October 1, 2002 and noted that the release associated with that RTN was now a Tier 1D disposal site.

RTN 3-34895

MassDEP assigned RTN 3-34895 on April 25, 2018 to the detection oil and/or hazardous material above Massachusetts Contingency Plan (MCP) Reportable Concentrations in Soil (RCS-1). Exceedances were discovered during ASTM Phase I Environmental Site Assessments in support of the current redevelopment activities. Vision Properties filed a Release Abatement Measure Plan on August 20, 2018 to properly manage excavated soil. TRC prepared this LSP Opinion letter for soil associated with this RTN. Figure 2 shows the locations of these borings/test pits. Compounds detected in soil but not in water are checked in Section D.4 of the NOI form in Attachment A.

Water Characterization

On April 30, 2019 TRC personnel collected a sample of the groundwater contained in a fractionation tank located on the Ropewalk Complex. One grab sample of the water was collected via disposal bailer and couriered to Alpha Analytical of Westborough, Massachusetts (Alpha) for analysis of total and dissolved Priority Pollutant 13 metals via EPA Methods 200.7 and 245.1, hardness, and chloride. pH was measured in the field via field instrumentation. The data was collected to pre-characterize the groundwater for an EPA Dewatering General Permit (DGP) Notice of Intent. The data exceeded the published, unmodified Remediation General Permit discharge standards so a DGP was not allowed.

On May 1, 2019 TRC personnel returned to the site to collect additional sample to be analyzed for volatile organic compounds (VOCs) via EPA method 624, semi-volatile organic compounds

(SVOCs) via EPA method 625, polychlorinated biphenyls via EPA 608, and pesticides EPA via 608. The purpose of this sampling event was to collect additional parameters necessary to meet the requirements of a Massachusetts Water Resources Authority (MWRA) Construction Dewatering Permit. The water was characterized for pH and temperature using a hand-held water-quality meter. In addition to the typical water analysis for RGP characterization, one sample was filtered through a 0.45-micron filter for the purpose of approximating the treatment performance of 1-micron bag filters.

On June 10, 2019, following receiving notice from MWRA that a dewatering permit was not going to be issued, TRC personnel collected another water sample from the same fractionation tank to analyze parameters required for the RGP Notice of Intent. Analytical parameters included total residual chlorine, ethanol, RGP list metals (total and dissolved), ammonia, ethylene dibromide, phenols, phthalates, cyanide, total suspended solids, and total petroleum hydrocarbons (via EPA Method 1664).

Constituents of concern identified in the water samples are total suspended solids and metals (lead, iron, nickel, and zinc).

Receiving Water Classification

The Boston Inner Harbor (MA70-02) is listed on the Massachusetts 303(d) list as an impaired water body for the following constituents:

- PCB in Fish Tissue;
- Enterococcus;
- Fecal Coliform; and
- Dissolved Oxygen.

On June 10, 2019, TRC personnel collected a surface water sample in the Boston Inner Harbor from the approximate location of the proposed discharge point and submitted it for laboratory analysis of ammonia, and hardness. The on-site and adjacent catch basins convey water under 6th street southeast to Boston Inner Harbor adjacent to Flagship Warf. Surface water sampling results are summarized in Table 2 in Attachment C and the supporting laboratory analytical report is included in Attachment D. The surface water was characterized for pH and temperature on June 17, 2019 using a hand-held water-quality meter. Two stormwater outfalls are listed in part D of the NOI because on-site catch basins are connected to different drainage pathways, but the outfalls are nearly collocated which is why one latitude and longitude entry is listed.

Discharge of treated effluent from the dewatering treatment system will be in compliance with the effluent limitations contained in the RGP. No dilution factor is allowed because the discharge is to saltwater.

Treatment Systems

The groundwater will be treated via flocculation (APS 700 Floc Logs), coagulation (Remede E50), and physical filtration (e.g. bag filters) to remove turbidity. Metals will be removed via ion exchange resin before being discharged to the Boston Water and Sewer Stormwater System which outfalls to the Boston Inner Harbor. A Design Flow treatment system discharge rate of 100 GPM (i.e. 0.144 MGD) was used to evaluate the applicable RGP discharge standards. The flow limitation is the ion exchange resin treatment. Figure 4 depicts a generalized process flow for the treatment system. Information on the flocculants and coagulation compounds proposed is found in Attachment E. The Redux E50 is proposed as a coagulant and the reported aquatic toxicity information is found in Section 12 of the SDS. The Effect Concentration 50 (EC 50) for Water Flea

is 33.2 mg/L and the proposed dose will be five pounds per day which at 100 gpm for 24 hours equates to 4.1 mg/L.

Pursuant to section 2.5.3.d of the RGP:

The addition of such chemicals will not add any pollutants in concentrations which exceed permit effluent limitations.
The addition of flocculation and coagulation chemicals will not cause any pollutants to exceed permit effluent limitations. The aim of these compounds is to reduce turbidity and will not cause pollutant mobilization.

The addition of such chemicals will not exceed any applicable water quality standard.
The proposed dose will not exceed any applicable water quality standard nor cause EC50 or lethal dose 50 (LD50) exposures.

The addition of such chemicals 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 flocculation and coagulation chemicals do not require additional permit conditions.

A Best Management Practices Plan (BMPP) for the water extraction and treatment systems satisfying the requirements of Section 2.5 of the RGP will be available at the Site prior to initiating dewatering activities.

Owner and Treatment System Sub-Contractor

Owner	**Treatment System Sub-Contractor**
Boston Redevelopment & Planning Attention: Paul Osborn 22 Dry Dock Avenue Suite 201 Boston, MA 02210	Recon Outfitters PO Box 222 Sturbridge, MA 01566

Notice of Intent

Preparation of this NOI has included a review of the literature pertaining to Areas of Critical Environmental Concern (ACECs), the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA), as documented below:

- Review of a Massachusetts Geographic Information Systems MassDEP Priority Resources Map, Figure 3 in Attachment B, shows the Site is not within an ACEC.

- There are no Threatened Species in the vicinity of the Project by the US Fish and Wildlife Service (USFWS). A letter from USFWS is included as Attachment F. Sensitive receptors in the vicinity of the Project are shown on Figure 2 in Attachment B.

- According to the USFWS Information, Planning and Conservation (IPaC) tool, there are no critical habitats at the Site. USFWS confirmed there are no critical habitats in the area and confirmed permit eligibility meets “Criterion A” (Attachment F).

- Although the discharge is to nearshore marine waters where adult/subadult sturgeon may be present, the applicant concurs with EPA's determination to the National Oceanic and Atmospheric Administration (NOAA) that there will be no impact to species subject to NOAA jurisdiction under the ESA.

- Additionally, according to the MassDEP Priority Resources Map, no Natural Heritage & Endangered Species Program (NHESP) Priority Habitats for Rare Species or Estimated Habitats for Rare Wildlife were present within half a mile of the discharge location. Therefore, permit eligibility meets "Criterion A."

- This work will not affect historical properties that are listed by the US Park Service or Massachusetts Cultural Resources. Cultural resources in the vicinity of the Site are listed in Attachment G.

The proposed treatment systems have been designed to reduce contaminants of concern to below the applicable effluent limits. Effluent compliance monitoring will be conducted in compliance with the RGP. Additionally, the flow rate, pH and temperature levels will be monitored in the field and recorded.

Your assistance in processing this application is greatly appreciated. If you have any questions or would like additional information, please feel free to contact me at (603) 325-5480 or via email at jstapleton@trcsolutions.com.

Sincerely,

TRC Environmental Corporation

Jamie Stapleton, PG
Senior Geologist

Neil Frasca, PG
Senior Project Manager

cc: Cathy Vakalopoulos, MassDEP
Richard Mulligan - BPDA
Erik van Aarem - Vision Construction Management

Attachments:

Attachment A – RGP NOI Form and Calculation Spreadsheet
Attachment B – Figures
- Figure 1 - Site Location Plan
- Figure 2 - Site Plan
- Figure 3 - MassDEP Priority Resources Map
- Figure 4 – Generalized Process & Instrumentation Diagram

Attachment C – Tables
- Table 1 - Summary of Water Analytical Results – May and June 2019
- Table 2 - Summary of Surface Water Analytical Results – June 2019

Attachment D – Laboratory Analytical Reports
Attachment E – Details for Flocculants and Coagulants
Attachment F – Letter from US Fish and Wildlife Service
Attachment G – Massachusetts Cultural Resources Database Search Results

ATTACHMENT A

NOI FORM AND CALCULATION SPREADSHEET

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:
Ropewalk Complex Redevelopment</td><td colspan="3">Site address: 58/60 13th Street
Street:</td></tr>
<tr><td>City: Charlestown</td><td>State: MA</td><td>Zip: 02129</td></tr>
<tr><td rowspan="4">2. Site owner
Boston Planning & Redevelopment Authority

Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private
■ Other; if so, specify: Municipal</td><td colspan="3">Contact Person: Paul Osborn</td></tr>
<tr><td colspan="2">Telephone: 617-918-6211</td><td>Email: paul.osborn@boston.gov</td></tr>
<tr><td colspan="3">Mailing address: 22 Dry Dock Avenue, Suite 201
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02210</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Same as owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s): 3-10574, 3-10643, 3-15032, 3-34895
☐ NH Groundwater Management Pe
Groundwater Release Detection P
☐ 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):
Boston Inner Harbor	MA70-02	SB

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	N/A
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	0

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

7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): ■ 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 and metals. Petroleum compounds and PCBs in soil only.	
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): SDO 020 and SDO 022	Outfall location(s): (Latitude, Longitude) 42.3725 / -71.052
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: City of Boston Water & Sewer Stormwater System ☐ 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: Application to be submitted concurrent with submittal of RGP NOI Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): July 2019 (upon receipt of discharge authorization - December 2019 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	4500NH3-	75	86	86	Report mg/L	---
Chloride		✓	1	300.0	500	24,800	24,800	Report µg/l	---
Total Residual Chlorine	✓		1	4500CL-D	20	0	0	0.2 mg/L	7.5
Total Suspended Solids		✓	1	2540D	10,000	330,000	330,000	30 mg/L	30,000
Antimony *		✓	1	200.8	40	0	0	206 µg/L	640
Arsenic		✓	1	200.8	10	17.18	17.18	104 µg/L	36
Cadmium *		✓	1	200.8	2	0	0	10.2 µg/L	8.9
Chromium III		✓	1	Calculatio	10	17	17	323 µg/L	100
Chromium VI	✓		1	7196A	10	0	0	323 µg/L	50
Copper		✓	1	200.8	10	56.26	56.26	242 µg/L	3.7
Iron		✓	1	200.7	50	30,400	30,400	5,000 µg/L	-
Lead		✓	1	200.8	10	35.81	35.81	160 µg/L	8.5
Mercury		✓	1	245.1	0.2	0.23	0.23	0.739 µg/L	1.11
Nickel		✓	1	200.8	20	33.12	33.12	1,450 µg/L	8.3
Selenium	✓		1	200.8	50	0	0	235.8 µg/L	71
Silver *		✓	1	200.8	4	0	0	35.1 µg/L	2.2
Zinc		✓	1	200.8	100	107.6	107.6	420 µg/L	86
Cyanide	✓		1	4500CN-C	5	0	0	178 mg/L	1.0
B. Non-Halogenated VOCs									
Total BTEX	✓		1	624.1	20	0	0	100 µg/L	---
Benzene	✓		1	624.1	10	0	0	5.0 µg/L	---
1,4 Dioxane	✓		1	624.1-SIM	500	0	0	200 µg/L	---
Acetone	✓		1	624.1	100	0	0	7.97 mg/L	---
Phenol	✓		1	625.1	5	0	0	1,080 µg/L	300

* exclusively present in soil

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✓		1	624.1	10	0	0	4.4 µg/L	1.6
1,2 Dichlorobenzene	✓		1	624.1	50	0	0	600 µg/L	---
1,3 Dichlorobenzene	✓		1	624.1	50	0	0	320 µg/L	---
1,4 Dichlorobenzene	✓		1	624.1	50	0	0	5.0 µg/L	---
Total dichlorobenzene	✓		1	624.1	50	0	0	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	624.1	15	0	0	70 µg/L	---
1,2 Dichloroethane	✓		1	624.1	15	0	0	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	624.1	10	0	0	3.2 µg/L	---
Ethylene Dibromide	✓		1	504.1	0.01	0	0	0.05 µg/L	---
Methylene Chloride	✓		1	624.1	10	0	0	4.6 µg/L	---
1,1,1 Trichloroethane	✓		1	624.1	20	0	0	200 µg/L	---
1,1,2 Trichloroethane	✓		1	624.1	15	0	0	5.0 µg/L	---
Trichloroethylene *		✓	1	624.1	10	0	0	5.0 µg/L	---
Tetrachloroethylene *		✓	1	624.1	10	0	0	5.0 µg/L	3.3
cis-1,2 Dichloroethylene *		✓	1	624.1	10	0	0	70 µg/L	---
Vinyl Chloride		✓	1	624.1	10	0	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		1	625.1	5	0	0	190 µg/L	-
Diethylhexyl phthalate	✓		1	625.1	2.2	0	0	101 µg/L	2.2
Total Group I PAHs	✓		1	625.1-SIM	0.1	0	0	1.0 µg/L	---
Benzo(a)anthracene *		✓	1	625.1-SIM	0.1	0	0	As Total PAHs	0.0038
Benzo(a)pyrene *		✓	1	625.1-SIM	0.1	0	0		0.0038
Benzo(b)fluoranthene *		✓	1	625.1-SIM	0.1	0	0		0.0038
Benzo(k)fluoranthene *		✓	1	625.1-SIM	0.1	0	0		0.0038
Chrysene *		✓	1	625.1-SIM	0.1	0	0		0.0038
Dibenzo(a,h)anthracene *		✓	1	625.1-SIM	0.1	0	0		0.0038
Indeno(1,2,3-cd)pyrene *		✓	1	625.1-SIM	0.1	0	0		0.0038

* exclusively present in soil

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✓		1	625.1-SIM	0.10	0	0	100 µg/L	---
Naphthalene *		✓	1	625.1-SIM	0.10	0	0	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs *		✓	1	608.3	0.25	0	0	0.000064 µg/L	---
Pentachlorophenol	✓		1	625.1-SIM	1	0	0	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons *		✓	1	1664A	4.0	0	0	5.0 mg/L	---
Ethanol	✓		1	1671A	2000			Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	624.1	100	0	0	70 µg/L	20
tert-Butyl Alcohol	✓		1	624.1	1,000	0	0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	624.1	200	0	0	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH (GW)		✓	1	Field	0.1 SU	8.1	8.1	6.5 - 8.3	
pH (Surface Water)		✓	1	Field	0.1 SU	7.75	7.75	6.5 - 8.3	
Temperature (GW)		✓	1	Field	0.1 deg C	29.31	29.31		
Temperature (Surface Water)		✓	1	Field	0.1 deg C	16.1	16.1		

* exclusively present in soil

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.
Fractionation and/or weir tank(s), flocculation/coagulation, bag filtration, and Ion Exchange Resin

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

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

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: Ion Exchange Resin Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

Discharge is to nearshore marine waters where adult shortnose sturgeon and subadult/adult Atlantic sturgeon may be present but no impacts to these species are likely. No critical habitats, designated Essential Fish Habitat or Habitat Areas of Particular Concern present in vicinity. Applicant concurs with EPA's determination regarding impacts unlikely to NOAA Fisheries jurisdiction under the Endangered Species Act.

