89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

July 25, 2019

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square, Suite 100 (OEP06-4)
Boston, Massachusetts 02109-3912

Reference: **Notice of Intent (NOI) - Remediation General Permit (RGP)**
Boston Arts Academy
174 Ipswich Street
Boston, Massachusetts

Dear Sir/Madam:

On behalf of Lee Kennedy Company (Lee Kennedy), Lockwood Remediation Technologies, LLC (LRT) has prepared this Notice of Intent (NOI) requesting a determination of coverage under the United States Environmental Protection Agency's (EPA's) Remediation General Permit (RGP), pursuant EPA's National Pollutant Discharge Elimination System (NPDES) program. This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by EPA. The completed NOI Form is provided in **Appendix A**.

Site Information

This NOI has been prepared for the management of water that will be generated during dewatering activities associated with the demolition and reconstruction of the Boston Arts Academy located at 174 Ipswich Street in Boston, Massachusetts (the Site). This work will take place over the entire footprint of the existing building which is approximately 0.9 acres and is anticipated to be completed within twelve months. A Site Locus is provided as **Figure 1** and a Site Plan satisfying the requirements of RGP Appendix IV Part I.B and I.D is provided as **Figure 2**.

Work Summary

The project includes the demolition of the approximately 40,000 square foot Boston Arts Academy and construction of a new building in its footprint. To complete portions of the excavations in the dry, dewatering is required to lower the groundwater table as the work is being performed. To do this, filtered sumps will be placed in low spots within the excavation. The water generated during dewatering (Source water) will be pumped to a treatment system prior to discharge to a storm drain with a final outfall in the Charles River. To characterize groundwater from the proposed excavation area, Lee Kennedy collected representative groundwater samples from a test pits on site on April 24, July 2 and July 18, 2019. A

sample of the receiving water (The Charles river) was collected July 17, 2019. The samples were analyzed for various parameters in accordance with the NPDES RGP Activity Category III-G.

Discharge and Receiving Surface Water Information

A summary of the analytical results is provided in **Tables 1 and 2** included within **Appendix A**, and copies of the laboratory data reports are provided in **Appendix B**. Concentrations of Acetone and one Halogenated volatile organic compound (VOC) (1,2 Dichloroethane) were detected in groundwater at concentrations above the respective NPDES RGP Effluent Limitations. To meet these standards, Source water will undergo treatment that includes bag filtration, carbon filtration and prior to discharge. Details of the water treatment system are provided below.

Water Treatment System

A water treatment system schematic is provided as **Figure 3**. Cutsheets of the system components, product information and Safety Data Sheets (SDS) are included in **Appendix C**.

Source water will be pumped to a treatment system with a design flow of up to 100 gallons per minute (gpm); the average effluent flow of the system is estimated to be 75 gpm, and the maximum flow will not exceed 100 gpm. Source water will enter one 18,000-gallon weir tank at the head of the system from the weir tank, the water will be pumped to a triple-bag filter skid (with three single bag filters), followed by two carbon vessels plumbed in series. Each carbon vessel will contain 2,000 pounds of reactivated liquid-phase carbon. Discharge from the carbon vessel will pass through a flow/totalizer meter prior to discharge into a storm drain with an outfall in the Charles River. The discharge will be at one location (Discharge Location 2) as depicted on **Figure 2**. Effluent sampling will correspond with this discharge location.

Consultation with Federal Services

LRT reviewed online electronic data viewers and databases from the Massachusetts Geographical Information System (MassGIS), the Massachusetts Division of Fisheries and Wildlife (MassWildlife; Natural Heritage and Endangered Species Program), and the U.S. National Parks Service Natural Historic Places (NPS). Based on this review, the Site and the point where the proposed discharge reaches the receiving surface water body are not located within an Area of Critical Environmental Concern (ACEC). The Site and the proposed discharge point are not located within Habitats of Rare Wetland Wildlife, Habitats of Rare Species, Estimated Habitats of Rare Wildlife, or listed as a National Historic Place. Documentation is included in **Appendix D**.

Coverage under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP. On behalf of Lee Kennedy, we are requesting coverage under the NPDES RGP for the discharge of treated wastewater to the Charles River in support of construction dewatering activities that are to take place at the Boston Arts Academy.

The enclosed NOI form provides required information on the general site conditions, discharge, treatment system, receiving water, and consultation with federal services. For this project, Lee Kennedy is considered the Operator and has operational control over the construction plans and specifications, including the ability to make modifications to those plans and specifications.

Please feel free to contact us at 774-450-7177 if you have any questions or if you require additional information.

Sincerely,
Lockwood Remediation Technologies, LLC

Jacob Jennings

Jacob Jennings
Staff Scientist

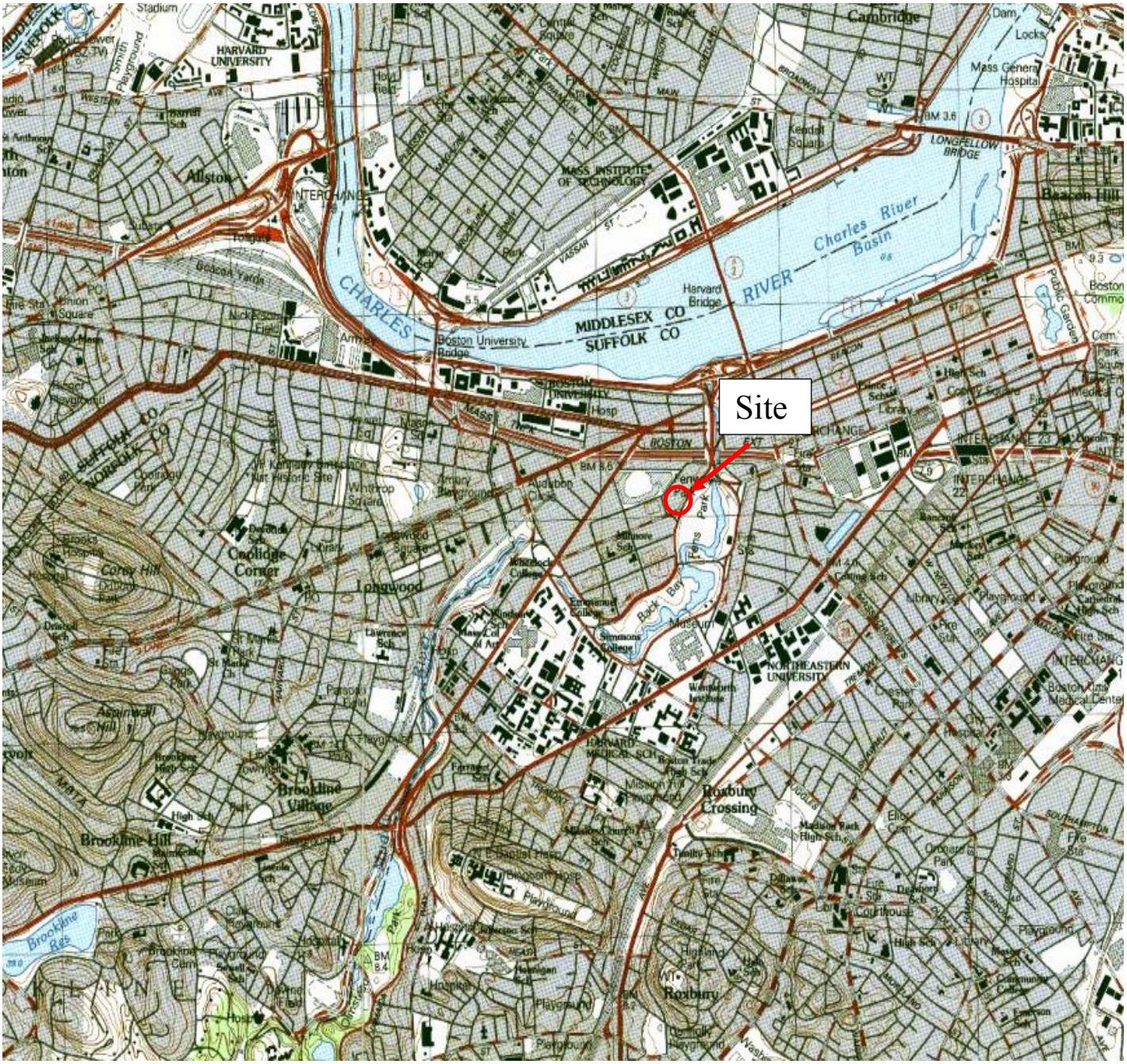
Kim Gravelle

Kim Gravelle, P.G.
Senior Project Manager

Encl: Figure 1 - Locus Plan
Figure 2 - Site Plan
Figure 3 - Water Treatment System Schematic
Appendix A - NOI Form
Appendix B - Laboratory Data
Appendix C - Water Treatment System
Appendix D - Supplemental Information

cc: Mr. Darren Moore – Lee Kennedy Co., Inc.
Mr. James McQueen – City of Boston
Matthew Tuttle - BWSC
Cathy Vakalopoulos - MassDEP

Figures



Source: MassGIS Oliver

Notes

1. Figure is not to scale.

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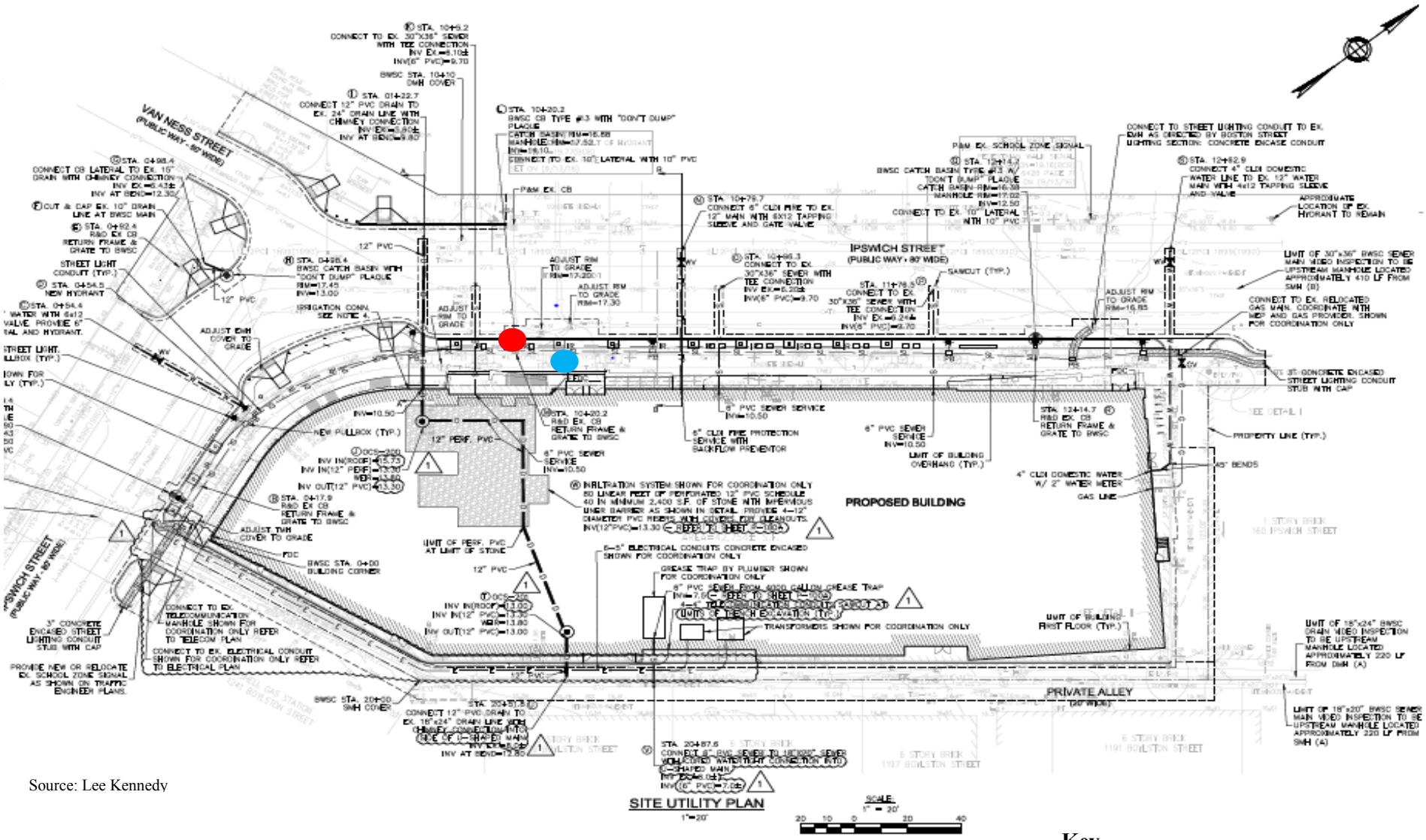
Figure 1 – Locus Plan
174 Ipswich Street
Boston, MA