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: 6/21/19
Print Name and Title:	Paul Osborn, Deputy Director Capital Construction Boston Planning & Development Agency (BPDA)

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

0

Enter values in the units specified

↓

117	C_d = Enter influent hardness in **mg/L** $CaCO_3$
0	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.75	pH in **Standard Units**
16.1	Temperature in **°C**
0.142	Ammonia in **mg/L**
0	Hardness in **mg/L** $CaCO_3$
24	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
0	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0.086	Ammonia in **mg/L**
0	Antimony in **µg/L**
17.18	Arsenic in **µg/L**
0	Cadmium in **µg/L**
17	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
56.26	Copper in **µg/L**
30400	Iron in **µg/L**
35.81	Lead in **µg/L**
0.23	Mercury in **µg/L**
33.12	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
107.6	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

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

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

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

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

Dilution Factor	1.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**7.5**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	640	µg/L		
Arsenic	**104**	µg/L	36	µg/L		
Cadmium	**10.2**	µg/L	8.9	µg/L		
Chromium III	**323**	µg/L	100.0	µg/L		
Chromium VI	**323**	µg/L	50	µg/L		
Copper	242	µg/L	**3.7**	µg/L		
Iron	**5000**	µg/L	---	µg/L		
Lead	160	µg/L	**8.5**	µg/L		
Mercury	**0.739**	µg/L	1.11	µg/L		
Nickel	1450	µg/L	**8.3**	µg/L		
Selenium	**235.8**	µg/L	71	µg/L		
Silver	**35.1**	µg/L	2.2	µg/L		
Zinc	420	µg/L	**86**	µg/L		
Cyanide	**178**	mg/L	1.0	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7.97**	mg/L	---			
Phenol	**1,080**	µg/L	300	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**		1.6	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	3.3	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	**190**	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	2.2	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0038	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	20	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

ATTACHMENT B

FIGURES

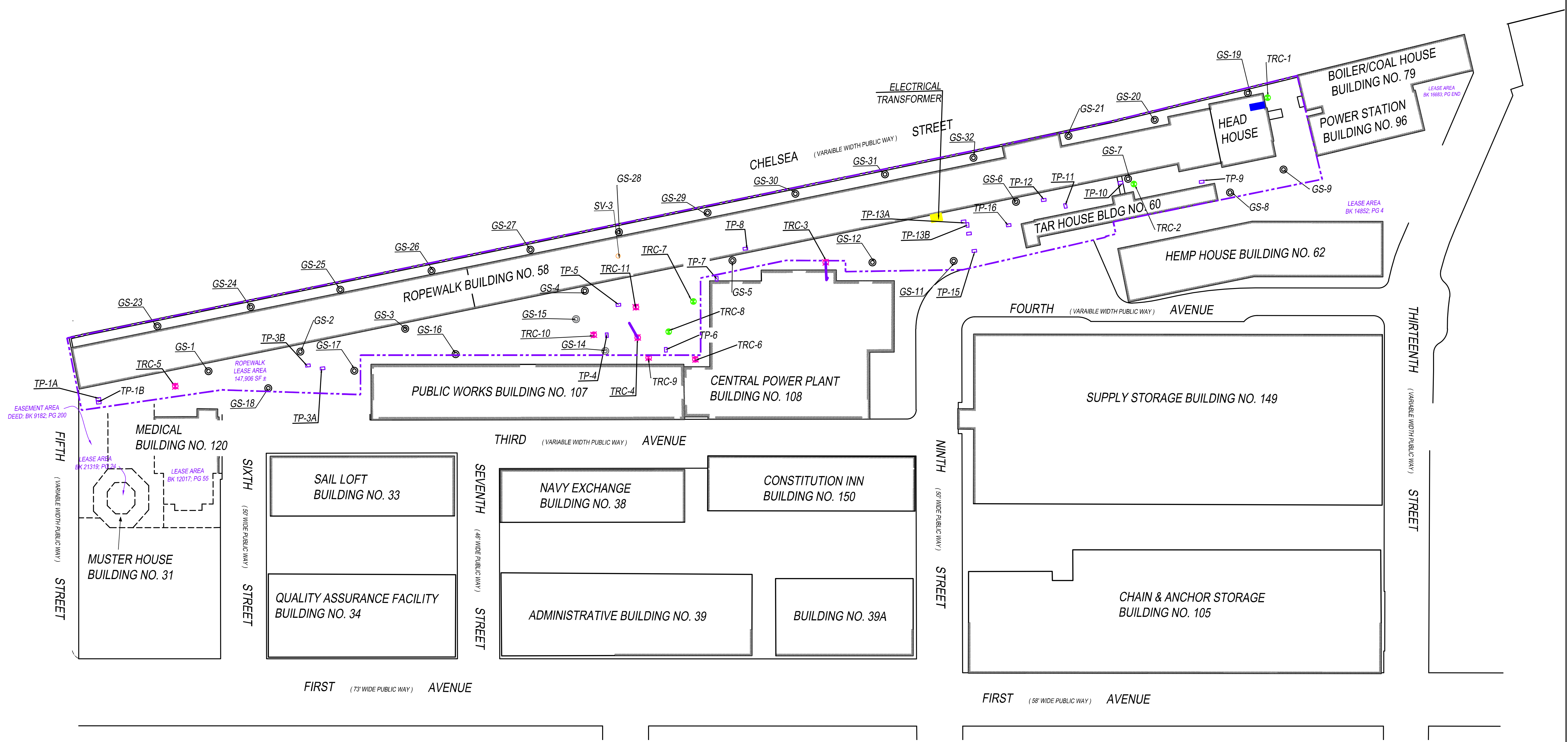
TRC
Results you can rely on

2 Liberty Square
6th Floor
Boston, ma 02109
(617) 350-3444

SITE LOCATION MAP
THE ROPEWALK COMPLEX
CHARLESTOWN NAVY YARD
58/60 THIRTEENTH STREET
CHARLESTOWN, MA

FIGURE 1 | AUGUST 2018

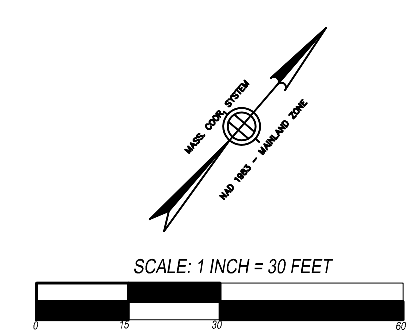
Z:\1-PROJECTS\Charlestown Navy yard\mxd\FIG1_charlestownNY20180807.mxd



BOILER/COAL HOUSE BUILDING NO. 79
POWER STATION BUILDING NO. 96
HEAD HOUSE
CHELSEA (VARAIBLE WIDTH PUBLIC WAY) STREET
ELECTRICAL TRANSFORMER
ROPEWALK BUILDING NO. 58
TAR HOUSE BLDG NO. 60
HEMP HOUSE BUILDING NO. 62
CENTRAL POWER PLANT BUILDING NO. 108
PUBLIC WORKS BUILDING NO. 107
MEDICAL BUILDING NO. 120
MUSTER HOUSE BUILDING NO. 31
SAIL LOFT BUILDING NO. 33
QUALITY ASSURANCE FACILITY BUILDING NO. 34
NAVY EXCHANGE BUILDING NO. 38
CONSTITUTION INN BUILDING NO. 150
ADMINISTRATIVE BUILDING NO. 39
BUILDING NO. 39A
SUPPLY STORAGE BUILDING NO. 149
CHAIN & ANCHOR STORAGE BUILDING NO. 105
FOURTH (VARIABLE WIDTH PUBLIC WAY) AVENUE
THIRD (VARIABLE WIDTH PUBLIC WAY) AVENUE
FIRST (73' WIDE PUBLIC WAY) AVENUE
FIRST (58' WIDE PUBLIC WAY) AVENUE
FIFTH (VARIABLE WIDTH PUBLIC WAY) STREET
SIXTH (50' WIDE PUBLIC WAY) STREET
SEVENTH (46' WIDE PUBLIC WAY) STREET
NINTH (50' WIDE PUBLIC WAY) STREET
THIRTEENTH (VARIABLE WIDTH PUBLIC WAY) STREET
ROPEWALK LEASE AREA 147,906 SF ±
EASEMENT AREA DEED: BK 9182; PG 200
LEASE AREA BK 21319; PG 24
LEASE AREA BK 12017; PG 55
LEASE AREA BK 14852; PG 4
GS-1 GS-2 GS-3 GS-4 GS-5 GS-6 GS-7 GS-8 GS-9 GS-11 GS-12 GS-14 GS-15 GS-16 GS-17 GS-18 GS-19 GS-20 GS-21 GS-23 GS-24 GS-25 GS-26 GS-27 GS-28 GS-29 GS-30 GS-31 GS-32
SV-3
TRC-1 TRC-2 TRC-3 TRC-4 TRC-5 TRC-6 TRC-7 TRC-8 TRC-9 TRC-10 TRC-11
TP-1A TP-1B TP-3A TP-3B TP-4 TP-5 TP-6 TP-7 TP-8 TP-9 TP-10 TP-11 TP-12 TP-13A TP-13B TP-15 TP-16

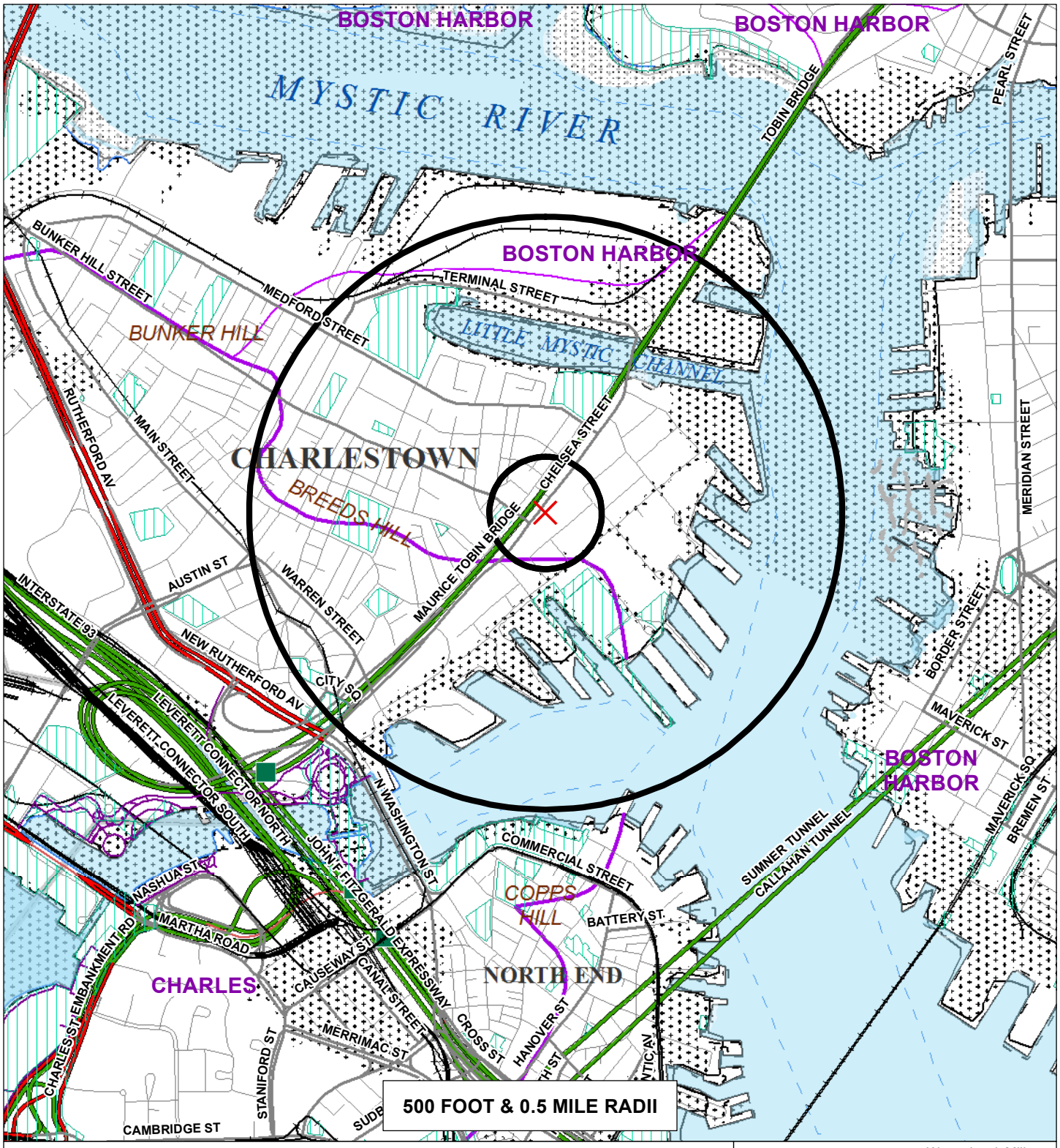
LEGEND

- MONITORING WELL
- SOIL BORING
- GREENSCAPE BORING
- TEST PIT
- LEASE AREA



OWNER
BOSTON REDEVELOPMENT AUTHORITY
1 CITY HALL PLAZA
BOSTON MA 02201

PROJECT:	THE ROPEWALK COMPLEX CHARLESTOWN NAVY YARD 58 / 60 THIRTEENTH STREET CHARLESTOWN, MA 02129
TITLE:	SITE PLAN
DRAWN BY: AHC	PROJ NO: 311827
CHECKED BY: TAD	
APPROVED BY: TAD	FIGURE 2
DATE: MAY 2019	
TRC — Wannalancit Mills, 650 Suffolk Street, Lowell, MA 01854, 978-970-5600	Vision Properties, 401 East Elm Street, Conshohocken, PA 19428
FILE NO:	Ropewalk Site Plan20190506.dwg



Roads: Limited Access, Multi-Lane, Major/Minor, Track, Trail
Railroad, Pipline, Powerline
Major Basin, Sub Basin, Perennial Stream, Intermittent Stream,
Shoreline, Man made Shore, Dam, Aqueduct
Wetland, Salt Wetland, Submerged Wetland, Open Water, Reservoir, Tidal Flat/Shoal
Potentially Productive Aquifers: Medium, High Yield
Non-Potential Drinking Water Source Area: Medium, High Yield
EPA Sole Source Aquifer, FEMA 100 Yr. Floodplain, DEP Solid Waste Facility
Approved Zone II, IWPA, Surface Water Supply Zone A
Protected Open Space, ACEC
Priority Habitat, Certified Vernal Pool
Boundaries: County and Town
Public Water Supplies: Ground, Surface, Non-Community (NTNC, TNC)
Source: MassGIS/EOEA

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

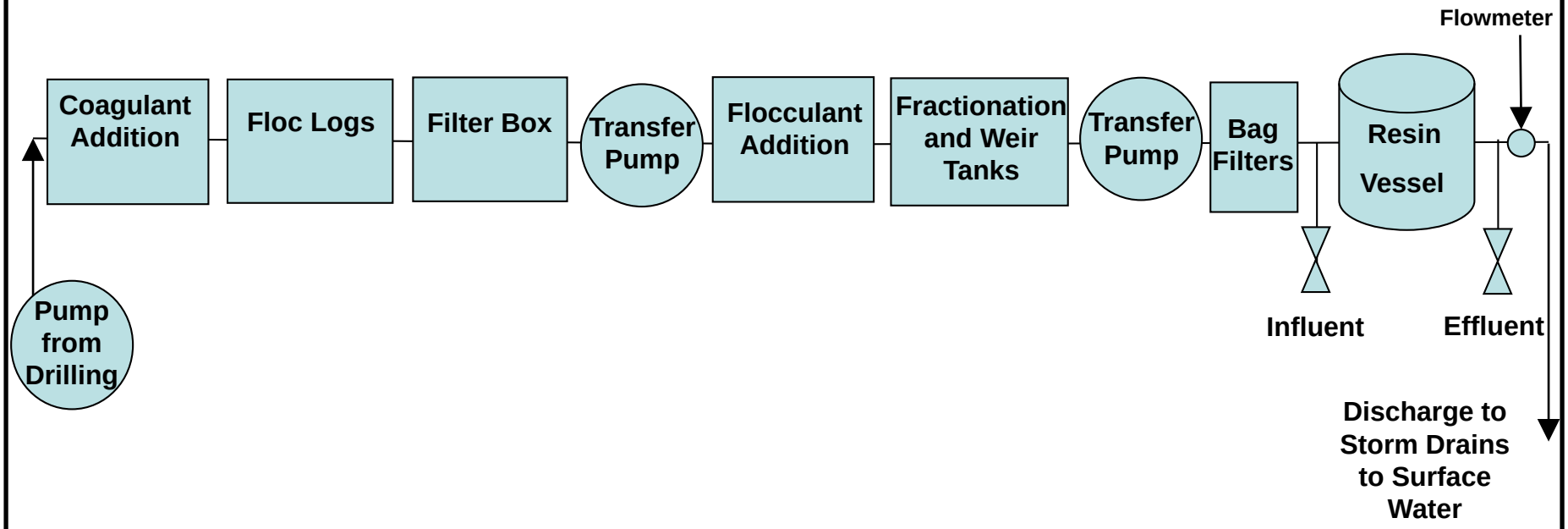
FIGURE 3

MASSDEP PRIORITY RESOURCE MAP
CHARLESTOWN NAVY YARD
58/60 THIRTEENTH STREET
CHARLESTOWN, MA

N
0 1,250
Feet
MAY 2019

S:\7-SANDBOX\M_Nardone\Fig3_PriorityRes_ropwalk_2019-05-03.mxd

Generalized Treatment System Schematic Diagram



Ropewalk Complex Redevelopment
Charlestown, Massachusetts

Generalized Treatment System Schematic

TRC
Wannalancit Mills
650 Suffolk Street
Lowell, MA 01854
978-970-5600

Drawn: JPS
Checked:
SCALE: AS SHOWN
Date 6/14/19

FIGURE 4

ATTACHMENT C

TABLES

Summary of Analytical Results for Water Samples -- April, May, and June 2019
Ropewalk Complex
Charlestown Navy Yard
Charlestown, Massachusetts