Source: Lee Kennedy

Notes

1. Figure is not to scale

Key

- Discharge location
- Water Treatment System location

LRT Lockwood Remediation Technologies LLC

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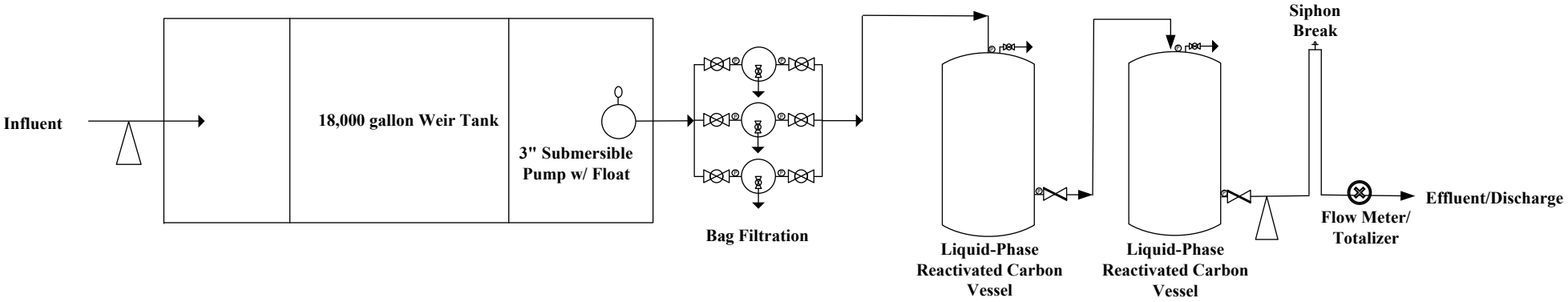
Figure 2 – Site plan
174 Ipswich Street
Boston, MA



Notes:

1.) Figure is not to scale
2.) System rated for 100 GPM

Key:
Piping/Hose
Sample Port
Ball Valve
Butterfly Valve
Pressure Gauge

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
Office: 774-450-7177

DESIGNED BY: LRT **DRAWN BY:** JHJ

CHECKED BY: **DATE:**

Figure 3 - Water Treatment System Schematic

Boston Arts Academy
174 Ipswich Street
Boston, MA

PROJECT No.

FIGURE No. 3

Appendix A:
NOI Form

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Boston Art Academy</td><td colspan="3">Site address: 174 Ipswich Street
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02215</td></tr>
<tr><td rowspan="4">2. Site owner
City of Boston

Owner is (check one): ☐ Federal ■ State/Tribal ☐ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: James McQueen</td></tr>
<tr><td colspan="2">Telephone: 617-635-0536</td><td>Email: james.mcqueen@boston.gov</td></tr>
<tr><td colspan="3">Mailing address: 26 Court Street, 10th Floor, Boston, MA 02108
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip: 02108</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Lee Kennedy Co., Inc.</td><td colspan="3">Contact Person: Darren Moore</td></tr>
<tr><td colspan="2">Telephone: 617-212-8988</td><td>Email: dmoore@leekennedy.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 122 Quincy Shire Drive</td></tr>
<tr><td>City: Quincy</td><td>State: MA</td><td>Zip: 02171</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):
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Charles River	MA72-38	Class B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. Chlorophyll-a, combined biota / habitat bioassessments, DDT, Dissolved oxygen saturation, escherichia coli, excess algal growth, eutrophication, Oil

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.	29.2
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.	132

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: 7/24/19

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: VOCs	
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): Ipswich Street	Outfall location(s): (Latitude, Longitude) Latitude: (Y) 42.351102, Longitude: (X) -71.097636
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Into storm sewer then into Charles river ☐ 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 concurrently 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): 8/2019 to 8/2020 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia	✔							Report mg/L	---
Chloride	✔							Report µg/l	---
Total Residual Chlorine	✔							0.2 mg/L	
Total Suspended Solids		✔	1	2540D	5.5	<5.5	<5.5	30 mg/L	---
Antimony	✔		1	19,200.7	50	<50	<50	206 µg/L	
Arsenic	✔		1	19,200.7	5	<5	<5	104 µg/L	
Cadmium		✔	1	19,200.7	5	<5	<5	10.2 µg/L	
Chromium III	✔		1	19,200.7	10	<10	<10	323 µg/L	
Chromium VI	✔							323 µg/L	
Copper		✔	1	19,200.7	10	<10	<10	242 µg/L	
Iron	✔		1	19,200.7	50	<50	<50	5,000 µg/L	
Lead		✔	1	19,200.7	10	<10	<10	160 µg/L	
Mercury	✔		1	3,245.1	0.20	<0.20	<0.20	0.739 µg/L	
Nickel	✔		1	19,200.7	25	<25	<25	1,450 µg/L	
Selenium		✔	1	19,200.7	10	<10	<10	235.8 µg/L	
Silver		✔	1	19,200.7	7	<7	<7	35.1 µg/L	
Zinc	✔		1	19,200.7	50	<50	<50	420 µg/L	
Cyanide	✔		1	121,4500C	5	<5	<5	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	97, 8260C	20	<20	<20	100 µg/L	---
Benzene		✔	1	97,8260C	2.0	5.0	5.0	5.0 µg/L	---
1,4 Dioxane	✔		1	97,8260C	1000	<1000	<1000	200 µg/L	---
Acetone		✔	1	97,8260C	0.02	0.079	0.079	7.97 mg/L	---
Phenol	✔		1	129,625.1	18	<18	<18	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	97,8260C	4.0	<4.0	<4.0	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	97,8260C	4.0	<4.0	<4.0	600 µg/L	---
1,3 Dichlorobenzene	✔		1	97,8260C	4.0	<4.0	<4.0	320 µg/L	---
1,4 Dichlorobenzene	✔		1	97,8260C	4.0	<4.0	<4.0	5.0 µg/L	---
Total dichlorobenzene	✔		1	97, 8260C	4.0	<4.0	<4.0	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	97,8260C	4.0	<4.0	<4.0	70 µg/L	---
1,2 Dichloroethane		✔	1	97,8260C	4.0	4.1	4.1	5.0 µg/L	---
1,1 Dichloroethylene		✔	1	97, 8260C	4.0	<4.0	<4.0	3.2 µg/L	---
Ethylene Dibromide		✔	1	97, 8260C	8.0	<8.0	<8.0	0.05 µg/L	---
Methylene Chloride		✔	1	97,8260C	8.0	<8.0	<8.0	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	97, 8260C	4.0	<4.0	<4.0	200 µg/L	---
1,1,2 Trichloroethane	✔		1	97,8260C	4.0	<4.0	<4.0	5.0 µg/L	---
Trichloroethylene	✔		1	97, 8260C	4.0	<4.0	<4.0	5.0 µg/L	---
Tetrachloroethylene		✔	1	97, 8260C	4.0	<4.0	<4.0	5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	128,624.1	1.0	<1.0	<1.0	70 µg/L	---
Vinyl Chloride		✔	1	97,8260C	4.0	<4.0	<4.0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1	18	<18	<18	190 µg/L	
Diethylhexyl phthalate	✔		1	625.1	18	<18	<18	101 µg/L	
Total Group I PAHs		✔	1	625.1	7.3	<7.3	<7.3	1.0 µg/L	---
Benzo(a)anthracene		✔	1	129,625.1	7.3	<7.3	<7.3	As Total PAHs	
Benzo(a)pyrene		✔	1	129,625.1	7.3	<7.3	<7.3		
Benzo(b)fluoranthene		✔	1	129,625.1	7.3	<7.3	<7.3		
Benzo(k)fluoranthene		✔	1	129,625.1	7.3	<7.3	<7.3		
Chrysene		✔	1	129,625.1	7.3	<7.3	<7.3		
Dibenzo(a,h)anthracene		✔	1	129,625.1	7.3	<7.3	<7.3		
Indeno(1,2,3-cd)pyrene		✔	1	129,625.1	7.3	<7.3	<7.3		

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	129,625.1	7.3	<7.3	<7.3	100 µg/L	---
Naphthalene	✔		1	129,625.1	7.3	<7.3	<7.3	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	EPA3665	0.250	<0.250	<0.250	0.000064 µg/L	---
Pentachlorophenol	✔		1	EPA3665	0.250	<0.250	<0.250	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	3510C	200	<200	<200	5.0 mg/L	---
Ethanol	✔							Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	97, 8260C	8.0	<8.0	<8.0	70 µg/L	
tert-Butyl Alcohol	✔		1	97, 8260C	8.0	<8.0	<8.0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	97, 82	8.0	<8.0	<8.0	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:									
Hardness		✔	1	200.7	660	124000	124000		

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.

Water from construction dewatering activities will be pumped to a weir tank for primary settling. From the weir tank water will be pumped through a triple bag filter skid with 5 micron bag filtration. From the bag filters water will be pumped through two 2000 lbs GAC media vessels plumed in series. Prior to discharge, treated water will be monitored with a flow meter/ totalizer.

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: Liquid GAC Media Vessels 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.	75
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.

See attached

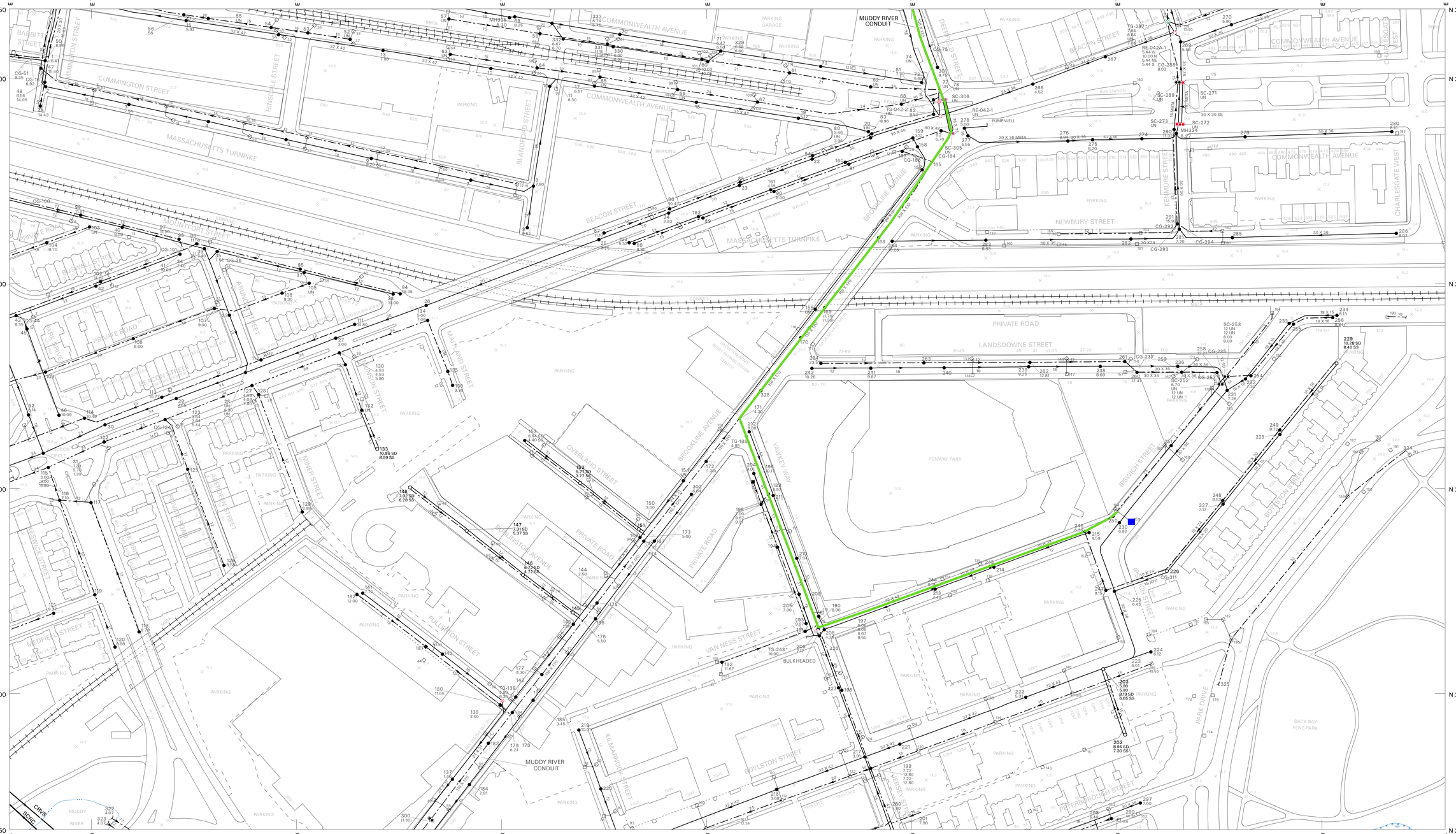
Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

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 will be developed and maintained that meets the requirements of this permit. The BMPP will be implemented on-site prior to 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: D. G. Moore	Date: 7/26/2019
Print Name and Title: DARREN G. MOORE, SUPERINTENDENT	