					Sample Location:	**FRAC-TANK-1**				
					Sample Name:	FRAC TANK-1		RGP ADDITIONAL		
					Sample Date:	05/01/2019*		06/10/2019		
			RGP for Saltwater[a]		RGP Required Minimum					
Analysis	Analyte	UNIT	**TBEL**	**WQBEL[b]**	Level(c)					
VOCs										
	Benzene	ug/L	**5.0**	5.0	5	10	U^	NA		
	Toluene	ug/L	N/A	N/A	N/A	10	U	NA		
	Ethylbenzene	ug/L	N/A	N/A	N/A	10	U	NA		
	m,p-Xylene	ug/L	N/A	N/A	N/A	20	U	NA		
	o-Xylene	ug/L	N/A	N/A	N/A	10	U	NA		
	Total BTEX	ug/l	**100**	100	100	*ND*		*NA*		
	Methylene chloride	ug/L	**4.6**	4.6	4.6	10	U^	NA		
	1,1-Dichloroethane	ug/L	**70**	70	70	15	U	NA		
	Chloroform	ug/L	N/A	N/A	N/A	10	U	NA		
	Carbon tetrachloride	ug/L	**4.4**	1.6	1.6	10	U^	NA		
	1,2-Dichloropropane	ug/L	N/A	N/A	N/A	35	U	NA		
	Dibromochloromethane	ug/L	N/A	N/A	N/A	10	U	NA		
	1,1,2-Trichloroethane	ug/L	**5.0**	5.0	5	15	U^	NA		
	2-Chloroethyl vinyl ether	ug/L	N/A	N/A	N/A	100	U	NA		
	Tetrachloroethene	ug/L	**5.0**	3.3	3.3	10	U^	NA		
	Chlorobenzene	ug/L	N/A	N/A	N/A	35	U	NA		
	Trichlorofluoromethane	ug/L	N/A	N/A	N/A	50	U	NA		
	1,2-Dichloroethane	ug/L	**5.0**	5.0	5	15	U^	NA		
	1,1,1-Trichloroethane	ug/L	**200**	200	200	20	U	NA		
	Bromodichloromethane	ug/L	N/A	N/A	N/A	10	U	NA		
	trans-1,3-Dichloropropene	ug/L	N/A	N/A	N/A	15	U	NA		
	cis-1,3-Dichloropropene	ug/L	N/A	N/A	N/A	15	U	NA		
	1,3-Dichloropropene, Total	ug/L	N/A	N/A	N/A	15	U	NA		
	Bromoform	ug/L	N/A	N/A	N/A	10	U	NA		
	1,1,2,2-Tetrachloroethane	ug/L	N/A	N/A	N/A	10	U	NA		
	Chloromethane	ug/L	N/A	N/A	N/A	50	U	NA		
	1,1,2,2-Tetrachloroethane	ug/L	N/A	N/A	N/A	10	U	NA		
	Chloromethane	ug/L	N/A	N/A	N/A	50	U	NA		
	Bromomethane	ug/L	N/A	N/A	N/A	50	U	NA		
	Vinyl chloride	ug/L	**2.0**	2.0	2	10	U^	NA		
	Chloroethane	ug/L	N/A	N/A	N/A	20	U	NA		
	1,1-Dichloroethene	ug/L	**3.2**	3.2	3.2	10	U^	NA		
	trans-1,2-Dichloroethene	ug/L	N/A	N/A	N/A	15	U	NA		
	Trichloroethene	ug/L	**5.0**	5.0	5	10	U^	NA		
	1,2-Dichlorobenzene	ug/L	**600**	600	600	50	U	NA		
	1,3-Dichlorobenzene	ug/L	**320**	320	320	50	U	NA		
	1,4-Dichlorobenzene	ug/L	**5.0**	5.0	5	50	U^	NA		
	Xylenes, total	ug/L	N/A	N/A	N/A	10	U	NA		
	cis-1,2-Dichloroethene	ug/L	**70**	70	70	10	U	NA		
	Dibromomethane	ug/L	N/A	N/A	N/A	10	U	NA		
	Styrene	ug/L	N/A	N/A	N/A	10	U	NA		
	Acetone	ug/L	**7,970**	7,970	7,970	100	U	NA		
	Carbon disulfide	ug/L	N/A	N/A	N/A	50	U	NA		
	2-Butanone (MEK)	ug/L	N/A	N/A	N/A	100	U	NA		
	Vinyl acetate	ug/L	N/A	N/A	N/A	100	U	NA		
	4-Methyl-2-pentanone	ug/L	N/A	N/A	N/A	100	U	NA		
	2-Hexanone	ug/L	N/A	N/A	N/A	100	U	NA		
	Acrolein	ug/L	N/A	N/A	N/A	80	U	NA		
	Acrylonitrile	ug/L	N/A	N/A	N/A	100	U	NA		
	1,2-Dibromoethane	ug/L	**0.05**	0.05	0.05	NA		0.01	U	
	1,2-Dibromo-3-chloropropane	ug/L	N/A	N/A	N/A	NA		0.01	U	
	1,2,3-Trichloropropane	ug/L	N/A	N/A	N/A	NA		0.03	U	
	Methyl tert-butyl ether	ug/L	**70**	20	20	NA		100	U^	
	tert-Butyl alcohol	ug/L	**120**	120	120	NA		1,000	U^	
	tert-Amyl methyl ether	ug/L	**90**	90	90	NA		200	U^	
	1,4-Dioxane	ug/L	**200**	200	50	NA		500	U^	
EPH										
	C9-C18 Aliphatics	ug/L	N/A	N/A	N/A	100	U	NA		
	C19-C36 Aliphatics	ug/L	N/A	N/A	N/A	100	U	NA		
	C11-C22 Aromatics	ug/L	N/A	N/A	N/A	100	U	NA		
SVOCs										
	Bis(2-ethylhexyl)phthalate	ug/L	**101**	2.2	2.2	2.2	U	NA		
	Butylbenzylphthalate	ug/L	N/A	N/A	N/A	5	U	NA		
	Di-n-butylphthalate	ug/L	N/A	N/A	N/A	5	U	NA		
	Di-n-octylphthalate	ug/L	N/A	N/A	N/A	5	U	NA		
	Diethyl phthalate	ug/L	N/A	N/A	N/A	5	U	NA		
	Dimethylphthalate	ug/L	N/A	N/A	N/A	5	U	NA		
	Total Phthalates	ug/L	**190**	190	190	*ND*		*ND*		
	Benzo(a)anthracene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Benzo(a)pyrene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Benzo(b)fluoranthene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Benzo(k)fluoranthene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Chrysene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Dibenz(a,h)anthracene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Indeno(1,2,3-cd)pyrene	ug/L	**1.0**	0.0038	0.1	2	U^	0.1	U	
	Total Group I PAHs	ug/l	**1.0**	1.0	1	*ND*		*ND*		
	Acenaphthene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Acenaphthylene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Anthracene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Benzo(g,h,i)perylene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Fluoranthene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Fluorene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Naphthalene	ug/L	**20**	20	20	2	U	0.1	U	
	Phenanthrene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Pyrene	ug/L	N/A	N/A	N/A	2	U	0.1	U	
	Total Group II PAHs	ug/l	**100**	100	100	*ND*		*ND*		
	Benzidine	ug/L	N/A	N/A	N/A	20	U	NA		
	1,2,4-Trichlorobenzene	ug/L	N/A	N/A	N/A	5	U	NA		
	Hexachlorobenzene	ug/L	N/A	N/A	N/A	2	U	NA		
	Bis(2-chloroethyl) ether	ug/L	N/A	N/A	N/A	2	U	NA		
	2-Chloronaphthalene	ug/L	N/A	N/A	N/A	2	U	NA		
	3,3'-Dichlorobenzidine	ug/L	N/A	N/A	N/A	5	U	NA		
	2,4-Dinitrotoluene	ug/L	N/A	N/A	N/A	5	U	NA		
	2,6-Dinitrotoluene	ug/L	N/A	N/A	N/A	5	U	NA		
	Azobenzene	ug/L	N/A	N/A	N/A	2	U	NA		
	4-Chlorophenyl-phenyl ether	ug/L	N/A	N/A	N/A	2	U	NA		
	4-Bromophenyl-phenylether	ug/L	N/A	N/A	N/A	2	U	NA		
	2,2'-Oxybis(1-chloropropane)	ug/L	N/A	N/A	N/A	2	U	NA		
	Bis(2-chloroethoxy)methane	ug/L	N/A	N/A	N/A	5	U	NA		
	Hexachlorobutadiene	ug/L	N/A	N/A	N/A	2	U	NA		
	Hexachlorocyclopentadiene	ug/L	N/A	N/A	N/A	10	U	NA		
	Hexachloroethane	ug/L	N/A	N/A	N/A	2	U	NA		
	Isophorone	ug/L	N/A	N/A	N/A	5	U	NA		
	Nitrobenzene	ug/L	N/A	N/A	N/A	2	U	NA		
	N-Nitrosodiphenylamine	ug/L	N/A	N/A	N/A	2	U	NA		

Summary of Analytical Results for Water Samples -- April, May, and June 2019
Ropewalk Complex
Charlestown Navy Yard
Charlestown, Massachusetts

						Sample Location:	**FRAC-TANK-1**			
						Sample Name:	FRAC TANK-1		RGP ADDITIONAL	
						Sample Date:	05/01/2019*		06/10/2019	
			RGP for Saltwater[a]		RGP Required Minimum					
Analysis	Analyte	UNIT	**TBEL**	**WQBEL[b]**	Level(c)					
	n-Nitroso-di-n-propylamine	ug/L	N/A	N/A	N/A	5	U	NA		
	4-Chloroaniline	ug/L	N/A	N/A	N/A	5	U	NA		
	Dibenzofuran	ug/L	N/A	N/A	N/A	2	U	NA		
	2-Methylnaphthalene	ug/L	N/A	N/A	N/A	2	U	NA		
	n-Nitrosodimethylamine	ug/L	N/A	N/A	N/A	2	U	NA		
	2,4,6-Trichlorophenol	ug/L	N/A	N/A	N/A	5	U	NA		
	4-Chloro-3-methylphenol	ug/L	N/A	N/A	N/A	2	U	NA		
	2-Chlorophenol	ug/L	N/A	N/A	N/A	2	U	NA		
	2,4-Dichlorophenol	ug/L	N/A	N/A	N/A	5	U	NA		
	2,4-Dimethylphenol	ug/L	N/A	N/A	N/A	5	U	NA		
	2-Nitrophenol	ug/L	N/A	N/A	N/A	5	U	NA		
	4-Nitrophenol	ug/L	N/A	N/A	N/A	10	U	NA		
	2,4-Dinitrophenol	ug/L	N/A	N/A	N/A	20	U	NA		
	4,6-Dinitro-2-methylphenol	ug/L	N/A	N/A	N/A	10	U	NA		
	Pentachlorophenol	ug/L	**1.0**	1.0	1	5	U^	1.0	U	
	Phenol	ug/L	**1,080**	300	300	5	U	NA		
	2-Methylphenol	ug/L	N/A	N/A	N/A	5	U	NA		
	3,4-Methylphenol	ug/L	N/A	N/A	N/A	5	U	NA		
	2,4,5-Trichlorophenol	ug/L	N/A	N/A	N/A	5	U	NA		
	Benzoic acid	ug/L	N/A	N/A	N/A	50	U	NA		
	Benzyl alcohol	ug/L	N/A	N/A	N/A	2	U	NA		
Pesticides										
	delta-BHC	ug/L	N/A	N/A	N/A	0.020	U	NA		
	gamma-BHC (Lindane)	ug/L	N/A	N/A	N/A	0.020	U	NA		
	alpha-BHC	ug/L	N/A	N/A	N/A	0.020	U	NA		
	beta-BHC	ug/L	N/A	N/A	N/A	0.020	U	NA		
	Heptachlor	ug/L	N/A	N/A	N/A	0.020	U	NA		
	Aldrin	ug/L	N/A	N/A	N/A	0.020	U	NA		
	Heptachlor epoxide	ug/L	N/A	N/A	N/A	0.020	U	NA		
	Endrin	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Endrin aldehyde	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Endrin ketone	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Dieldrin	ug/L	N/A	N/A	N/A	0.040	U	NA		
	4,4'-DDE	ug/L	N/A	N/A	N/A	0.040	U	NA		
	4,4'-DDD	ug/L	N/A	N/A	N/A	0.040	U	NA		
	4,4'-DDT	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Endosulfan I	ug/L	N/A	N/A	N/A	0.020	U	NA		
	Endosulfan II	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Endosulfan sulfate	ug/L	N/A	N/A	N/A	0.040	U	NA		
	Methoxychlor	ug/L	N/A	N/A	N/A	0.100	U	NA		
	Toxaphene	ug/L	N/A	N/A	N/A	0.400	U	NA		
	Chlordane	ug/L	N/A	N/A	N/A	0.200	U	NA		
	alpha-Chlordane	ug/L	N/A	N/A	N/A	0.020	U	NA		
	trans-Chlordane	ug/L	N/A	N/A	N/A	0.020	U	NA		
PCB Aroclors										
	Aroclor-1016	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1221	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1232	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1242	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1248	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1254	ug/L	N/A	N/A	N/A	0.250	U	NA		
	Aroclor-1260	ug/L	N/A	N/A	N/A	0.200	U	NA		
	PCBs, Total	ug/L	**0.000064**	0.000064	0.5	0.250	U	NA		
TPH										
	Oil & Grease (HEM)	ug/L	**5,000**	5,000	5,000	4,400	U	4,000	U	
Metals, total										
	Antimony	ug/L	**206**	640	206	50	U	40	U	
	Arsenic	ug/L	**104**	36	36	**17**		**17.18**		
	Cadmium	ug/L	**10.2**	8.9	8.8	5	U	2	U	
	Chromium	ug/L	N/A	N/A	N/A	**51**		**43.62**		
	Chromium (III)	ug/L	**323**	100	100	NA		50	U	
	Chromium (VI)	ug/L	**323**	50	50	NA		50	U	
	Copper	ug/L	242	**3.7**	3.1	**37**		**56.26**		
	Iron	ug/L	**5,000**	5,000	N/A	**53,400**		**30,400**		
	Lead	ug/L	160	**8.5**	8.1	**40**		**35.81**		
	Mercury	ug/L	**0.739**	1.11	0.739	0.2	U	**0.23**		
	Nickel	ug/L	1,450	**8.3**	8.2	**55**		**33.12**		
	Selenium	ug/L	**235.8**	71	71	10	U	50	U	
	Silver	ug/L	**35.1**	2.2	1.9	7	U^	4	U^	
	Zinc	ug/L	420	**86**	81	**116**		**107.6**		

Summary of Analytical Results for Water Samples -- April, May, and June 2019
Ropewalk Complex
Charlestown Navy Yard
Charlestown, Massachusetts

					Sample Location:	**FRAC-TANK-1**			
					Sample Name:	FRAC TANK-1		RGP ADDITIONAL	
					Sample Date:	05/01/2019*		06/10/2019	
			RGP for Saltwater[a]		RGP Required Minimum				
Analysis	Analyte	UNIT	**TBEL**	**WQBEL[b]**	Level(c)				
Metals, dissolved									
	Antimony	ug/L	**206**	640	N/A	50	U	4	U
	Arsenic	ug/L	**104**	36	N/A	**9**		**12.1**	
	Cadmium	ug/L	**10.2**	8.9	N/A	5	U	0.2	U
	Chromium	ug/L	N/A	N/A	N/A	**18**		**17.2**	
	Chromium (III)	ug/L	**323**	100	N/A	NA		**17**	
	Chromium (VI)	ug/L	**323**	50	N/A	10	U	10	U
	Copper	ug/L	242	**3.7**	N/A	**14**		**22.7**	
	Iron	ug/L	**5,000**	5,000	N/A	**20,600**		**9,270**	
	Lead	ug/L	160	**8.5**	N/A	**16**		**16.3**	
	Mercury	ug/L	**0.739**	1.11	N/A	0.2	U	0.2	U
	Nickel	ug/L	1,450	**8.3**	N/A	25	U	**9.6**	
	Selenium	ug/L	**235.8**	71	N/A	10	U	5	U
	Silver	ug/L	**35.1**	2.2	N/A	7	U	0.4	U
	Zinc	ug/L	420	**86**	N/A	**60**		**25.7**	
General Chemistry									
	Ethanol	ug/L	N/A	N/A	400	NA		2,000	U^
	Total Hardness as CaCO3	ug/L	N/A	N/A	N/A	**117,000**		NA	
	Chloride	ug/L	N/A	N/A	230,000	**24,800**		NA	
	pH	su	**6.5-8.5**	6.5-8.5	N/A	**8.1**		NA	
	Temperature	deg. C	N/A	N/A	N/A	NA		**29.31**	
	Total Suspended Solids (TSS)	ug/L	**30,000**	30,000	30,000	NA		**330,000**	
	Cyanide	ug/L	**178**	1	5.0	NA		5	U
	Chlorine, total residual	ug/L	200	**7,500**	50	NA		20	U
	Ammonia as Nitrogen	ug/L	N/A	N/A	100	NA		**86**	

Notes:

ug/L - micrograms per liter.

su - Standard unit.

NA - Not analyzed for the listed analyte.

N/A - Not applicable/available.

ND - Not detected.

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

Values shown in bold and shaded black exceed the applicable bolded and underlined RGP Effluent Limits.

^ - Quantitation limit value exceeds the RGP Required Minimum Level.

VOCs - Volatile Organic Compounds.

EPH - Extractable Petroleum Hydrocarbons.

SVOCs - Semivolatile Organic Compounds.

PCBs - Polychlorinated Biphenyls.

TPH - Total Petroleum Hydrocarbons.

PAHs - Polynuclear Aromatic Hydrocarbons.

RGP - EPA Remediation General Permit, Effluent Limits, 2016.

TBEL - Technology-Based Effluent Limitation.

WQBEL - Water Quality-Based Effluent Limitation.

The above standards apply to discharge to saltwater receiving waters. The RGP contains separate discharge standards for discharges to freshwater receiving waters.

[a] RGP for Saltwater standards are an average monthly discharge limitation in Massachusetts only.

[b] No Dilution Factor has been applied.

[c] Additional Resource for Selecting Sufficiently Sensitive Test Methods for RGP Notice of Intent (NOI) Sampling Requirements, Table 1 for saltwater.

* - Sample was collected on 4/30/2019 for metals and general chemistry analyses and 5/1/2019 for other analyses.

Table 2
Summary of Analytical Resutls for Surface Water Sample - June 2019
Ropewalk Complex
Charlestown Navy Yard
Charlestown, Massachusetts

		Location:	RGP BOSTON HARBOR	
		Sample Date:	6/10/2019	
Analysis	Analyte	Units		
General Chemistry				
	Nitrogen, Ammonia	ug/l	**142**	
	Salinity	su	**24**	
	pH	su	**7.75**	
	Temperature	deg. C	**16.1**	

Notes:

ug/L - micrograms per liter.

su - Standard unit.

U - Analyte was not detected at specified quantitation limit.

Values in **bold** indicate the analyte was detected.