NOTE: Spot Elevations shown are plotted in Boston City Base

500 FOOT GRID BASED ON MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, NAD 83

DATE OF PHOTOGRAPHY - MARCH 30, APRIL 1 & 17, 1995
VERTICAL DATUM BASED ON THE BOSTON CITY BASE

THE LANDBASE ON THIS MAP WAS COMPILED TO MEET THE ASPRS STANDARD FOR CLASS 1 MAP ACCURACY

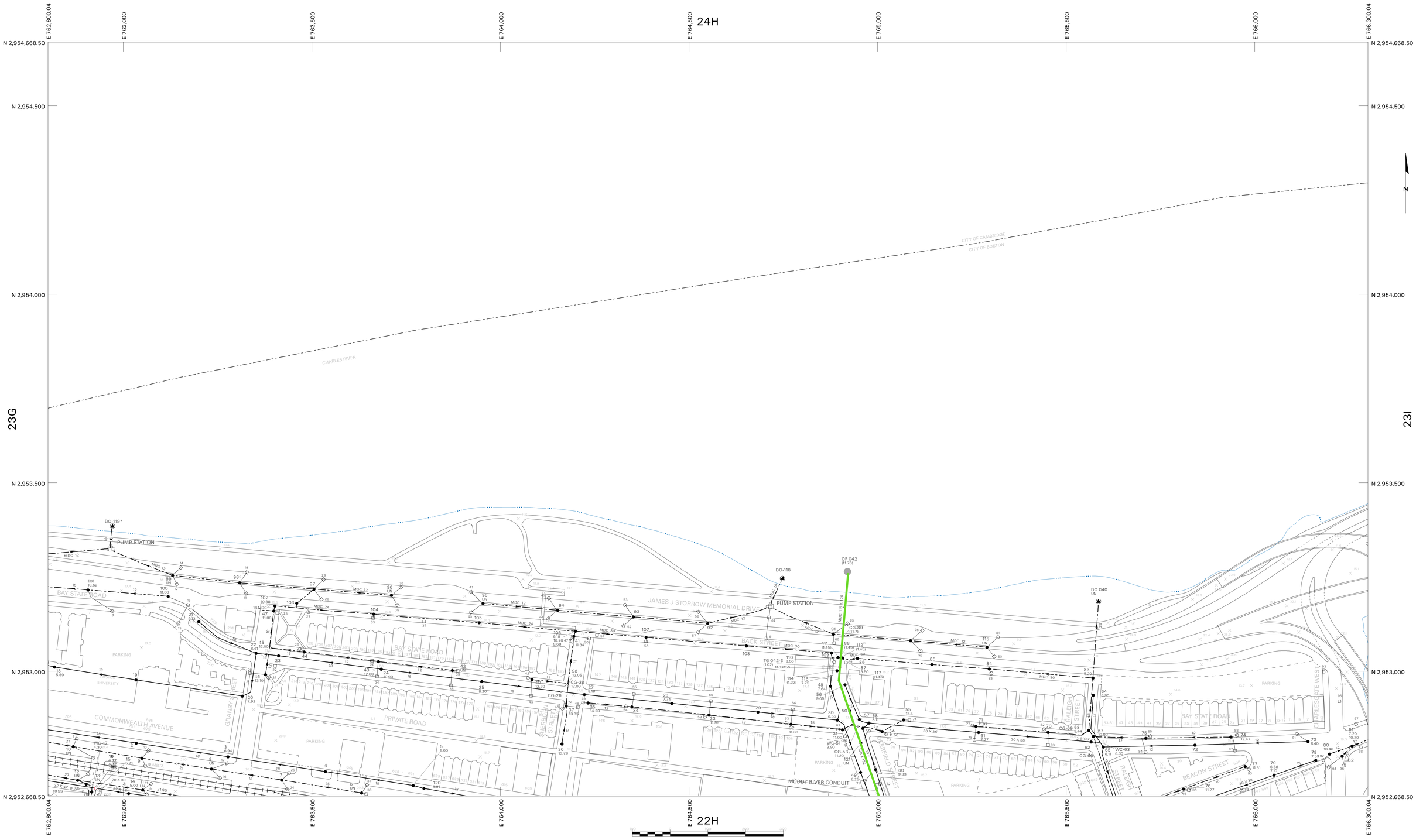
Date Produced
December 29, 1999

BOSTON WATER AND SEWER COMMISSION

SEWER SYSTEM MAP

FENWAY/KENMORE
BACK BAY/BEACON HILL

SHEET NO.
22H



NOTE: Spot Elevations shown are plotted in Boston City Base

500 FOOT GRID BASED ON MASSACHUSETTS
STATE PLANE COORDINATE SYSTEM, NAD 83

DATE OF PHOTOGRAPHY - MARCH 30, APRIL 1 & 17, 1995
VERTICAL DATUM BASED ON THE BOSTON CITY BASE

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STANDARD FOR CLASS 1 MAP ACCURACY

Date Produced
December 29, 1999

BOSTON WATER AND SEWER COMMISSION

SEWER SYSTEM MAP

FENWAY/KENMORE
BACK BAY/BEACON HILL

SHEET NO.
23H

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

132

Enter values in the units specified

↓

124	C_d = Enter influent hardness in **mg/L** $CaCO_3$
77.3	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

--	pH in **Standard Units**
--	Temperature in **^oC**
0	Ammonia in **mg/L**
77.3	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
445	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

↓

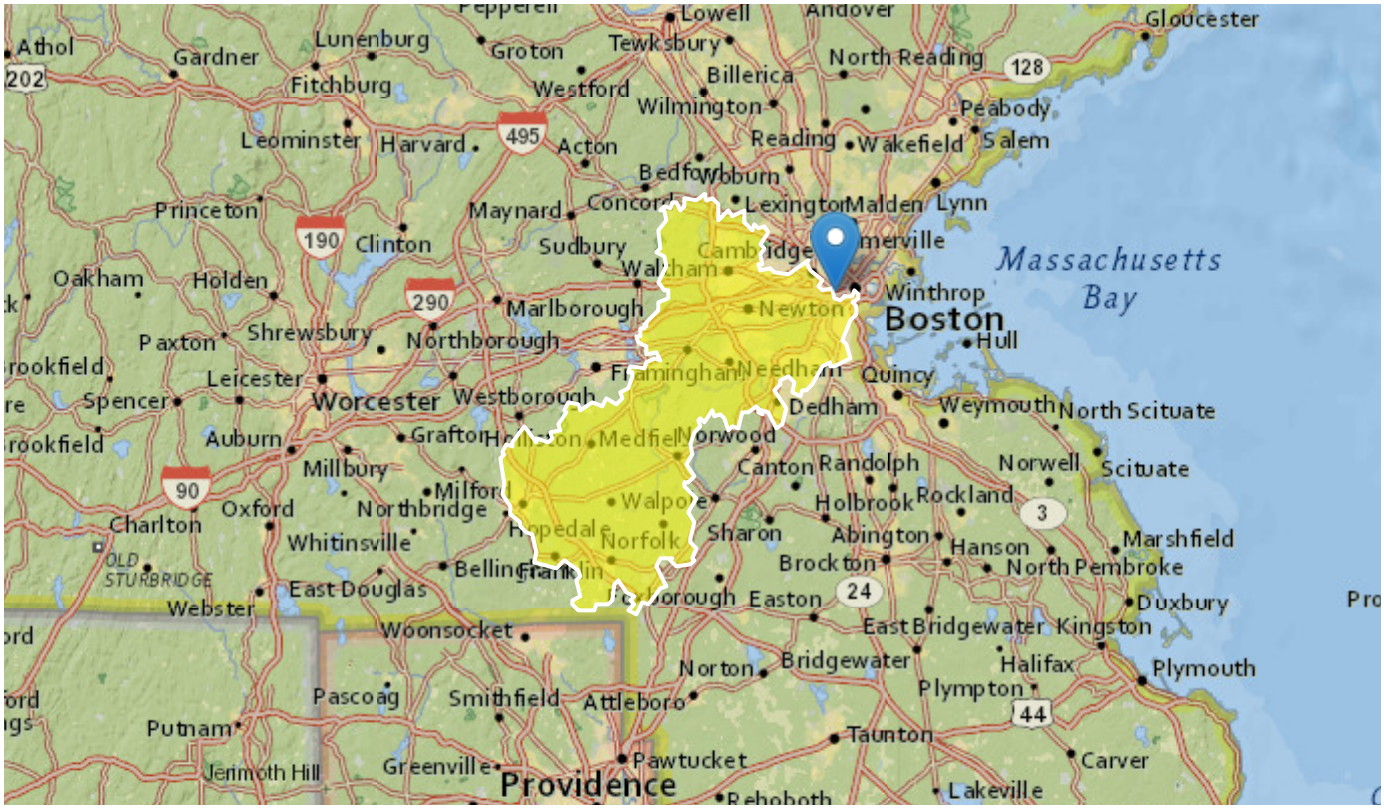
0	TRC in **µg/L**
0	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0	Copper in **µg/L**
0	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
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**