ATTACHMENT D

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

Lab Number:	L1917747
Client:	TRC Environmental Consultants 650 Suffolk Street Wannalancit Mills Lowell, MA 01854
ATTN:	Neil Frasca
Phone:	(978) 656-3686
Project Name:	ROPEWALK COMPLEX
Project Number:	311827
Report Date:	05/01/19

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

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

Project Name: ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917747
Report Date: 05/01/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1917747-01	FRAC TANK-1	WATER	CHARLESTOWN, MA	04/30/19 12:20	04/30/19

Project Name:	ROPEWALK COMPLEX	**Lab Number:**	L1917747
Project Number:	311827	**Report Date:**	05/01/19

Case Narrative

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

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

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

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

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

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

Project Name:	ROPEWALK COMPLEX	**Lab Number:**	L1917747
Project Number:	311827	**Report Date:**	05/01/19

Case Narrative (continued)

Total Metals

The WG1232248-3 MS recovery, performed on L1917747-01, is outside the acceptance criteria for antimony (72%). A post digestion spike was performed and was within acceptance criteria.

The WG1232248-3 MS recovery for iron (0%), performed on L1917747-01, does not apply because the sample concentration is greater than four times the spike amount added.

Dissolved Metals

The WG1232247-3 MS recovery, performed on L1917747-01, is outside the acceptance criteria for antimony (68%). A post digestion spike was performed and was within acceptance criteria.

The WG1232247-3 MS recovery for iron (260%), performed on L1917747-01, does not apply because the sample concentration is greater than four times the spike amount added.

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

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 05/01/19

METALS

Project Name: ROPEWALK COMPLEX
Lab Number: L1917747
Project Number: 311827
Report Date: 05/01/19

SAMPLE RESULTS

Lab ID: L1917747-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA
Date Collected: 04/30/19 12:20
Date Received: 04/30/19
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	0.050	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Arsenic, Total	0.017		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Chromium, Total	0.051		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Copper, Total	0.037		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Iron, Total	53.4		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Lead, Total	0.040		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.00020	--	1	05/01/19 09:54	05/01/19 12:56	EPA 245.1	3,245.1	GD
Nickel, Total	0.055		mg/l	0.025	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Zinc, Total	0.116		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	117		mg/l	0.660	NA	1	05/01/19 07:50	05/01/19 12:29	EPA 3005A	19,200.7	LC
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Arsenic, Dissolved	0.009		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Cadmium, Dissolved	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Chromium, Dissolved	0.018		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Copper, Dissolved	0.014		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Iron, Dissolved	20.6		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Lead, Dissolved	0.016		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Mercury, Dissolved	ND		mg/l	0.00020	--	1	05/01/19 10:20	05/01/19 13:05	EPA 245.1	3,245.1	GD
Nickel, Dissolved	ND		mg/l	0.025	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Selenium, Dissolved	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Silver, Dissolved	ND		mg/l	0.007	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC
Zinc, Dissolved	0.060		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 11:00	EPA 3005A	19,200.7	LC

Project Name: ROPEWALK COMPLEX **Lab Number:** L1917747

Project Number: 311827 **Report Date:** 05/01/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1232247-1										
Antimony, Dissolved	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Arsenic, Dissolved	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Cadmium, Dissolved	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Chromium, Dissolved	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Copper, Dissolved	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Iron, Dissolved	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Lead, Dissolved	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Nickel, Dissolved	ND		mg/l	0.025	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Selenium, Dissolved	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Silver, Dissolved	ND		mg/l	0.007	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC
Zinc, Dissolved	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 10:51	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1232248-1										
Antimony, Total	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Arsenic, Total	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Chromium, Total	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Copper, Total	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Iron, Total	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Lead, Total	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Nickel, Total	ND		mg/l	0.025	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC
Zinc, Total	ND		mg/l	0.050	--	1	05/01/19 07:50	05/01/19 12:10	19,200.7	LC

Project Name: ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917747
Report Date: 05/01/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1232248-1										
Hardness	ND		mg/l	0.660	NA	1	05/01/19 07:50	05/01/19 12:10	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 Batch: WG1232289-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	05/01/19 10:20	05/01/19 13:01	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1232296-1										
Mercury, Total	ND		mg/l	0.00020	--	1	05/01/19 09:54	05/01/19 12:49	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917747

Report Date: 05/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232247-2								
Antimony, Dissolved	95		-		85-115	-		
Arsenic, Dissolved	110		-		85-115	-		
Cadmium, Dissolved	107		-		85-115	-		
Chromium, Dissolved	108		-		85-115	-		
Copper, Dissolved	102		-		85-115	-		
Iron, Dissolved	109		-		85-115	-		
Lead, Dissolved	105		-		85-115	-		
Nickel, Dissolved	104		-		85-115	-		
Selenium, Dissolved	111		-		85-115	-		
Silver, Dissolved	99		-		85-115	-		
Zinc, Dissolved	112		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917747

Report Date: 05/01/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232248-2					
Antimony, Total	94	-	85-115	-	
Arsenic, Total	109	-	85-115	-	
Cadmium, Total	105	-	85-115	-	
Chromium, Total	104	-	85-115	-	
Copper, Total	99	-	85-115	-	
Iron, Total	105	-	85-115	-	
Lead, Total	105	-	85-115	-	
Nickel, Total	102	-	85-115	-	
Selenium, Total	112	-	85-115	-	
Silver, Total	103	-	85-115	-	
Zinc, Total	110	-	85-115	-	
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1232248-2					
Hardness	104	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232289-2					
Mercury, Dissolved	111	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1232296-2					
Mercury, Total	102	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917747
Report Date: 05/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232247-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1												
Antimony, Dissolved	ND	0.5	0.342	**68**	Q	-	-		75-125	-		20
Arsenic, Dissolved	0.009	0.12	0.140	109		-	-		75-125	-		20
Cadmium, Dissolved	ND	0.051	0.055	107		-	-		75-125	-		20
Chromium, Dissolved	0.018	0.2	0.229	106		-	-		75-125	-		20
Copper, Dissolved	0.014	0.25	0.269	102		-	-		75-125	-		20
Iron, Dissolved	20.6	1	23.2	**260**	Q	-	-		75-125	-		20
Lead, Dissolved	0.016	0.51	0.539	102		-	-		75-125	-		20
Nickel, Dissolved	ND	0.5	0.533	107		-	-		75-125	-		20
Selenium, Dissolved	ND	0.12	0.132	110		-	-		75-125	-		20
Silver, Dissolved	ND	0.05	0.048	96		-	-		75-125	-		20
Zinc, Dissolved	0.060	0.5	0.620	112		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917747
Report Date: 05/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232248-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1										
Antimony, Total	ND	0.5	0.358	**72**	Q	-	-	75-125	-	20
Arsenic, Total	0.017	0.12	0.139	102		-	-	75-125	-	20
Cadmium, Total	ND	0.051	0.054	106		-	-	75-125	-	20
Chromium, Total	0.051	0.2	0.251	100		-	-	75-125	-	20
Copper, Total	0.037	0.25	0.285	99		-	-	75-125	-	20
Iron, Total	53.4	1	44.0	**0**	Q	-	-	75-125	-	20
Lead, Total	0.040	0.51	0.541	98		-	-	75-125	-	20
Nickel, Total	0.055	0.5	0.543	98		-	-	75-125	-	20
Selenium, Total	ND	0.12	0.128	107		-	-	75-125	-	20
Silver, Total	ND	0.05	0.053	105		-	-	75-125	-	20
Zinc, Total	0.116	0.5	0.642	105		-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232248-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1										
Hardness	117	66.2	170	80		-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232289-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1										
Mercury, Dissolved	ND	0.005	0.00525	105		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232296-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1										
Mercury, Total	ND	0.005	0.00503	101		-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917747

Report Date: 05/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232247-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1						
Antimony, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	0.009	0.009	mg/l	5		20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Chromium, Dissolved	0.018	0.018	mg/l	3		20
Copper, Dissolved	0.014	0.014	mg/l	3		20
Iron, Dissolved	20.6	21.0	mg/l	2		20
Lead, Dissolved	0.016	0.016	mg/l	3		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	0.060	0.061	mg/l	2		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917747
Report Date: 05/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232248-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1					
Antimony, Total	ND	ND	mg/l	NC	20
Arsenic, Total	0.017	0.014	mg/l	16	20
Cadmium, Total	ND	ND	mg/l	NC	20
Chromium, Total	0.051	0.045	mg/l	13	20
Copper, Total	0.037	0.032	mg/l	17	20
Iron, Total	53.4	45.6	mg/l	16	20
Lead, Total	0.040	0.039	mg/l	2	20
Nickel, Total	0.055	0.049	mg/l	12	20
Selenium, Total	ND	ND	mg/l	NC	20
Silver, Total	ND	ND	mg/l	NC	20
Zinc, Total	0.116	0.102	mg/l	13	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232248-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1					
Hardness	117	108	mg/l	8	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232289-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1					
Mercury, Dissolved	ND	ND	mg/l	NC	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1232296-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1					
Mercury, Total	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917747
Report Date: 05/01/19

SAMPLE RESULTS

Lab ID: L1917747-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA
Sample Depth:
Matrix: Water
Date Collected: 04/30/19 12:20
Date Received: 04/30/19
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Chromium, Hexavalent (Filtered)	ND		mg/l	0.010	--	1	04/30/19 22:10	04/30/19 23:03	1,7196A	AS
Anions by Ion Chromatography - Westborough Lab										
Chloride	24.8		mg/l	0.500	--	1	-	04/30/19 20:04	44,300.0	AU

Project Name: ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917747
Report Date: 05/01/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232109-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	04/30/19 22:10	04/30/19 23:02	1,7196A	AS
Anions by Ion Chromatography - Westborough Lab for sample(s): 01 Batch: WG1232127-1										
Chloride	ND		mg/l	0.500	--	1	-	04/30/19 17:16	44,300.0	AU

Lab Control Sample Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917747

Report Date: 05/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232109-2								
Chromium, Hexavalent	98		-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 Batch: WG1232127-2								
Chloride	99		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917747
Report Date: 05/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232109-4 QC Sample: L1917747-01 Client ID: FRAC TANK-1												
Chromium, Hexavalent	ND	0.1	0.103	103		-	-		85-115	-		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232127-3 QC Sample: L1917633-02 Client ID: MS Sample												
Chloride	195	100	302	107		-	-		90-110	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917747

Report Date: 05/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232109-3 QC Sample: L1917747-01 Client ID: FRAC TANK-1						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232127-4 QC Sample: L1917633-02 Client ID: DUP Sample						
Chloride	195	194	mg/l	1		18

Project Name: ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917747
Report Date: 05/01/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1917747-01A	Plastic 950ml unpreserved	A	7	7	4.1	Y	Absent		CL-300(28),HEXCR-7196(1)
L1917747-01B	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		NI-UI(180),SB-UI(180),AG-UI(180),ZN-UI(180),FE-UI(180),HARDU(180),SE-UI(180),HG-U(28),CD-UI(180),CR-UI(180),AS-UI(180),CU-UI(180),PB-UI(180)
L1917747-01C	Plastic 250ml HNO3 preserved	A	<2	<2	4.1	Y	Absent		FE-RI(180),ZN-RI(180),SE-RI(180),CU-RI(180),SB-RI(180),AG-RI(180),CR-RI(180),HG-R(28),NI-RI(180),AS-RI(180),CD-RI(180),PB-RI(180)

*Values in parentheses indicate holding time in days

Project Name:	ROPEWALK COMPLEX	**Lab Number:**	L1917747
Project Number:	311827	**Report Date:**	05/01/19

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

Footnotes

Report Format: Data Usability Report

Project Name:	ROPEWALK COMPLEX	**Lab Number:**	L1917747
Project Number:	311827	**Report Date:**	05/01/19

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

Terms

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

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

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

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

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

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

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

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

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	ROPEWALK COMPLEX	**Lab Number:**	L1917747
Project Number:	311827	**Report Date:**	05/01/19

REFERENCES

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

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

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF CUSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Date Rec'd in Lab: 4/30/19

ALPHA Job #: L1917747

Westborough, MA
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA
TEL: 508-822-9300
FAX: 508-822-3288

Project Information

Project Name: Ropewalk Complex

Project Location: Charlestown, MA

Project #: 311827

Project Manager: Neil Frasca

ALPHA Quote #:

Client Information

Client: TRC Environmental Corp

Address: 650 Suffolk St.

Lowell, MA

Phone: (978) 973-5167

Fax:

Email: NFrasca@trccompanies.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: 5-1-19 Time:

Report Information Data Deliverables

☐ FAX ☐ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
EPA	Dewatering General Permit

Other Project Specific Requirements/Comments/Detection Limits:

Antimony, Arsenic, Cadmium, Chromium Total, Chromium VI, Copper, Lead, Mercury, Nickel, Selenium, Silver, Zinc, Iron, method 200.7

ANALYSIS

SAMPLE HANDLING
Filtration
☒ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Total Metals (see comment)	Hardness	Chlorine	Dissolved Metals (see comment)	Sample Specific Comments	TOTAL # BOTTLES
17747-01	Frac Tank-1	4/30/14	12:20	W	GP	☒	☒	☒	☒		
Container Type						P	P	P	P		
Preservative						-	-	-	-		

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	4/30/14 1343	[signature]	4/30/19 1343

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I-NJ) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L1917991
Client:	TRC Environmental Consultants 650 Suffolk Street Wannalancit Mills Lowell, MA 01854
ATTN:	Neil Frasca
Phone:	(978) 656-3686
Project Name:	THE ROPEWALK COMPLEX
Project Number:	311827
Report Date:	05/03/19

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

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

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1917991-01	FRAC TANK-1	WATER	CHARLESTOWN, MA	05/01/19 12:15	05/01/19

Project Name:	THE ROPEWALK COMPLEX	**Lab Number:**	L1917991
Project Number:	311827	**Report Date:**	05/03/19

Case Narrative

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

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

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

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

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

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

Project Name:	THE ROPEWALK COMPLEX	**Lab Number:**	L1917991
Project Number:	311827	**Report Date:**	05/03/19

Case Narrative (continued)

Report Submission

May 03, 2019: This final report includes the results of all requested analyses.

May 02, 2019: This is a preliminary report.

Volatile Organics by Method 624

L1917991-01 was analyzed on a dilution. The MWRA detection limits were achieved.

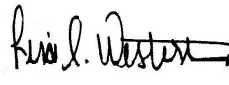
PCBs

L1917991-01: The surrogate recoveries were outside the acceptance criteria for decachlorobiphenyl (24%29%); however, the recoveries were confirmed by the Pesticides analysis.

Pesticides

L1917991-01: The surrogate recoveries were outside the acceptance criteria for 2,4,5,6-tetrachloro-m-xylene (31%/33%) and decachlorobiphenyl (30%); however, the recoveries were confirmed by the PCB analysis.

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

Authorized Signature:  Lisa Westerlind

Title: Technical Director/Representative Date: 05/03/19

ORGANICS

VOLATILES

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01 D
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 05/02/19 13:39
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	10	--	10
1,1-Dichloroethane	ND		ug/l	15	--	10
Chloroform	ND		ug/l	10	--	10
Carbon tetrachloride	ND		ug/l	10	--	10
1,2-Dichloropropane	ND		ug/l	35	--	10
Dibromochloromethane	ND		ug/l	10	--	10
1,1,2-Trichloroethane	ND		ug/l	15	--	10
2-Chloroethylvinyl ether	ND		ug/l	100	--	10
Tetrachloroethene	ND		ug/l	10	--	10
Chlorobenzene	ND		ug/l	35	--	10
Trichlorofluoromethane	ND		ug/l	50	--	10
1,2-Dichloroethane	ND		ug/l	15	--	10
1,1,1-Trichloroethane	ND		ug/l	20	--	10
Bromodichloromethane	ND		ug/l	10	--	10
trans-1,3-Dichloropropene	ND		ug/l	15	--	10
cis-1,3-Dichloropropene	ND		ug/l	15	--	10
1,3-Dichloropropene, Total	ND		ug/l	15	--	10
Bromoform	ND		ug/l	10	--	10
1,1,2,2-Tetrachloroethane	ND		ug/l	10	--	10
Benzene	ND		ug/l	10	--	10
Toluene	ND		ug/l	10	--	10
Ethylbenzene	ND		ug/l	10	--	10
Chloromethane	ND		ug/l	50	--	10
Bromomethane	ND		ug/l	50	--	10
Vinyl chloride	ND		ug/l	10	--	10
Chloroethane	ND		ug/l	20	--	10
1,1-Dichloroethene	ND		ug/l	10	--	10
trans-1,2-Dichloroethene	ND		ug/l	15	--	10

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01 D
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
cis-1,2-Dichloroethene	ND		ug/l	10	--	10
Trichloroethene	ND		ug/l	10	--	10
1,2-Dichlorobenzene	ND		ug/l	50	--	10
1,3-Dichlorobenzene	ND		ug/l	50	--	10
1,4-Dichlorobenzene	ND		ug/l	50	--	10
p/m-Xylene	ND		ug/l	20	--	10
o-xylene	ND		ug/l	10	--	10
Xylenes, Total	ND		ug/l	10	--	10
Styrene	ND		ug/l	10	--	10
Acetone	ND		ug/l	100	--	10
Carbon disulfide	ND		ug/l	50	--	10
2-Butanone	ND		ug/l	100	--	10
Vinyl acetate	ND		ug/l	100	--	10
4-Methyl-2-pentanone	ND		ug/l	100	--	10
2-Hexanone	ND		ug/l	100	--	10
Acrolein	ND		ug/l	80	--	10
Acrylonitrile	ND		ug/l	100	--	10
Dibromomethane	ND		ug/l	10	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	89		60-140
Fluorobenzene	83		60-140
4-Bromofluorobenzene	90		60-140