Dilution Factor	203.8			
	TBEL applies if bolded		WQBEL applies if bolded	
A. Inorganics				
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	**0.2**	mg/L	2242	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	130418	µg/L
Arsenic	**104**	µg/L	2038	µg/L
Cadmium	**10.2**	µg/L	45.6695	µg/L
Chromium III	**323**	µg/L	14257.2	µg/L
Chromium VI	**323**	µg/L	2330.1	µg/L
Copper	**242**	µg/L	1529.5	µg/L
Iron	**5000**	µg/L	113542	µg/L
Lead	**160**	µg/L	468.91	µg/L
Mercury	**0.739**	µg/L	184.60	µg/L
Nickel	**1450**	µg/L	8570.5	µg/L
Selenium	**235.8**	µg/L	1018.9	µg/L
Silver	**35.1**	µg/L	497.8	µg/L
Zinc	**420**	µg/L	19679.6	µg/L
Cyanide	**178**	mg/L	1059.6	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	61133	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	326.0	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	672.5	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	448.3	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.7744	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.7744	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.7744	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.7744	µg/L
Chrysene	**1.0**	µg/L	0.7744	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.7744	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.7744	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---	
Naphthalene	**20**	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	**70**	µg/L	4076	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

StreamStats Report

Region ID: MA
Workspace ID: MA20190723193836250000
Clicked Point (Latitude, Longitude): 42.35525, -71.09021
Time: 2019-07-23 15:38:57 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	307	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.341	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.25	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	307	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.341	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.25	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	57.3	ft^3/s
7 Day 10 Year Low Flow	29.2	ft^3/s

Low-Flow Statistics Citations

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

USGS Product Names Disclaimer: Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

Application Version: 4.3.8

DILUTION CALCULATIONS
Boston Arts Academy
Boston, MA

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

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

ASSUMPTIONS FOR 200 GPM SYSTEM

7Q10 is 24.2 cubic feet per second (cfs) - from StreamStats 4.0
A conversion of 7.48 is used to convert cubic feet to gallons
A design flow rate of 100 gallons per minute (gpm) is assumed

CALCULATIONS

7q10 Low Flow Value (Q_S)

$$Q_S = \frac{29.2\ ft^3}{sec} \times \frac{7.48\ gallons}{ft^3} \times \frac{86{,}400\ sec}{day} \times \frac{1\ MG}{1{,}000{,}000\ gallons} = 18.87\ MGD$$

Discharge Flow Rate (Q_D)

$$Q_D = \frac{100\ gallons}{min} \times \frac{1{,}440\ min}{day} \times \frac{1MG}{1{,}000{,}000\ gallons} = 0.144\ MGD$$

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{Q_D} = \frac{18.87\ MGD + 0.144\ MDG}{0.144\ MGD} = 132$$

From: Vakalopoulos, Catherine (DEP)
To: Jake Jennings
Cc: Kim Gravelle
Subject: RE: Dilution factor Boston Arts academy
Date: Wednesday, July 24, 2019 5:13:26 PM

Hi Jake,
I think based on the address 174 Ipswich St., Boston that you will be discharging from CSO MWRA023 close to the mouth of the Muddy River. If so, then your lat/long is a little further downstream than it should be. Regardless, the 7Q10 is the same at both locations (29.2 cfs). With a design flow (i.e. maximum flow through the treatment system) of 100 gpm and a 7Q10 of 29.2 cfs, I get a dilution factor of 132. I think the difference is due to a typo in your spreadsheet (29.7 cfs).

To assist you with the NOI, this segment of the Charles River is identified as MA72-38 is classified as Class B. There are two approved TMDLs for this segment (phosphorus and pathogens) and this is not an Outstanding Resource Water. To see the causes of impairments, go to: https://www.mass.gov/files/documents/2016/08/sa/14list2_0.pdf and search for "MA72-38".

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

Please let me know if you have any further questions.

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026
Please consider the environment before printing this e-mail

From: Jake Jennings [mailto:JJennings@lrt-llc.net]
Sent: Tuesday, July 23, 2019 4:41 PM
To: Vakalopoulos, Catherine (DEP)
Cc: Kim Gravelle
Subject: Dilution factor Boston Arts academy

Hi Cathy,

As required in Appendix V, I have attached the StreamStats Report along with our dilution calcs for your review/confirmation.

The project location –

174 Ipswich Street
Boston Arts Academy
Boston, MA

The 7 Day 10 Year Low Flow value from the StreatStats report is 29.7 cfs and the calculated dilution factor is 134.26.

Can you confirm that these values are appropriate?

Thank you,

Jake Jennings

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
O: 774.450.7177
F: 888.835.0617
M: 508.930.9812
jjennings@lrt-llc.net

Appendix B
Lab Data

ANALYTICAL REPORT

Lab Number:	L1916766
Client:	Axiom Partners, Inc. One Pleasure Island Road, Suite 2C Wakefield, MA 01880
ATTN:	James Matz
Phone:	(781) 213-9198
Project Name:	LEE KENNEDY
Project Number:	Not Specified
Report Date:	04/25/19

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: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1916766-01	042319-22-01	WATER	BOSTON	04/23/19 00:00	04/23/19
L1916766-02	042319-22-02	WATER	BOSTON	04/23/19 00:00	04/23/19
L1916766-03	042319-22-03	WATER	BOSTON	04/23/19 00:00	04/23/19
L1916766-04	042319-22-04	WATER	BOSTON	04/23/19 00:00	04/23/19

Project Name: LEE KENNEDY **Lab Number:** L1916766

Project Number: Not Specified **Report Date:** 04/25/19

MADEP MCP Response Action Analytical Report Certification

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

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

A response to questions G, H and I is required for "Presumptive Certainty" status		
G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	NO
H	Were all QC performance standards specified in the CAM protocol(s) achieved?	NO
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	NO

For any questions answered "No", please refer to the case narrative section on the following page(s).