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 05/02/19 12:34
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1232537-8					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	3.5	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	3.5	--
Trichlorofluoromethane	ND		ug/l	5.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	1.5	--
cis-1,3-Dichloropropene	ND		ug/l	1.5	--
1,3-Dichloropropene, Total	ND		ug/l	1.5	--
Bromoform	ND		ug/l	1.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	5.0	--
Bromomethane	ND		ug/l	5.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.5	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 05/02/19 12:34
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1232537-8					
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	--
Styrene	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	10	--
Vinyl acetate	ND		ug/l	10	--
4-Methyl-2-pentanone	ND		ug/l	10	--
2-Hexanone	ND		ug/l	10	--
Acrolein	ND		ug/l	8.0	--
Acrylonitrile	ND		ug/l	10	--
Dibromomethane	ND		ug/l	1.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	91		60-140
Fluorobenzene	83		60-140
4-Bromofluorobenzene	89		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232537-7								
Methylene chloride	85		-		60-140	-		28
1,1-Dichloroethane	90		-		50-150	-		49
Chloroform	90		-		70-135	-		54
Carbon tetrachloride	100		-		70-130	-		41
1,2-Dichloropropane	90		-		35-165	-		55
Dibromochloromethane	115		-		70-135	-		50
1,1,2-Trichloroethane	110		-		70-130	-		45
2-Chloroethylvinyl ether	95		-		1-225	-		71
Tetrachloroethene	120		-		70-130	-		39
Chlorobenzene	90		-		65-135	-		53
Trichlorofluoromethane	95		-		50-150	-		84
1,2-Dichloroethane	100		-		70-130	-		49
1,1,1-Trichloroethane	100		-		70-130	-		36
Bromodichloromethane	110		-		65-135	-		56
trans-1,3-Dichloropropene	90		-		50-150	-		86
cis-1,3-Dichloropropene	95		-		25-175	-		58
Bromoform	85		-		70-130	-		42
1,1,2,2-Tetrachloroethane	90		-		60-140	-		61
Benzene	85		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	90		-		60-140	-		63
Chloromethane	110		-		1-205	-		60
Bromomethane	65		-		15-185	-		61

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232537-7								
Vinyl chloride	90		-		5-195	-		66
Chloroethane	90		-		40-160	-		78
1,1-Dichloroethene	90		-		50-150	-		32
trans-1,2-Dichloroethene	95		-		70-130	-		45
cis-1,2-Dichloroethene	85		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	95		-		65-135	-		57
1,3-Dichlorobenzene	90		-		70-130	-		43
1,4-Dichlorobenzene	90		-		65-135	-		57
p/m-Xylene	95		-		60-140	-		30
o-xylene	90		-		60-140	-		30
Styrene	90		-		60-140	-		30
Acetone	98		-		40-160	-		30
Carbon disulfide	85		-		60-140	-		30
2-Butanone	96		-		60-140	-		30
Vinyl acetate	98		-		60-140	-		30
4-Methyl-2-pentanone	112		-		60-140	-		30
2-Hexanone	120		-		60-140	-		30
Acrolein	70		-		60-140	-		30
Acrylonitrile	90		-		60-140	-		60
Dibromomethane	90		-		70-130	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232537-7								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	99				60-140
Fluorobenzene	91				60-140
4-Bromofluorobenzene	90				60-140

SEMIVOLATILES

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 05/02/19 14:03
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 05/02/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	2.0	--	1
Benzidine[1]	ND		ug/l	20	--	1
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--	1
Hexachlorobenzene	ND		ug/l	2.0	--	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--	1
2-Chloronaphthalene	ND		ug/l	2.0	--	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--	1
2,4-Dinitrotoluene	ND		ug/l	5.0	--	1
2,6-Dinitrotoluene	ND		ug/l	5.0	--	1
Azobenzene[1]	ND		ug/l	2.0	--	1
Fluoranthene	ND		ug/l	2.0	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--	1
Hexachlorobutadiene	ND		ug/l	2.0	--	1
Hexachlorocyclopentadiene[1]	ND		ug/l	10	--	1
Hexachloroethane	ND		ug/l	2.0	--	1
Isophorone	ND		ug/l	5.0	--	1
Naphthalene	ND		ug/l	2.0	--	1
Nitrobenzene	ND		ug/l	2.0	--	1
NDPA/DPA[1]	ND		ug/l	2.0	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--	1
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

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01 Date Collected: 05/01/19 12:15

Client ID: FRAC TANK-1 Date Received: 05/01/19

Sample Location: CHARLESTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dimethyl phthalate	ND		ug/l	5.0	--	1
Benzo(a)anthracene	ND		ug/l	2.0	--	1
Benzo(a)pyrene	ND		ug/l	2.0	--	1
Benzo(b)fluoranthene	ND		ug/l	2.0	--	1
Benzo(k)fluoranthene	ND		ug/l	2.0	--	1
Chrysene	ND		ug/l	2.0	--	1
Acenaphthylene	ND		ug/l	2.0	--	1
Anthracene	ND		ug/l	2.0	--	1
Benzo(ghi)perylene	ND		ug/l	2.0	--	1
Fluorene	ND		ug/l	2.0	--	1
Phenanthrene	ND		ug/l	2.0	--	1
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--	1
Pyrene	ND		ug/l	2.0	--	1
4-Chloroaniline[1]	ND		ug/l	5.0	--	1
Dibenzofuran[1]	ND		ug/l	2.0	--	1
2-Methylnaphthalene[1]	ND		ug/l	2.0	--	1
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	--	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	--	1
p-Chloro-m-cresol[1]	ND		ug/l	2.0	--	1
2-Chlorophenol	ND		ug/l	2.0	--	1
2,4-Dichlorophenol	ND		ug/l	5.0	--	1
2,4-Dimethylphenol	ND		ug/l	5.0	--	1
2-Nitrophenol	ND		ug/l	5.0	--	1
4-Nitrophenol	ND		ug/l	10	--	1
2,4-Dinitrophenol	ND		ug/l	20	--	1
4,6-Dinitro-o-cresol	ND		ug/l	10	--	1
Pentachlorophenol	ND		ug/l	5.0	--	1
Phenol	ND		ug/l	5.0	--	1
2-Methylphenol[1]	ND		ug/l	5.0	--	1
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	--	1
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	--	1
Benzoic Acid[1]	ND		ug/l	50	--	1
Benzyl Alcohol[1]	ND		ug/l	2.0	--	1

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01 Date Collected: 05/01/19 12:15

Client ID: FRAC TANK-1 Date Received: 05/01/19

Sample Location: CHARLESTOWN, MA Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	36		25-87
Phenol-d6	25		16-65
Nitrobenzene-d5	75		42-122
2-Fluorobiphenyl	77		46-121
2,4,6-Tribromophenol	76		45-128
4-Terphenyl-d14	54		47-138

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 05/02/19 13:37
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 05/02/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1232623-1					
Acenaphthene	ND		ug/l	2.0	--
Benzidine[1]	ND		ug/l	20	--
1,2,4-Trichlorobenzene	ND		ug/l	5.0	--
Hexachlorobenzene	ND		ug/l	2.0	--
Bis(2-chloroethyl)ether	ND		ug/l	2.0	--
2-Chloronaphthalene	ND		ug/l	2.0	--
3,3'-Dichlorobenzidine	ND		ug/l	5.0	--
2,4-Dinitrotoluene	ND		ug/l	5.0	--
2,6-Dinitrotoluene	ND		ug/l	5.0	--
Azobenzene[1]	ND		ug/l	2.0	--
Fluoranthene	ND		ug/l	2.0	--
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	--
4-Bromophenyl phenyl ether	ND		ug/l	2.0	--
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	--
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	--
Hexachlorobutadiene	ND		ug/l	2.0	--
Hexachlorocyclopentadiene[1]	ND		ug/l	10	--
Hexachloroethane	ND		ug/l	2.0	--
Isophorone	ND		ug/l	5.0	--
Naphthalene	ND		ug/l	2.0	--
Nitrobenzene	ND		ug/l	2.0	--
NDPA/DPA[1]	ND		ug/l	2.0	--
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	--
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	--

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 05/02/19 13:37
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 05/02/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1232623-1					
Benzo(a)anthracene	ND		ug/l	2.0	--
Benzo(a)pyrene	ND		ug/l	2.0	--
Benzo(b)fluoranthene	ND		ug/l	2.0	--
Benzo(k)fluoranthene	ND		ug/l	2.0	--
Chrysene	ND		ug/l	2.0	--
Acenaphthylene	ND		ug/l	2.0	--
Anthracene	ND		ug/l	2.0	--
Benzo(ghi)perylene	ND		ug/l	2.0	--
Fluorene	ND		ug/l	2.0	--
Phenanthrene	ND		ug/l	2.0	--
Dibenzo(a,h)anthracene	ND		ug/l	2.0	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	--
Pyrene	ND		ug/l	2.0	--
4-Chloroaniline[1]	ND		ug/l	5.0	--
Dibenzofuran[1]	ND		ug/l	2.0	--
2-Methylnaphthalene[1]	ND		ug/l	2.0	--
n-Nitrosodimethylamine[1]	ND		ug/l	2.0	--
2,4,6-Trichlorophenol	ND		ug/l	5.0	--
p-Chloro-m-cresol[1]	ND		ug/l	2.0	--
2-Chlorophenol	ND		ug/l	2.0	--
2,4-Dichlorophenol	ND		ug/l	5.0	--
2,4-Dimethylphenol	ND		ug/l	5.0	--
2-Nitrophenol	ND		ug/l	5.0	--
4-Nitrophenol	ND		ug/l	10	--
2,4-Dinitrophenol	ND		ug/l	20	--
4,6-Dinitro-o-cresol	ND		ug/l	10	--
Pentachlorophenol	ND		ug/l	5.0	--
Phenol	ND		ug/l	5.0	--
2-Methylphenol[1]	ND		ug/l	5.0	--

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 05/02/19 13:37
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 05/02/19 00:40

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1232623-1					
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	5.0	--
2,4,5-Trichlorophenol[1]	ND		ug/l	5.0	--
Benzoic Acid[1]	ND		ug/l	50	--
Benzyl Alcohol[1]	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	47		25-87
Phenol-d6	30		16-65
Nitrobenzene-d5	91		42-122
2-Fluorobiphenyl	84		46-121
2,4,6-Tribromophenol	74		45-128
4-Terphenyl-d14	91		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232623-2								
Acenaphthene	83		-		60-132	-		30
Benzidine[1]	37		-		0-70	-		30
1,2,4-Trichlorobenzene	66		-		57-130	-		30
Hexachlorobenzene	85		-		8-142	-		30
Bis(2-chloroethyl)ether	74		-		43-126	-		30
2-Chloronaphthalene	82		-		65-120	-		30
3,3'-Dichlorobenzidine	39		-		8-213	-		30
2,4-Dinitrotoluene	105		-		48-127	-		30
2,6-Dinitrotoluene	102		-		68-137	-		30
Azobenzene[1]	96		-		44-115	-		30
Fluoranthene	97		-		43-121	-		30
4-Chlorophenyl phenyl ether	86		-		38-145	-		30
4-Bromophenyl phenyl ether	90		-		65-120	-		30
Bis(2-chloroisopropyl)ether	85		-		63-139	-		30
Bis(2-chloroethoxy)methane	82		-		49-165	-		30
Hexachlorobutadiene	65		-		38-120	-		30
Hexachlorocyclopentadiene[1]	65		-		7-118	-		30
Hexachloroethane	58		-		55-120	-		30
Isophorone	81		-		47-180	-		30
Naphthalene	73		-		36-120	-		30
Nitrobenzene	82		-		54-158	-		30
NDPA/DPA[1]	90		-		45-112	-		30
n-Nitrosodi-n-propylamine	87		-		14-198	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232623-2								
Bis(2-ethylhexyl)phthalate	93		-		29-137	-		30
Butyl benzyl phthalate	92		-		1-140	-		30
Di-n-butylphthalate	92		-		8-120	-		30
Di-n-octylphthalate	90		-		19-132	-		30
Diethyl phthalate	88		-		1-120	-		30
Dimethyl phthalate	86		-		1-120	-		30
Benzo(a)anthracene	92		-		42-133	-		30
Benzo(a)pyrene	97		-		32-148	-		30
Benzo(b)fluoranthene	91		-		42-140	-		30
Benzo(k)fluoranthene	95		-		25-146	-		30
Chrysene	91		-		44-140	-		30
Acenaphthylene	86		-		54-126	-		30
Anthracene	91		-		43-120	-		30
Benzo(ghi)perylene	93		-		1-195	-		30
Fluorene	88		-		70-120	-		30
Phenanthrene	88		-		65-120	-		30
Dibenzo(a,h)anthracene	90		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	89		-		1-151	-		30
Pyrene	98		-		70-120	-		30
4-Chloroaniline[1]	74		-		10-100	-		30
Dibenzofuran[1]	84		-		23-126	-		30
2-Methylnaphthalene[1]	77		-		40-109	-		30
n-Nitrosodimethylamine[1]	41		-		15-68	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232623-2								
2,4,6-Trichlorophenol	84		-		52-129	-		30
p-Chloro-m-cresol[1]	83		-		68-130	-		30
2-Chlorophenol	67		-		36-120	-		30
2,4-Dichlorophenol	78		-		53-122	-		30
2,4-Dimethylphenol	80		-		42-120	-		30
2-Nitrophenol	77		-		45-167	-		30
4-Nitrophenol	55		-		13-129	-		30
2,4-Dinitrophenol	93		-		1-173	-		30
4,6-Dinitro-o-cresol	113		-		56-130	-		30
Pentachlorophenol	86		-		38-152	-		30
Phenol	32		-		17-120	-		30
2-Methylphenol[1]	67		-		38-102	-		30
3-Methylphenol/4-Methylphenol[1]	64		-		35-103	-		30
2,4,5-Trichlorophenol[1]	86		-		47-126	-		30
Benzoic Acid[1]	28		-		2-55	-		30
Benzyl Alcohol[1]	66		-		31-103	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1232623-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	43				25-87
Phenol-d6	32				16-65
Nitrobenzene-d5	86				42-122
2-Fluorobiphenyl	82				46-121
2,4,6-Tribromophenol	86				45-128
4-Terphenyl-d14	95				47-138

PETROLEUM HYDROCARBONS

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID:	L1917991-01	Date Collected:	05/01/19 12:15
Client ID:	FRAC TANK-1	Date Received:	05/01/19
Sample Location:	CHARLESTOWN, MA	Field Prep:	Not Specified
Sample Depth:			
Matrix:	Water	Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1	Extraction Date:	05/02/19 15:32
Analytical Date:	05/03/19 04:49	Cleanup Method1:	EPH-04-1
Analyst:	LL	Cleanup Date1:	05/02/19

Quality Control Information

Condition of sample received:	Satisfactory
Aqueous Preservative:	Laboratory Provided Preserved Container
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Extractable Petroleum Hydrocarbons - Westborough Lab						
C9-C18 Aliphatics	ND		ug/l	100	--	1
C19-C36 Aliphatics	ND		ug/l	100	--	1
C11-C22 Aromatics	ND		ug/l	100	--	1
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	54		40-140
o-Terphenyl	73		40-140
2-Fluorobiphenyl	73		40-140
2-Bromonaphthalene	73		40-140

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 05/03/19 03:14
Analyst: LL

Extraction Method: EPA 3510C
Extraction Date: 05/02/19 15:32
Cleanup Method: EPH-04-1
Cleanup Date: 05/02/19

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1233230-1					
C9-C18 Aliphatics	ND		ug/l	100	--
C19-C36 Aliphatics	ND		ug/l	100	--
C11-C22 Aromatics	ND		ug/l	100	--
C11-C22 Aromatics, Adjusted	ND		ug/l	100	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	76		40-140
o-Terphenyl	62		40-140
2-Fluorobiphenyl	61		40-140
2-Bromonaphthalene	61		40-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1233230-2 WG1233230-3								
C9-C18 Aliphatics	74		87		40-140	16		25
C19-C36 Aliphatics	67		73		40-140	9		25
C11-C22 Aromatics	78		77		40-140	1		25
Naphthalene	58		65		40-140	11		25
2-Methylnaphthalene	59		64		40-140	8		25
Acenaphthylene	65		70		40-140	7		25
Acenaphthene	67		71		40-140	6		25
Fluorene	72		74		40-140	3		25
Phenanthrene	77		76		40-140	1		25
Anthracene	78		77		40-140	1		25
Fluoranthene	83		80		40-140	4		25
Pyrene	84		81		40-140	4		25
Benzo(a)anthracene	83		80		40-140	4		25
Chrysene	82		78		40-140	5		25
Benzo(b)fluoranthene	86		83		40-140	4		25
Benzo(k)fluoranthene	84		81		40-140	4		25
Benzo(a)pyrene	79		77		40-140	3		25
Indeno(1,2,3-cd)Pyrene	81		80		40-140	1		25
Dibenzo(a,h)anthracene	74		73		40-140	1		25
Benzo(ghi)perylene	68		67		40-140	1		25
Nonane (C9)	43		54		30-140	23		25
Decane (C10)	50		62		40-140	21		25
Dodecane (C12)	54		68		40-140	23		25

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1233230-2 WG1233230-3								
Tetradecane (C14)	58		72		40-140	22		25
Hexadecane (C16)	64		75		40-140	16		25
Octadecane (C18)	72		80		40-140	11		25
Nonadecane (C19)	72		81		40-140	12		25
Eicosane (C20)	75		83		40-140	10		25
Docosane (C22)	74		81		40-140	9		25
Tetracosane (C24)	74		82		40-140	10		25
Hexacosane (C26)	75		82		40-140	9		25
Octacosane (C28)	74		82		40-140	10		25
Triacontane (C30)	74		82		40-140	10		25
Hexatriacontane (C36)	75		82		40-140	9		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	74		79		40-140
o-Terphenyl	79		77		40-140
2-Fluorobiphenyl	78		75		40-140
2-Bromonaphthalene	79		75		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

PCBS

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 05/02/19 14:01
Analyst: KB

Extraction Method: EPA 608.3
Extraction Date: 05/02/19 03:23
Cleanup Method: EPA 3665A
Cleanup Date: 05/02/19
Cleanup Method: EPA 3660B
Cleanup Date: 05/02/19