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

Project Name:	LEE KENNEDY	**Lab Number:**	L1916766
Project Number:	Not Specified	**Report Date:**	04/25/19

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: LEE KENNEDY **Lab Number:** L1916766
Project Number: Not Specified **Report Date:** 04/25/19

Case Narrative (continued)

Report Submission

April 25, 2019: This final report includes the results of all requested analyses.

April 24, 2019: This is a preliminary report.

MCP Related Narratives

Sample Receipt

The analyses performed were specified by the client.

In reference to question H:

A Matrix Spike was not submitted for the analysis of Total Metals.

Sample Receipt

In reference to question A:

L1916766-01: The sample was received in an inappropriate container for the Volatile Organics and VPH analyses. An aliquot was taken from an unpreserved container and preserved appropriately.

L1916766-01: The sample was received in an inappropriate container for the EPH analysis.

Volatile Organics

L1916766-01: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

In reference to question A:

L1916766-01: Headspace was noted in the sample container utilized for analysis. The analysis was performed at the client's request.

In reference to question G:

L1916766-01: One or more of the target analytes did not achieve the requested CAM reporting limits.

In reference to question H:

The initial calibration, associated with L1916766-01, did not meet the method required minimum response factor on the lowest calibration standard for 1,4-dioxane (0.0021), as well as the average response factor for

Project Name: LEE KENNEDY **Lab Number:** L1916766
Project Number: Not Specified **Report Date:** 04/25/19

Case Narrative (continued)

1,4-dioxane.

The continuing calibration standard, associated with L1916766-01, is outside the acceptance criteria for several compounds; however, it is within overall method allowances. A copy of the continuing calibration standard is included as an addendum to this report.

VPH

In reference to question A:

L1916766-01: Headspace was noted in the sample container utilized for analysis. The analysis was performed at the client's request.

In reference to question G:

L1916766-01: One or more of the target analytes did not achieve the requested CAM

EPH

In reference to question I:

L1916766-01: All samples were analyzed for a subset of MCP analytes per client request.

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

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 04/25/19

QC OUTLIER SUMMARY REPORT

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
MCP Volatile Organics - Westborough Lab								
8260C	Batch QC	WG1229717-3	Dichlorodifluoromethane	LCS	62	70-130	01	potential low bias
8260C	Batch QC	WG1229717-3	Acetone	LCS	140	70-130	01	potential high bias
8260C	Batch QC	WG1229717-3	Methyl ethyl ketone	LCS	140	70-130	01	potential high bias
8260C	Batch QC	WG1229717-3	Diisopropyl Ether	LCS	140	70-130	01	potential high bias
8260C	Batch QC	WG1229717-4	Dichlorodifluoromethane	LCSD	60	70-130	01	potential low bias
8260C	Batch QC	WG1229717-4	Acetone	LCSD	150	70-130	01	potential high bias
8260C	Batch QC	WG1229717-4	Methyl ethyl ketone	LCSD	140	70-130	01	potential high bias
8260C	Batch QC	WG1229717-4	Diisopropyl Ether	LCSD	140	70-130	01	potential high bias

ORGANICS

VOLATILES

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID: L1916766-01 D
Client ID: 042319-22-01
Sample Location: BOSTON

Date Collected: 04/23/19 00:00
Date Received: 04/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 97,8260C
Analytical Date: 04/24/19 16:45
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Methylene chloride	ND		ug/l	8.0	--	4
1,1-Dichloroethane	ND		ug/l	4.0	--	4
Chloroform	ND		ug/l	4.0	--	4
Carbon tetrachloride	ND		ug/l	4.0	--	4
1,2-Dichloropropane	ND		ug/l	4.0	--	4
Dibromochloromethane	ND		ug/l	4.0	--	4
1,1,2-Trichloroethane	ND		ug/l	4.0	--	4
Tetrachloroethene	ND		ug/l	4.0	--	4
Chlorobenzene	ND		ug/l	4.0	--	4
Trichlorofluoromethane	28		ug/l	8.0	--	4
1,2-Dichloroethane	4.1		ug/l	4.0	--	4
1,1,1-Trichloroethane	ND		ug/l	4.0	--	4
Bromodichloromethane	ND		ug/l	4.0	--	4
trans-1,3-Dichloropropene	ND		ug/l	1.6	--	4
cis-1,3-Dichloropropene	ND		ug/l	1.6	--	4
1,3-Dichloropropene, Total	ND		ug/l	1.6	--	4
1,1-Dichloropropene	ND		ug/l	8.0	--	4
Bromoform	ND		ug/l	8.0	--	4
1,1,2,2-Tetrachloroethane	ND		ug/l	4.0	--	4
Benzene	5.0		ug/l	2.0	--	4
Toluene	8.7		ug/l	4.0	--	4
Ethylbenzene	7.8		ug/l	4.0	--	4
Chloromethane	ND		ug/l	8.0	--	4
Bromomethane	ND		ug/l	8.0	--	4
Vinyl chloride	ND		ug/l	4.0	--	4
Chloroethane	ND		ug/l	8.0	--	4
1,1-Dichloroethene	ND		ug/l	4.0	--	4
trans-1,2-Dichloroethene	ND		ug/l	4.0	--	4

Project Name: LEE KENNEDY **Lab Number:** L1916766

Project Number: Not Specified **Report Date:** 04/25/19

SAMPLE RESULTS

Lab ID: L1916766-01 D Date Collected: 04/23/19 00:00

Client ID: 042319-22-01 Date Received: 04/23/19

Sample Location: BOSTON Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
Trichloroethene	ND		ug/l	4.0	--	4
1,2-Dichlorobenzene	ND		ug/l	4.0	--	4
1,3-Dichlorobenzene	ND		ug/l	4.0	--	4
1,4-Dichlorobenzene	ND		ug/l	4.0	--	4
Methyl tert butyl ether	ND		ug/l	8.0	--	4
p/m-Xylene	21		ug/l	8.0	--	4
o-Xylene	9.5		ug/l	4.0	--	4
Xylenes, Total	31		ug/l	4.0	--	4
cis-1,2-Dichloroethene	ND		ug/l	4.0	--	4
1,2-Dichloroethene, Total	ND		ug/l	4.0	--	4
Dibromomethane	ND		ug/l	8.0	--	4
1,2,3-Trichloropropane	ND		ug/l	8.0	--	4
Styrene	ND		ug/l	4.0	--	4
Dichlorodifluoromethane	ND		ug/l	8.0	--	4
Acetone	79		ug/l	20	--	4
Carbon disulfide	ND		ug/l	8.0	--	4
Methyl ethyl ketone	ND		ug/l	20	--	4
Methyl isobutyl ketone	ND		ug/l	20	--	4
2-Hexanone	ND		ug/l	20	--	4
Bromochloromethane	ND		ug/l	8.0	--	4
Tetrahydrofuran	ND		ug/l	8.0	--	4
2,2-Dichloropropane	ND		ug/l	8.0	--	4
1,2-Dibromoethane	ND		ug/l	8.0	--	4
1,3-Dichloropropane	ND		ug/l	8.0	--	4
1,1,1,2-Tetrachloroethane	ND		ug/l	4.0	--	4
Bromobenzene	ND		ug/l	8.0	--	4
n-Butylbenzene	ND		ug/l	8.0	--	4
sec-Butylbenzene	9.0		ug/l	8.0	--	4
tert-Butylbenzene	ND		ug/l	8.0	--	4
o-Chlorotoluene	ND		ug/l	8.0	--	4
p-Chlorotoluene	ND		ug/l	8.0	--	4
1,2-Dibromo-3-chloropropane	ND		ug/l	8.0	--	4
Hexachlorobutadiene	ND		ug/l	2.4	--	4
Isopropylbenzene	18		ug/l	8.0	--	4
p-Isopropyltoluene	8.2		ug/l	8.0	--	4
Naphthalene	ND		ug/l	8.0	--	4
n-Propylbenzene	22		ug/l	8.0	--	4