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	42		37-123	B
Decachlorobiphenyl	**29**	Q	38-114	B
2,4,5,6-Tetrachloro-m-xylene	41		37-123	A
Decachlorobiphenyl	**24**	Q	38-114	A

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 05/02/19 14:13
Analyst: KB

Extraction Method: EPA 608.3
Extraction Date: 05/02/19 03:23
Cleanup Method: EPA 3665A
Cleanup Date: 05/02/19
Cleanup Method: EPA 3660B
Cleanup Date: 05/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1232666-1						
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	83		37-123	B
Decachlorobiphenyl	85		38-114	B
2,4,5,6-Tetrachloro-m-xylene	86		37-123	A
Decachlorobiphenyl	76		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01 Batch: WG1232666-2									
Aroclor 1016	84		-		50-140	-		36	A
Aroclor 1260	71		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87				37-123	B
Decachlorobiphenyl	97				38-114	B
2,4,5,6-Tetrachloro-m-xylene	91				37-123	A
Decachlorobiphenyl	77				38-114	A

PESTICIDES

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 05/02/19 13:36
Analyst: SL

Extraction Method: EPA 608.3
Extraction Date: 05/01/19 23:32
Cleanup Method: EPA 3620B
Cleanup Date: 05/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							
Delta-BHC	ND		ug/l	0.020	--	1	A
Lindane	ND		ug/l	0.020	--	1	A
Alpha-BHC	ND		ug/l	0.020	--	1	A
Beta-BHC	ND		ug/l	0.020	--	1	A
Heptachlor	ND		ug/l	0.020	--	1	A
Aldrin	ND		ug/l	0.020	--	1	A
Heptachlor epoxide	ND		ug/l	0.020	--	1	A
Endrin	ND		ug/l	0.040	--	1	A
Endrin aldehyde	ND		ug/l	0.040	--	1	A
Endrin ketone[1]	ND		ug/l	0.040	--	1	A
Dieldrin	ND		ug/l	0.040	--	1	A
4,4'-DDE	ND		ug/l	0.040	--	1	B
4,4'-DDD	ND		ug/l	0.040	--	1	B
4,4'-DDT	ND		ug/l	0.040	--	1	A
Endosulfan I	ND		ug/l	0.020	--	1	A
Endosulfan II	ND		ug/l	0.040	--	1	A
Endosulfan sulfate	ND		ug/l	0.040	--	1	A
Methoxychlor[1]	ND		ug/l	0.100	--	1	A
Toxaphene	ND		ug/l	0.400	--	1	A
Chlordane	ND		ug/l	0.200	--	1	A
cis-Chlordane[1]	ND		ug/l	0.020	--	1	A
trans-Chlordane[1]	ND	IP	ug/l	0.020	--	1	A

Project Name: THE ROPEWALK COMPLEX **Lab Number:** L1917991

Project Number: 311827 **Report Date:** 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01 Date Collected: 05/01/19 12:15

Client ID: FRAC TANK-1 Date Received: 05/01/19

Sample Location: CHARLESTOWN, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Organochlorine Pesticides by GC - Westborough Lab							

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	**31**	Q	47-124	A
Decachlorobiphenyl	**30**	Q	32-167	A
2,4,5,6-Tetrachloro-m-xylene	**33**	Q	47-124	B
Decachlorobiphenyl	34		32-167	B

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 05/02/19 12:09
Analyst: SL

Extraction Method: EPA 608.3
Extraction Date: 05/01/19 14:37
Cleanup Method: EPA 3620B
Cleanup Date: 05/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1232446-1						
Delta-BHC	ND		ug/l	0.020	--	A
Lindane	ND		ug/l	0.020	--	A
Alpha-BHC	ND		ug/l	0.020	--	A
Beta-BHC	ND		ug/l	0.020	--	A
Heptachlor	ND		ug/l	0.020	--	A
Aldrin	ND		ug/l	0.020	--	A
Heptachlor epoxide	ND		ug/l	0.020	--	A
Endrin	ND		ug/l	0.040	--	A
Endrin aldehyde	ND		ug/l	0.040	--	A
Endrin ketone[1]	ND		ug/l	0.040	--	A
Dieldrin	ND		ug/l	0.040	--	A
4,4'-DDE	ND		ug/l	0.040	--	A
4,4'-DDD	ND		ug/l	0.040	--	A
4,4'-DDT	ND		ug/l	0.040	--	A
Endosulfan I	ND		ug/l	0.020	--	A
Endosulfan II	ND		ug/l	0.040	--	A
Endosulfan sulfate	ND		ug/l	0.040	--	A
Methoxychlor[1]	ND		ug/l	0.100	--	A
Toxaphene	ND		ug/l	0.400	--	A
Chlordane	ND		ug/l	0.200	--	A
cis-Chlordane[1]	ND		ug/l	0.020	--	A
trans-Chlordane[1]	ND		ug/l	0.020	--	A

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 05/02/19 12:09
Analyst: SL

Extraction Method: EPA 608.3
Extraction Date: 05/01/19 14:37
Cleanup Method: EPA 3620B
Cleanup Date: 05/02/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Organochlorine Pesticides by GC - Westborough Lab for sample(s): 01 Batch: WG1232446-1						

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		47-124	A
Decachlorobiphenyl	66		32-167	A
2,4,5,6-Tetrachloro-m-xylene	67		47-124	B
Decachlorobiphenyl	81		32-167	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1232446-2									
Delta-BHC	72		-		19-140	-		52	A
Lindane	71		-		32-140	-		39	A
Alpha-BHC	72		-		37-140	-		36	A
Beta-BHC	67		-		17-147	-		44	A
Heptachlor	47		-		34-140	-		43	A
Aldrin	54		-		42-140	-		35	A
Heptachlor epoxide	50		-		37-142	-		26	A
Endrin	68		-		30-147	-		48	A
Endrin aldehyde	52		-		30-150	-		30	A
Endrin ketone[1]	68		-		30-150	-		30	A
Dieldrin	67		-		36-146	-		49	A
4,4'-DDE	60		-		30-145	-		35	A
4,4'-DDD	67		-		31-141	-		39	A
4,4'-DDT	70		-		25-160	-		42	A
Endosulfan I	57		-		45-153	-		28	A
Endosulfan II	65		-		1-202	-		53	A
Endosulfan sulfate	66		-		26-144	-		38	A
Methoxychlor[1]	62		-		30-150	-		30	A
cis-Chlordane[1]	52		-		45-140	-		35	A
trans-Chlordane[1]	68		-		45-140	-		35	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Organochlorine Pesticides by GC - Westborough Lab Associated sample(s): 01 Batch: WG1232446-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	57				47-124	A
Decachlorobiphenyl	63				32-167	A
2,4,5,6-Tetrachloro-m-xylene	65				47-124	B
Decachlorobiphenyl	82				32-167	B

INORGANICS
&
MISCELLANEOUS

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

SAMPLE RESULTS

Lab ID: L1917991-01
Client ID: FRAC TANK-1
Sample Location: CHARLESTOWN, MA
Sample Depth:
Matrix: Water

Date Collected: 05/01/19 12:15
Date Received: 05/01/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Oil & Grease, Hem-Grav	ND		mg/l	4.4	--	1.1	05/01/19 17:30	05/01/19 18:00	74,1664A	ML

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827
Lab Number: L1917991
Report Date: 05/03/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG1232518-1										
Oil & Grease, Hem-Grav	ND		mg/l	4.0	--	1	05/01/19 17:30	05/01/19 18:00	74,1664A	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1232518-2								
Oil & Grease, Hem-Grav	86		-		78-114	-		18

Matrix Spike Analysis
Batch Quality Control

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232518-4 QC Sample: L1917713-01 Client ID: MS Sample												
Oil & Grease, Hem-Grav	49	42.6	120	**170**	Q	-	-		78-114	-		18

Lab Duplicate Analysis

Batch Quality Control

Project Name: THE ROPEWALK COMPLEX

Project Number: 311827

Lab Number: L1917991

Report Date: 05/03/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1232518-3 QC Sample: L1917713-01 Client ID: DUP Sample						
Oil & Grease, Hem-Grav	49	48	mg/l	2		18

Project Name: THE ROPEWALK COMPLEX
Project Number: 311827

Lab Number: L1917991
Report Date: 05/03/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1917991-01A	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-MWRA(3)
L1917991-01B	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-MWRA(3)
L1917991-01C	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-MWRA(3)
L1917991-01E	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		OG-1664(28)
L1917991-01F	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		EPH-10(14)
L1917991-01G	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		EPH-10(14)
L1917991-01H	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L1917991-01I	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L1917991-01J	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PESTICIDE-608.3(7)
L1917991-01K	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PESTICIDE-608.3(7)
L1917991-01L	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1(7)
L1917991-01M	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1(7)

*Values in parentheses indicate holding time in days

Project Name:	THE ROPEWALK COMPLEX	**Lab Number:**	L1917991
Project Number:	311827	**Report Date:**	05/03/19

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

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

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

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

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

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

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

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

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

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

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

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

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

Footnotes

Report Format: Data Usability Report

Project Name:	THE ROPEWALK COMPLEX	**Lab Number:**	L1917991
Project Number:	311827	**Report Date:**	05/03/19

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

Terms

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

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

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

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

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

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

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

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

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	THE ROPEWALK COMPLEX	**Lab Number:**	L1917991
Project Number:	311827	**Report Date:**	05/03/19

REFERENCES

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.

98 Method for the Determination of Extractable Petroleum Hydrocarbons (EPH), MassDEP, May 2004, Revision 1.1 with QC Requirements & Performance Standards for the Analysis of EPH under the Massachusetts Contingency Plan, WSC-CAM-IVB, July 2010.

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), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF COSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 5/1/19

ALPHA Job #: L1917991

Project Information

Project Name: The Ropewalk Complex

Project Location: Charlestown Massachusetts

Project #: 311827

Project Manager: Neil Frasca

ALPHA Quote #:

Client Information

Client: TRC

Address: 650 Suffolk Street

Lowell, MA 01854

Phone: 978-970-5600

Fax:

Email: jstapleton@trccompanies.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED) 24 Hr

Due Date: 5/2/2019 Time:

Report Information Data Deliverables

☐ FAX ☒ EMAIL

☐ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
MWRA	MWRA Discharge Permit

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☒ Yes ☐ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please send report to nfrasca@trccompanies in additional to jstapleton

ANALYSIS

SAMPLE HANDLING
Filtration
☒ Done
☒ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs via 624	SVOCs via 625	PCBs via 608	Pesticides via 608	EPH via MassDEP method	O&G via 1664							Sample Specific Comments	TOTAL # BOTTLES
17991-01	Frac Tank-1	~~4/30/19~~ 5/1/19	12:15	GW	GP	☒	☒	☒	☒	☒	☒	☐	☐	☐	☐	☐	☐		
Container Type						V	A	A	A	A	A	A	A	-	-	-	-		
Preservative						F	A	A	A	A	A	A	A	-	-	-	-		

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	5/1/19 1404	Chen O'Blean	5/1/19 1404

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 5-JAN-12)

ANALYTICAL REPORT

Lab Number:	L1924683
Client:	TRC Environmental Consultants 650 Suffolk Street Wannalancit Mills Lowell, MA 01854
ATTN:	Neil Frasca
Phone:	(978) 656-3686
Project Name:	CHARLESTOWN ROPEWALK
Project Number:	311827
Report Date:	06/18/19

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

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

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1924683-01	RGP BOSTON HARBOR	WATER	CHARLESTOWN, MA	06/10/19 12:15	06/10/19
L1924683-02	RGP ADDITIONAL	WATER	CHARLESTOWN, MA	06/10/19 13:10	06/10/19

Project Name:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

Case Narrative

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

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

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

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

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

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

Project Name:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

Case Narrative (continued)

Report Submission

June 18, 2019: This final report includes the results of all requested analyses.

June 17, 2019: This preliminary report includes the results of the Semivolatile Organics by SIM analysis performed on L1924683-02.

June 13, 2019: This is a preliminary report.

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

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

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics by Method 624

L1924683-02: The sample has elevated detection limits due to the dilution required by the sample matrix. Sample is cloudy.

Volatile Organics by SIM

L1924683-02: The sample has an elevated detection limit for 1,4-Dioxane due to the dilution required by the sample matrix. Sample is cloudy.

Total Metals

L1924683-02: 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 target and non-target elements.

The WG1247549-3 MS recovery for iron (0%), performed on L1924683-02, does not apply because the sample concentration is greater than four times the spike amount added.

Project Name:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

Case Narrative (continued)

Dissolved Metals

The WG1247545-4 Laboratory Duplicate RPDs for arsenic (30%), chromium (69%), copper (47%), lead (31%), nickel (95%) and zinc (125%), performed on L1924683-02, are outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

The WG1247547-4 Laboratory Duplicate RPD for iron (92%), performed on L1924683-02, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample. The samples were field-filtered and sediment was observed.

Chromium, Hexavalent (Unfiltered)

L1924683-02: The sample has an elevated detection limit due to the dilution required by the sample matrix.

Chlorine, Total Residual

WG1246670: A Matrix Spike could not be performed due to insufficient sample volume available for analysis.

Nitrogen, Ammonia

The WG1246721-3 Laboratory Duplicate RPD (30%), performed on L1924683-01, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

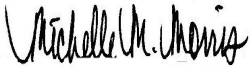
Chromium, Hexavalent (Unfiltered)

The WG1246740-4 MS recovery (50%), performed on L1924683-02, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

Solids, Total Suspended

The WG1246751-2 Laboratory Duplicate RPD (40%), performed on L1924683-02, is outside the acceptance criteria. The elevated RPD has been attributed to the non-homogeneous nature of the native sample.

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

Authorized Signature:  Michelle M. Morris

Title: Technical Director/Representative Date: 06/18/19

ORGANICS

VOLATILES

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02
Client ID: RGP ADDITIONAL
Sample Location: CHARLESTOWN, MA

Date Collected: 06/10/19 13:10
Date Received: 06/10/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 06/12/19 13:40
Analyst: AWS

Extraction Method: EPA 504.1
Extraction Date: 06/12/19 12:21

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	1	A
1,2,3-Trichloropropane	ND		ug/l	0.030	--	1	A

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02 D
Client ID: RGP ADDITIONAL
Sample Location: CHARLESTOWN, MA

Date Collected: 06/10/19 13:10
Date Received: 06/10/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 06/11/19 14:47
Analyst: MM/GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl Ether	ND		ug/l	100	--	10
Tert-Butyl Alcohol	ND		ug/l	1000	--	10
Tertiary-Amyl Methyl Ether	ND		ug/l	200	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	108		60-140
Fluorobenzene	92		60-140
4-Bromofluorobenzene	100		60-140

Project Name: CHARLESTOWN ROPEWALK
Lab Number: L1924683
Project Number: 311827
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02 D
Client ID: RGP ADDITIONAL
Sample Location: CHARLESTOWN, MA

Date Collected: 06/10/19 13:10
Date Received: 06/10/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 06/11/19 14:47
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	500	--	10

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

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 06/11/19 08:05
Analyst: MM/GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1246852-8					
Methyl tert butyl Ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	102		60-140
Fluorobenzene	89		60-140
4-Bromofluorobenzene	100		60-140

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 06/11/19 08:05
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1247068-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	92		60-140
4-Bromofluorobenzene	108		60-140

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 06/12/19 13:25
Analyst: AWS

Extraction Method: EPA 504.1
Extraction Date: 06/12/19 12:21

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 02 Batch: WG1247480-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A
1,2-Dibromo-3-chloropropane	ND		ug/l	0.010	--	A
1,2,3-Trichloropropane	ND		ug/l	0.030	--	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1246852-7								
Methyl tert butyl Ether	85		-		60-140	-		30
Tert-Butyl Alcohol	71		-		60-140	-		30
Tertiary-Amyl Methyl Ether	80		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	104				60-140
Fluorobenzene	89				60-140
4-Bromofluorobenzene	103				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1247068-3								
1,4-Dioxane	94		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	97				60-140
4-Bromofluorobenzene	102				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK

Project Number: 311827

Lab Number: L1924683

Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab Associated sample(s): 02 Batch: WG1247480-2									
1,2-Dibromoethane	95		-		80-120	-			A
1,2-Dibromo-3-chloropropane	96		-		80-120	-			A
1,2,3-Trichloropropane	103		-		80-120	-			A

SEMIVOLATILES

Project Name: CHARLESTOWN ROPEWALK
Lab Number: L1924683
Project Number: 311827
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02
Client ID: RGP ADDITIONAL
Sample Location: CHARLESTOWN, MA

Date Collected: 06/10/19 13:10
Date Received: 06/10/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 06/17/19 17:21
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/14/19 19:07

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		25-87
Phenol-d6	36		16-65
Nitrobenzene-d5	91		42-122
2-Fluorobiphenyl	90		46-121
2,4,6-Tribromophenol	86		45-128
4-Terphenyl-d14	68		47-138

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 06/17/19 16:31
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 06/14/19 19:07

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02 Batch: WG1248830-1					
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	57		25-87
Phenol-d6	38		16-65
Nitrobenzene-d5	105		42-122
2-Fluorobiphenyl	100		46-121
2,4,6-Tribromophenol	89		45-128
4-Terphenyl-d14	107		47-138

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK

Project Number: 311827

Lab Number: L1924683

Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1248830-2								
Acenaphthene	96		-		60-132	-		30
Fluoranthene	110		-		43-121	-		30
Naphthalene	95		-		36-120	-		30
Benzo(a)anthracene	110		-		42-133	-		30
Benzo(a)pyrene	105		-		32-148	-		30
Benzo(b)fluoranthene	106		-		42-140	-		30
Benzo(k)fluoranthene	110		-		25-146	-		30
Chrysene	105		-		44-140	-		30
Acenaphthylene	107		-		54-126	-		30
Anthracene	106		-		43-120	-		30
Benzo(ghi)perylene	102		-		1-195	-		30
Fluorene	100		-		70-120	-		30
Phenanthrene	107		-		65-120	-		30
Dibenzo(a,h)anthracene	108		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	104		-		1-151	-		30
Pyrene	109		-		70-120	-		30
Pentachlorophenol	101		-		38-152	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02 Batch: WG1248830-2

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	68				25-87
Phenol-d6	47				16-65
Nitrobenzene-d5	120				42-122
2-Fluorobiphenyl	111				46-121
2,4,6-Tribromophenol	101				45-128
4-Terphenyl-d14	111				47-138

METALS

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02 Date Collected: 06/10/19 13:10

Client ID: RGP ADDITIONAL Date Received: 06/10/19

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

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.04000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Arsenic, Total	0.01718		mg/l	0.01000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00200	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Chromium, Total	0.04362		mg/l	0.01000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Copper, Total	0.05626		mg/l	0.01000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Iron, Total	30.4		mg/l	0.050	--	1	06/12/19 14:44	06/12/19 19:04	EPA 3005A	19,200.7	LC
Lead, Total	0.03581		mg/l	0.01000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Mercury, Total	0.00023		mg/l	0.00020	--	1	06/11/19 16:49	06/11/19 23:00	EPA 245.1	3,245.1	EA
Nickel, Total	0.03312		mg/l	0.02000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.05000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00400	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
Zinc, Total	0.1076		mg/l	0.1000	--	10	06/12/19 14:44	06/12/19 19:34	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent (Filtered)	0.017		mg/l	0.010	--	1		06/12/19 17:40	NA	107,-	
Chromium, Trivalent (Unfiltered)	ND		mg/l	0.050	--	1		06/12/19 19:34	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	0.0121		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Chromium, Dissolved	0.0172		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0227		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Iron, Dissolved	9.27		mg/l	0.050	--	1	06/12/19 15:20	06/12/19 19:57	EPA 3005A	19,200.7	AB
Lead, Dissolved	0.0163		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	06/11/19 15:05	06/11/19 23:14	EPA 245.1	3,245.1	EA
Nickel, Dissolved	0.0096		mg/l	0.0020	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM
Zinc, Dissolved	0.0257		mg/l	0.0100	--	1	06/12/19 15:20	06/12/19 17:40	EPA 3005A	3,200.8	AM

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1246993-1										
Mercury, Total	ND		mg/l	0.00020	--	1	06/11/19 16:49	06/11/19 22:10	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02 Batch: WG1247007-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	06/11/19 15:05	06/11/19 23:02	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02 Batch: WG1247545-1										
Antimony, Dissolved	ND		mg/l	0.0040	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Nickel, Dissolved	ND		mg/l	0.0020	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	06/12/19 15:20	06/12/19 17:19	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02 Batch: WG1247547-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	06/12/19 15:20	06/12/19 19:24	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1247548-1										
Antimony, Total	ND		mg/l	0.00400	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	06/12/19 14:44	06/12/19 20:23	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 02 Batch: WG1247549-1										
Iron, Total	ND		mg/l	0.050	--	1	06/12/19 14:44	06/12/19 18:56	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK

Project Number: 311827

Lab Number: L1924683

Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1246993-2								
Mercury, Total	108		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1247007-2								
Mercury, Dissolved	102		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1247545-2								
Antimony, Dissolved	88		-		85-115	-		
Arsenic, Dissolved	98		-		85-115	-		
Cadmium, Dissolved	109		-		85-115	-		
Chromium, Dissolved	102		-		85-115	-		
Copper, Dissolved	101		-		85-115	-		
Lead, Dissolved	110		-		85-115	-		
Nickel, Dissolved	108		-		85-115	-		
Selenium, Dissolved	111		-		85-115	-		
Silver, Dissolved	108		-		85-115	-		
Zinc, Dissolved	110		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1247547-2								
Iron, Dissolved	106		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK

Project Number: 311827

Lab Number: L1924683

Report Date: 06/18/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1247548-2					
Antimony, Total	85	-	85-115	-	
Arsenic, Total	102	-	85-115	-	
Cadmium, Total	106	-	85-115	-	
Chromium, Total	103	-	85-115	-	
Copper, Total	102	-	85-115	-	
Lead, Total	113	-	85-115	-	
Nickel, Total	105	-	85-115	-	
Selenium, Total	109	-	85-115	-	
Silver, Total	109	-	85-115	-	
Zinc, Total	111	-	85-115	-	
Total Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1247549-2					
Iron, Total	104	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1246993-3 QC Sample: L1922898-01 Client ID: MS Sample												
Mercury, Total	0.00031	0.005	0.00442	82		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1246993-5 QC Sample: L1924157-04 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00468	94		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247007-3 QC Sample: L1924157-01 Client ID: MS Sample												
Mercury, Dissolved	ND	0.005	0.00325	**65**	Q	-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247007-5 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL												
Mercury, Dissolved	ND	0.005	0.00499	100		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247545-3 QC Sample: L1924157-10 Client ID: MS Sample												
Antimony, Dissolved	0.0064	1	1.176	117		-	-		70-130	-		20
Arsenic, Dissolved	0.0063	0.24	0.2745	112		-	-		70-130	-		20
Cadmium, Dissolved	ND	0.102	0.1114	109		-	-		70-130	-		20
Chromium, Dissolved	ND	0.4	0.4289	107		-	-		70-130	-		20
Copper, Dissolved	ND	0.5	0.5110	102		-	-		70-130	-		20
Lead, Dissolved	ND	1.02	1.150	113		-	-		70-130	-		20
Nickel, Dissolved	0.0053	1	1.088	108		-	-		70-130	-		20
Selenium, Dissolved	ND	0.24	0.2699	112		-	-		70-130	-		20
Silver, Dissolved	ND	0.1	0.1098	110		-	-		70-130	-		20
Zinc, Dissolved	0.0336	1	1.143	111		-	-		70-130	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247547-3 QC Sample: L1924157-10 Client ID: MS Sample												
Iron, Dissolved	8.03	2	9.89	93		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247548-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL										
Antimony, Total	ND	1	0.7650	76		-	-	70-130	-	20
Arsenic, Total	0.01718	0.24	0.2606	101		-	-	70-130	-	20
Cadmium, Total	ND	0.102	0.1131	111		-	-	70-130	-	20
Chromium, Total	0.04362	0.4	0.4265	96		-	-	70-130	-	20
Copper, Total	0.05626	0.5	0.5304	95		-	-	70-130	-	20
Lead, Total	0.03581	1.02	1.164	111		-	-	70-130	-	20
Nickel, Total	0.03312	1	1.050	102		-	-	70-130	-	20
Selenium, Total	ND	0.24	0.2471	103		-	-	70-130	-	20
Silver, Total	ND	0.1	0.1058	106		-	-	70-130	-	20
Zinc, Total	0.1076	1	1.138	103		-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247549-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL										
Iron, Total	30.4	2	21.5	**0**	Q	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1246993-4 QC Sample: L1922898-01 Client ID: DUP Sample						
Mercury, Total	0.00031	0.00040	mg/l	**23**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1246993-6 QC Sample: L1924157-04 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247007-4 QC Sample: L1924157-01 Client ID: DUP Sample						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247007-6 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Mercury, Dissolved	ND	ND	mg/l	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247545-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Antimony, Dissolved	ND	ND	mg/l	NC		20
Arsenic, Dissolved	0.0121	0.0165	mg/l	**30**	Q	20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Chromium, Dissolved	0.0172	0.0351	mg/l	**69**	Q	20
Copper, Dissolved	0.0227	0.0364	mg/l	**47**	Q	20
Lead, Dissolved	0.0163	0.0222	mg/l	**31**	Q	20
Nickel, Dissolved	0.0096	0.0268	mg/l	**95**	Q	20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Zinc, Dissolved	0.0257	0.1118	mg/l	**125**	Q	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247547-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Iron, Dissolved	9.27	25.2	mg/l	**92**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247548-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Antimony, Total	ND	0.05361	mg/l	NC		20
Arsenic, Total	0.01718	0.01985	mg/l	14		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.04362	0.04293	mg/l	2		20
Copper, Total	0.05626	0.05562	mg/l	1		20
Lead, Total	0.03581	0.03511	mg/l	2		20
Nickel, Total	0.03312	0.02866	mg/l	14		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	0.1076	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1247549-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Iron, Total	30.4	30.2	mg/l	1		20

INORGANICS
&
MISCELLANEOUS

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-01
Client ID: RGP BOSTON HARBOR
Sample Location: CHARLESTOWN, MA
Sample Depth:
Matrix: Water
Date Collected: 06/10/19 12:15
Date Received: 06/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
SALINITY	24		SU	2.0	--	1	-	06/10/19 21:01	121,2520B	AS
Nitrogen, Ammonia	0.142		mg/l	0.075	--	1	06/11/19 06:00	06/11/19 21:55	121,4500NH3-BH	AT

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924683-02
Client ID: RGP ADDITIONAL
Sample Location: CHARLESTOWN, MA
Sample Depth:
Matrix: Water

Date Collected: 06/10/19 13:10
Date Received: 06/10/19
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	330		mg/l	10	NA	2	-	06/11/19 06:10	121,2540D	JT
Cyanide, Total	ND		mg/l	0.005	--	1	06/11/19 11:30	06/11/19 15:02	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/10/19 22:08	121,4500CL-D	AS
Nitrogen, Ammonia	0.086		mg/l	0.075	--	1	06/11/19 06:00	06/11/19 21:58	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/11/19 15:00	06/12/19 13:15	74,1664A	JO
Chromium, Hexavalent (Filtered)	ND		mg/l	0.010	--	1	06/11/19 00:01	06/11/19 00:24	1,7196A	JW
Chromium, Hexavalent (Unfiltered)	ND		mg/l	0.050	--	5	06/11/19 04:30	06/11/19 05:04	1,7196A	JW

Project Name: CHARLESTOWN ROPEWALK **Lab Number:** L1924683

Project Number: 311827 **Report Date:** 06/18/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1246670-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	06/10/19 22:08	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1246696-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	06/11/19 00:01	06/11/19 00:22	1,7196A	JW
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG1246721-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	06/11/19 06:00	06/11/19 21:50	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1246740-1										
Chromium, Hexavalent (Unfiltered)	ND		mg/l	0.010	--	1	06/11/19 04:30	06/11/19 05:04	1,7196A	JW
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1246751-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	06/11/19 06:10	121,2540D	JT
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1246885-1										
Cyanide, Total	ND		mg/l	0.005	--	1	06/11/19 11:30	06/11/19 14:42	121,4500CN-CE	LH
General Chemistry - Westborough Lab for sample(s): 02 Batch: WG1247013-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	06/11/19 15:00	06/12/19 13:15	74,1664A	JO

Lab Control Sample Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1246667-1								
SALINITY	99		-			-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1246670-2								
Chlorine, Total Residual	104		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1246696-2								
Chromium, Hexavalent	108		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG1246721-2								
Nitrogen, Ammonia	94		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1246740-2								
Chromium, Hexavalent (Unfiltered)	104		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1246885-2								
Cyanide, Total	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 02 Batch: WG1247013-2								
TPH	80		-		64-132	-		34

Matrix Spike Analysis
Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827
Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246696-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL												
Chromium, Hexavalent	ND	0.1	0.104	104		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1246721-4 QC Sample: L1924683-01 Client ID: RGP BOSTON HARBOR												
Nitrogen, Ammonia	0.142	4	3.75	90		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246740-4 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL												
Chromium, Hexavalent (Unfiltered)	ND	0.5	0.250	**50**	Q	-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246885-4 QC Sample: L1924619-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.200	100		-	-		90-110	-		30
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1247013-4 QC Sample: L1900006-44 Client ID: MS Sample												
TPH	ND	20	7.60	**38**	Q	-	-		64-132	-		34

Lab Duplicate Analysis

Batch Quality Control

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1246667-2 QC Sample: L1924683-01 Client ID: RGP BOSTON HARBOR						
SALINITY	24	24	SU	0		
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246670-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246696-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG1246721-3 QC Sample: L1924683-01 Client ID: RGP BOSTON HARBOR						
Nitrogen, Ammonia	0.142	0.105	mg/l	**30**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246740-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Chromium, Hexavalent (Unfiltered)	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246751-2 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
Solids, Total Suspended	330	220	mg/l	**40**	Q	29
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1246885-3 QC Sample: L1924619-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30
General Chemistry - Westborough Lab Associated sample(s): 02 QC Batch ID: WG1247013-3 QC Sample: L1924683-02 Client ID: RGP ADDITIONAL						
TPH, SGT-HEM	ND	ND	mg/l	NC		34

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1924683-01A	Amber 120ml unpreserved	A	7	7	4.0	Y	Absent		SALINITY(28)
L1924683-01B	Plastic 500ml H2SO4 preserved	A	NA		4.0	Y	Absent		NH3-4500(28)
L1924683-02A	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02A1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02B	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02B1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02C	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02C1	Vial Na2S2O3 preserved	A	NA		4.0	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7),504(14)
L1924683-02D	Vial unpreserved	A	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L1924683-02E	Plastic 120ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),PB-2008S(180),ZN-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)
L1924683-02F	Plastic 120ml HNO3 preserved	A	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),CU-2008T(180),FE-UI(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L1924683-02G	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		HEXCR-7196-UF(1)
L1924683-02H	Plastic 250ml unpreserved	A	7	7	4.0	Y	Absent		HEXCR-7196(1)
L1924683-02J	Plastic 250ml NaOH preserved	A	>12	>12	4.0	Y	Absent		TCN-4500(14)
L1924683-02K	Plastic 500ml H2SO4 preserved	A	NA		4.0	Y	Absent		NH3-4500(28)
L1924683-02L	Plastic 500ml unpreserved	A	7	7	4.0	Y	Absent		TRC-4500(1)
L1924683-02M	Plastic 950ml unpreserved	A	7	7	4.0	Y	Absent		TSS-2540(7)
L1924683-02P	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)
L1924683-02Q	Amber 1000ml HCl preserved	A	NA		4.0	Y	Absent		TPH-1664(28)

*Values in parentheses indicate holding time in days

Project Name: CHARLESTOWN ROPEWALK
Project Number: 311827

Lab Number: L1924683
Report Date: 06/18/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1924683-02R	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		625.1-SIM-RGP(7)
L1924683-02S	Amber 1000ml Na2S2O3	A	7	7	4.0	Y	Absent		625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

Project Name:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

GLOSSARY

Acronyms

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

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

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

EPA - Environmental Protection Agency.

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

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

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

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

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

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

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

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. 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:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

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

Terms

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

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

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

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

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

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

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

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

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

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

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

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

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

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

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

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

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

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

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

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

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	CHARLESTOWN ROPEWALK	**Lab Number:**	L1924683
Project Number:	311827	**Report Date:**	06/18/19

REFERENCES

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

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

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.

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.

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), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

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

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

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

Westborough Facility:

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

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

Mansfield Facility:

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

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

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

CHAIN OF COSTODY

PAGE 1 OF 1

ALPHA ANALYTICAL — World Class Chemistry

Westborough, MA TEL: 508-898-9220 FAX: 508-898-9193
Mansfield, MA TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 6/10/19

ALPHA Job #: L1924683

Project Information

Project Name: Charlestown Ropewalk

Project Location: Charlestown, MA

Project #: 311827

Project Manager: Neil Frasca

ALPHA Quote #:

Client Information

Client: TRC Companies

Address: 650 Suffolk Street

Lowell, MA

Phone: 978-9735167

Fax:

Email: nfrasca@trccompanies.com

☐ These samples have been Previously analyzed by Alpha

Turn-Around Time

☐ Standard ☒ Rush (ONLY IF PRE-APPROVED)

Due Date: 6/12/2019 Time:

Report Information / Data Deliverables

☐ FAX ☒ EMAIL

☒ ADEx ☐ Add'l Deliverables

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed Program	Criteria
EPA RGP	

MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS

☐ Yes ☒ No Are MCP Analytical Methods Required?

☐ Yes ☒ No Are CT RCP (Reasonable Confidence Protocols) Required?

Other Project Specific Requirements/Comments/Detection Limits:

Please also send results to kmorin@trccompanies.com

Dissolved Cr (FF) was field filtered

SAMPLE HANDLING
Filtration
☒ Done
☐ Not Needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Ammonia	Total Residual Chlorine	Total Suspended Solids	Cyanide	Chromium Speciation (total and dissolved)	Phthalates	TPH (not oil and grease)	Ethanol	Fuel Additives (MTBE, TAME, TBE)	1,4-dioxane	Salinity		Sample Specific Comments	TOTAL # BOTTLES
24683-01	RGP Boston Harbor	06/10	12:15	Outfall	APC	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐		
02	RGP Additional	06/10	13:10	Ground water	APC	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
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						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
						☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐		
					Container Type	-	-	-	-	-	-	-	-	-	-	-	-		
					Preservative	-	-	-	-	-	-	-	-	-	-	-	-		

PLEASE ANSWER QUESTIONS ABOVE!

IS YOUR PROJECT MA MCP or CT RCP?

Relinquished By:	Date/Time	Received By:	Date/Time
Ashley Pillsbury-Coyne	06/10 15:58	[signature] AAL	6/10/19 1558
[signature]	6/10/19 1817	[signature]	6/10/19 1817

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms.

FORM NO: 01-01(I) (rev. 5-JAN-12)

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1924683

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

Regulatory Requirements/Report Limits

State/Federal Program:

Regulatory Criteria:

Turnaround & Deliverables Information

Due Date: 06/13/19
Deliverables:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L1924683

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
	RGP ADDITIONAL	06-10-19 13:10	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	Chris Tebeau	6/11/19		
Form No: AL_subcoc				

eurofins | Environment Testing TestAmerica

ANALYTICAL REPORT

Eurofins TestAmerica, Nashville
2960 Foster Creighton Drive
Nashville, TN 37204
Tel: (615)726-0177

Laboratory Job ID: 490-175706-1
Client Project/Site: L1924683

For:
Alpha Analytical Inc
145 Flanders Road
Westborough, Massachusetts 01581-1019

Attn: Ashaley Kane

Authorized for release by:
6/18/2019 2:55:49 PM

Ken Hayes, Project Manager II
(615)301-5035
ken.hayes@testamericainc.com

Table of Contents

Sample Summary

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
490-175706-1	RGP ADDITIONAL	Water	06/10/19 13:10	06/12/19 08:55	

Case Narrative

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Job ID: 490-175706-1

Laboratory: Eurofins TestAmerica, Nashville

Narrative

Job Narrative
490-175706-1

Comments
No additional comments.

Receipt
The sample was received on 6/12/2019 8:55 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.0º C.

GC Semi VOA
Method 1671A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 490-602170.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Definitions/Glossary

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Client Sample ID: RGP ADDITIONAL

Lab Sample ID: 490-175706-1

Date Collected: 06/10/19 13:10

Matrix: Water

Date Received: 06/12/19 08:55

Method: 1671A - Ethanol (GC/FID)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			06/18/19 12:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*79*		*70 - 130*		*06/18/19 12:49*	*1*

QC Sample Results

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Method: 1671A - Ethanol (GC/FID)

Lab Sample ID: MB 490-602170/4
Matrix: Water
Analysis Batch: 602170

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		2000	500	ug/L			06/18/19 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Isopropyl acetate (Surr)	*88*		*70 - 130*		*06/18/19 12:31*	*1*

Lab Sample ID: LCS 490-602170/5
Matrix: Water
Analysis Batch: 602170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ethanol			40200	44520		ug/L		111	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Isopropyl acetate (Surr)	*89*		*70 - 130*

Lab Sample ID: LCSD 490-602170/6
Matrix: Water
Analysis Batch: 602170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethanol			40200	46030		ug/L		115	70 - 130	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Isopropyl acetate (Surr)	*89*		*70 - 130*

QC Association Summary

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

GC VOA

Analysis Batch: 602170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
490-175706-1	RGP ADDITIONAL	Total/NA	Water	1671A	
MB 490-602170/4	Method Blank	Total/NA	Water	1671A	
LCS 490-602170/5	Lab Control Sample	Total/NA	Water	1671A	
LCSD 490-602170/6	Lab Control Sample Dup	Total/NA	Water	1671A	

Lab Chronicle

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Client Sample ID: RGP ADDITIONAL

Date Collected: 06/10/19 13:10
Date Received: 06/12/19 08:55

Lab Sample ID: 490-175706-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1671A		1			602170	06/18/19 12:49	AAB	TAL NSH

Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Method Summary

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Method	Method Description	Protocol	Laboratory
1671A	Ethanol (GC/FID)	EPA	TAL NSH

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL NSH = Eurofins TestAmerica, Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

Accreditation/Certification Summary

Client: Alpha Analytical Inc
Project/Site: L1924683

Job ID: 490-175706-1

Laboratory: Eurofins TestAmerica, Nashville

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2938	06-30-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

Maine	State Program	1	TN00032	11-03-19

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
1671A		Water	Ethanol

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
Nashville, TN

COOLER RECEIPT FORM

490-175706 Chain of Custody

Cooler Received/Opened On 06-12-2019 08:55

Time Samples Removed From Cooler 12:08 Time Samples Placed In Storage 12:10 (2 Hour Window)

1. Tracking # 1Z E30654 0197 0544 42 (last 4 digits, FedEx) Courier: UPS NDA

IR Gun ID 31470368 pH Strip Lot N/A Chlorine Strip Lot N/A

2. Temperature of rep. sample or temp blank when opened: 5.0 *Degrees Celsius*

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: _____

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (intial) _____

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

Larger than this.

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (intial) _____

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (intial) _____

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (intial) _____

I certify that I attached a label with the unique LIMS number to each container (intial) _____

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

BIS = Broken in shipment
Cooler Receipt Form.doc

LF-1
End of Form

Revised 8/23/17

Subcontract Chain of Custody

Test America (Nashville)
2960 Foster Creighton Drive
Nashville, TN 37204

Alpha Job Number
L1924683

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: 06/13/19
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: L1924683

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
	RGP ADDITIONAL	06-10-19 13:10	WATER	Ethanol by EPA 1671 Revision A Loc: 490 175706	

Relinquished By:	Date/Time:	Received By:	Date/Time:
Chris Tebeau	6/11/19		6/12/19 8:55

Form No: AL_subcoc

ATTACHMENT E

DETAILS FOR FLOCCULANTS AND COAGULANTS

Applied Polymer Systems

519 Industrial Drive, Woodstock, GA 30189
www.siltstop.com
Phone: 678-494-5998
Toll-free: 866-200-9868
Fax: 678-494-5298

APS 700 Series Floc Logs®

Polyacrylamide Sediment and Turbidity Control Applicator Logs

APS 700 Series Floc Logs are a group of soil-specific tailored log-blocks that contain blends of water treatment components and polyacrylamide co-polymer for water clarification. They reduce and prevent fine particles and colloidal clays from suspension in stormwater. There are several types of Floc Logs designed to treat most water and soil types. Contact Applied Polymer Systems, Inc. or your local distributor for free testing and site-specific application information.

Primary Applications

- Mine tailings and waste pile ditches
- Stormwater drainage from construction and building sites
- Road and highway construction runoff ditches
- Ditch and treatment system placement for all forms of highly turbid waters (less than 4% solids)
- Dredging operations as a flocculent

Features and Benefits

- Removes solubilized soils and clay from water
- Prevents colloidal solutions in water within ditch systems
- Binds cationic metals within water, reducing solubilization
- Binds pesticides and fertilizers within runoff water
- Reduces operational and cleanup costs
- Reduces environmental risks and helps meet compliance

Specifications / Compliances

- ANSI/NSF Standard 60 Drinking water treatment chemical additives
- 48h or 96h Acute Toxicity Tests (*D. magna* or *O. mykiss*)
- 7 Day Chronic Toxicity Tests *(P. promealas* or *C. dubia*

Packaging

APS 700 Series Floc Logs are packaged in boxes of four (4)

Technical Information

Appearance - semi-solid block
Biodegradable internal coconut skeleton
Percent Moisture - 40% maximum
pH 0.5% Solution - 6-8
Shelf Life – up to 5 years when stored out of UV rays

Applied Polymer Systems

519 Industrial Drive, Woodstock, GA 30189
www.siltstop.com
Phone: 678-494-5998
Toll-free: 866-200-9868
Fax: 678-494-5298

Placement

Floc Logs are designed for placement within ditches averaging three feet wide by two feet deep. Floc log placement is based on gallon per minute flow rates. Note: actual GPM or dosage will vary based on site criteria and soil/water testing.

Directions for Use

(Water and Floc Log Mixing is Very Important!)

APS 700 Series Floc Logs should be placed within the upper quarter to half of a *stabilized* ditch system or as close as possible to active earth moving activities. Floc Logs have built in ropes with attachment loops which can be looped over stakes to ensure they remain where placed. Mixing is key! If the flow rate is too slow, adding sand bags, cinder blocks, etc., can create the turbulence required for proper mixing. Floc Logs are designed to treat dirty water, not liquid mud; when the water contains heavy solids (exceeding 4%), it will be necessary to create a sediment or grit pit to let the heavy solids settle before treating the water.

Floc Logs must not be placed in areas where heavy erosion would result in the Floc Logs becoming buried. Where there is heavy sedimentation, maintenance will be required.

APS 700 Series Floc Logs can easily be moved to different locations as site conditions change. Water quality will be improved with the addition of a dispersion field or soft armor covered ditch checks below the Floc Log(s) to collect flocculated particulate. Construction of mixing weirs may be required in areas where short ditch lines, swelling clays, heavy particle concentrations, or steep slopes may be encountered.

Cleanup:

Latex or rubber gloves are recommended for handling during usage. Use soap and water to wash hands after handling.

Precautions / Limitations

- APS 700 Series Floc Logs are extremely slippery when wet.
- Clean up spills quickly. Do not use water unless necessary as extremely slippery conditions will result and if water is necessary, use pressure washer.
- APS Floc Log will remain viable for up to 5 years when stored out of UV rays.
- APS 700 Series Floc Logs have been specifically tailored to specific water and soil types and samples must be tested. Testing is necessary and is free.
- For product information, treatment system design assistance, or performance issues, contact Applied Polymer Systems.

SAFETY DATA SHEET

Revision date 2015-03-12 **Revision number** 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name Redux E50

Other means of identification

Product code
Synonyms Water And Wastewater Treatment Coagulant/Flocculant

Recommended use of the chemical and restrictions on use

Recommended use [RU] No information available
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Redux Technology, Division of Azure Water Services, LLC.
280 Callegari Drive
West Haven, CT 06516
203-933-9071
Hours: Monday-Friday 9:00-5:00 EST

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: (800) 424-9300
Outside USA - +1 (703) 527-3887 collect calls accepted

Contact Point info@reduxtech.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Corrosive to metals	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Physical state	Color	Appearance	Odor
liquid	colorless to yellow	clear	no appreciable odor

WARNING

Hazard statements
Causes skin irritation
Causes serious eye irritation
May be corrosive to metals

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store in corrosive resistant container with a resistant inner liner

Other information
• May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	weight-%	TRADE SECRET
Trade Secret Ingredient	PROPRIETARY	45 - 55%	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures

Eye contact
Immediately flush with plenty of water for at least 20 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek immediate medical attention.

Skin contact
Immediately wash thoroughly with soap and water, remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation should develop.

Ingestion
Seek medical attention immediately. Give large amounts of water to drink. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

Inhalation
Remove to fresh air.

Most important symptoms and effects, both acute and delayed

Acute effects
Possible eye, skin and respiratory tract irritation.

Chronic effects
May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media
Water Spray, Carbon Dioxide, Foam, Dry Chemical.

Extinguishing media which must not be used for safety reasons
No information available

Special hazards arising from the substance or mixture

Special Hazard
May produce hazardous fumes or hazardous decomposition products.

Advice for firefighters

Firefighting measures
Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

Special protective equipment for firefighters
Not determined

Explosion data

Sensitivity to Mechanical Impact
None.

Sensitivity to Static Discharge
None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear suitable protective clothing and gloves.

Environmental precautions

Environmental precautions
Do not permit run-off to get into sewers or surface waterways.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.

Methods for cleaning up
Clear spills immediately. Contain large spill and remove using a vacuum truck. Soak up small spills with inert absorbent material and place in a labeled waste container for disposal. Ventilate area of leak or spill. Spills of solution are extremely slippery so all residue must be removed promptly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Keep container closed when not in use
Keep away from heat and open flame.
Avoid contact with eyes, skin and clothing
Wash thoroughly after handling
Wear chemical splash goggles, gloves, and protective clothing when handling.
Avoid breathing vapor or mist
Use with adequate ventilation and employ respiratory protection where mist or spray may be generated.
FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Do not store in unlined metal containers.
Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel.
Store in a cool, dry place away from direct heat.
Keep in tightly closed container.

Incompatible products
Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls
Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment

Eye/face Protection
Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection
Appropriate chemical resistant gloves should be worn.

Skin and body protection
Standard work clothing and work shoes.

Respiratory protection
If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134.

Other personal protection data
Eyewash fountains and safety showers must be easily accessible.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Color	colorless to yellow
Appearance	clear
Odor	no appreciable odor
Odor threshold	No information available

Property	Values	Remarks / Method
pH	3.5	as is
Melting / freezing point	-7 °C / 19 °F	No information available
Boiling point / boiling range	No information available	No information available
Flash point	Not applicable	No information available
Evaporation rate	No information available	No information available
Flammability (solid, gas)	Not applicable	No information available
Flammability Limit in Air		
Upper flammability limit	Not applicable	No information available
Lower flammability limit	Not applicable	No information available
Vapor pressure	No information available	No information available
Vapor density	No information available	No information available
Specific gravity	1.33 - 1.35	No information available
Solubility (water)	Soluble	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available

Autoignition temperature	Not applicable	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	< 100 cps @ 20 °C	No information available

Other information

Density	11.0 - 11.3 lb/gal
Bulk Density	No information available
Explosive properties	No information available.
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
Volatile organic compounds (VOCs) content	No information available
Percent Volatile, wt.%	40 - 50%

10. STABILITY AND REACTIVITY

Reactivity

Reactivity
No data available.

Chemical stability

Chemical stability
Stable.

Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
No.

Conditions to avoid

Conditions to avoid
None

Incompatible materials

Materials to avoid
Oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products
Thermal decomposition may release toxic and/or hazardous gases such as Cl_2 and HCl.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
May cause moderate eye irritation that can become severe with prolonged contact. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact
May be harmful in contact with skin. Prolonged and/or repeated contact may cause skin irritation.

Ingestion
May cause irritation of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation
Inhalation of mist or vapor may cause respiratory tract irritation.

Acute toxicity - Product Information

Oral LD50	No information available
Dermal LD50	No information available
Inhalation LC50	No information available

Acute toxicity - Component Information

Component	weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Trade Secret Ingredient	45 - 55%	= 9187 mg/kg (Rat)	> 2000 mg/kg (Rat)	--

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Irritating to skin

Serious eye damage/eye irritation
Causes serious eye irritation

Sensitization
No information available

Germ cell mutagenicity
No information available

Carcinogenicity
This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.

Reproductive toxicity
No information available

Specific target organ toxicity - Single exposure
No information available.

Specific target organ toxicity - Repeated exposure
No information available

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	18374 mg/kg
ATEmix (dermal)	4004 mg/kg

Other information
Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Acute aquatic toxicity - Product Information

Fish	LC 50 (96 hour, static) 776.4 mg/L *Pimephales promelas* (Fathead Minnow) [1] EC 50 (96 hour, static) 265.5 mg/L *Pimephales promelas* (Fathead Minnow) [1]
Crustacea	LC 50 (48 hour, static) 803.8 mg/L *Ceriodaphnia dubia* (Water Flea) [1] EC 50 (48 hour, static) 33.2 mg/L *Ceriodaphnia dubia* (Water Flea) [1]
Algae/aquatic plants	No information available

Acute aquatic toxicity - Component Information

Component	weight-%	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
Trade Secret Ingredient	45 - 55%	--	LC50 (96 h static) 100 - 500 mg/L (Brachydanio rerio)	--

Persistence and degradability

Persistence and degradability
No information available

Bioaccumulative potential

Bioaccumulative potential
No information available.

Mobility

Mobility
No information available

Results of PBT and vPvB assessment

PBT and vPvB assessment
No information available

Other adverse effects

Other information
[1] Generated from tests conducted by ECT-Superior Laboratories May 2010

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Do NOT mix with other chemical wastes. Do not put solutions containing this product into sewer systems. Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations. Do not re-use empty containers.

Contaminated packaging
Since empty containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT

NOT REGULATED FOR TRANSPORTATION
This product is excepted from DOT regulations under 49 CFR 173.154(d) when shipped by road or railway. The product exception is referenced in 49 CFR 172.101 Table. Packaging material must not be aluminum, steel or be degraded by this product

ICAO/IATA Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
Hazard class	8
Packing group	III
ERG Code	8L

IMDG Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
Hazard class	8
Packing group	III
EmS	F-A, S-B

Harmonized Tariff Number 2827.32

15. REGULATORY INFORMATION

International Inventories

TSCA (United States)
All ingredients are on the inventory or exempt from listing

Australia (AICS)
All ingredients are on the inventory or exempt from listing

Canada (DSL)
All ingredients are on the inventory or exempt from listing

Canada (NDSL)
None of the ingredients are on the inventory.

China (IECSC)
All ingredients are on the inventory or exempt from listing

EINECS (European Inventory of Existing Chemical Substances)
All ingredients are on the inventory or exempt from listing

ELINCS (European List of Notified Chemical Substances)
None of the ingredients are on the inventory.

ENCS (Japan)
All ingredients are on the inventory or exempt from listing

South Korea (KECL)
All ingredients are on the inventory or exempt from listing

Philippines (PICCS)
All ingredients are on the inventory or exempt from listing

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - China Inventory of Existing Chemical Substances
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

U.S. State Regulations

California Proposition 65
This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

16. OTHER INFORMATION

NFPA Rating	Health - 1	Flammability - 0	Instability - 0	Special Hazard -
HMIS Rating	Health - 1	Flammability - 0	Physical hazard - 0	Personal protection - B

Product code

Revision date 2015-03-12

Revision number 1

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 Safety Data Sheet

ATTACHMENT F

LETTER FROM US FISH & WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2019-SLI-1410
Event Code: 05E1NE00-2019-E-03349
Project Name: Ropewalk Outfall

April 15, 2019

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2019-SLI-1410

Event Code: 05E1NE00-2019-E-03349

Project Name: Ropewalk Outfall

Project Type: ** OTHER **

Project Description: Dewatering with subsequent discharge to existing outfall

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.372730460096136N71.05182127516207W

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.

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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.

ATTACHMENT G

MASSACHUSETTS CULTURAL RESOURCES DATABASE SEARCH RESULTS

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Charlestown East; Street No: 1st; Resource Type(s): Area, Object, Structure, Building, Burial Ground;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Charlestown; Street No: 4th; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Charlestown East; Street No: 4th; Resource Type(s): Area, Building, Burial Ground, Object, Structure; Name: Ropewalk;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Charlestown; Street Name: 13th; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Place: Charlestown; Street No: 1st; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year