Project Name: LEE KENNEDY **Lab Number:** L1916766

Project Number: Not Specified **Report Date:** 04/25/19

SAMPLE RESULTS

Lab ID: L1916766-01 D Date Collected: 04/23/19 00:00

Client ID: 042319-22-01 Date Received: 04/23/19

Sample Location: BOSTON Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
MCP Volatile Organics - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	8.0	--	4
1,2,4-Trichlorobenzene	ND		ug/l	8.0	--	4
1,3,5-Trimethylbenzene	ND		ug/l	8.0	--	4
1,2,4-Trimethylbenzene	10		ug/l	8.0	--	4
Diethyl ether	ND		ug/l	8.0	--	4
Diisopropyl Ether	ND		ug/l	8.0	--	4
Ethyl-Tert-Butyl-Ether	ND		ug/l	8.0	--	4
Tertiary-Amyl Methyl Ether	ND		ug/l	8.0	--	4
1,4-Dioxane	ND		ug/l	1000	--	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	99		70-130

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/24/19 08:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1229717-5					
Methylene chloride	ND		ug/l	2.0	--
1,1-Dichloroethane	ND		ug/l	1.0	--
Chloroform	ND		ug/l	1.0	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,2-Dichloropropane	ND		ug/l	1.0	--
Dibromochloromethane	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.0	--
Tetrachloroethene	ND		ug/l	1.0	--
Chlorobenzene	ND		ug/l	1.0	--
Trichlorofluoromethane	ND		ug/l	2.0	--
1,2-Dichloroethane	ND		ug/l	1.0	--
1,1,1-Trichloroethane	ND		ug/l	1.0	--
Bromodichloromethane	ND		ug/l	1.0	--
trans-1,3-Dichloropropene	ND		ug/l	0.40	--
cis-1,3-Dichloropropene	ND		ug/l	0.40	--
1,3-Dichloropropene, Total	ND		ug/l	0.40	--
1,1-Dichloropropene	ND		ug/l	2.0	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	1.0	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Chloromethane	ND		ug/l	2.0	--
Bromomethane	ND		ug/l	2.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	2.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
trans-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/24/19 08:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1229717-5					
1,2-Dichlorobenzene	ND		ug/l	1.0	--
1,3-Dichlorobenzene	ND		ug/l	1.0	--
1,4-Dichlorobenzene	ND		ug/l	1.0	--
Methyl tert butyl ether	ND		ug/l	2.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
1,2-Dichloroethene, Total	ND		ug/l	1.0	--
Dibromomethane	ND		ug/l	2.0	--
1,2,3-Trichloropropane	ND		ug/l	2.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	2.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	2.0	--
Methyl ethyl ketone	ND		ug/l	5.0	--
Methyl isobutyl ketone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.0	--
Tetrahydrofuran	ND		ug/l	2.0	--
2,2-Dichloropropane	ND		ug/l	2.0	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.0	--
1,1,1,2-Tetrachloroethane	ND		ug/l	1.0	--
Bromobenzene	ND		ug/l	2.0	--
n-Butylbenzene	ND		ug/l	2.0	--
sec-Butylbenzene	ND		ug/l	2.0	--
tert-Butylbenzene	ND		ug/l	2.0	--
o-Chlorotoluene	ND		ug/l	2.0	--

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 97,8260C
Analytical Date: 04/24/19 08:00
Analyst: MM

Parameter	Result	Qualifier	Units	RL	MDL
MCP Volatile Organics - Westborough Lab for sample(s): 01 Batch: WG1229717-5					
p-Chlorotoluene	ND		ug/l	2.0	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.0	--
Hexachlorobutadiene	ND		ug/l	0.60	--
Isopropylbenzene	ND		ug/l	2.0	--
p-Isopropyltoluene	ND		ug/l	2.0	--
Naphthalene	ND		ug/l	2.0	--
n-Propylbenzene	ND		ug/l	2.0	--
1,2,3-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trichlorobenzene	ND		ug/l	2.0	--
1,3,5-Trimethylbenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.0	--
Diethyl ether	ND		ug/l	2.0	--
Diisopropyl Ether	ND		ug/l	2.0	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	106		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1229717-3 WG1229717-4								
Methylene chloride	94		92		70-130	2		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	110		100		70-130	10		20
1,2-Dichloropropane	110		110		70-130	0		20
Dibromochloromethane	96		90		70-130	6		20
1,1,2-Trichloroethane	100		99		70-130	1		20
Tetrachloroethene	90		88		70-130	2		20
Chlorobenzene	100		97		70-130	3		20
Trichlorofluoromethane	110		100		70-130	10		20
1,2-Dichloroethane	130		120		70-130	8		20
1,1,1-Trichloroethane	110		100		70-130	10		20
Bromodichloromethane	110		100		70-130	10		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	110		100		70-130	10		20
Bromoform	90		93		70-130	3		20
1,1,2,2-Tetrachloroethane	100		100		70-130	0		20
Benzene	100		98		70-130	2		20
Toluene	98		97		70-130	1		20
Ethylbenzene	100		99		70-130	1		20
Chloromethane	110		100		70-130	10		20
Bromomethane	99		94		70-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1229717-3 WG1229717-4								
Vinyl chloride	100		97		70-130	3		20
Chloroethane	110		100		70-130	10		20
1,1-Dichloroethene	91		86		70-130	6		20
trans-1,2-Dichloroethene	93		90		70-130	3		20
Trichloroethene	100		99		70-130	1		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	97		100		70-130	3		20
Methyl tert butyl ether	97		93		70-130	4		20
p/m-Xylene	100		100		70-130	0		20
o-Xylene	100		100		70-130	0		20
cis-1,2-Dichloroethene	93		92		70-130	1		20
Dibromomethane	100		100		70-130	0		20
1,2,3-Trichloropropane	110		110		70-130	0		20
Styrene	100		95		70-130	5		20
Dichlorodifluoromethane	**62**	Q	**60**	Q	70-130	3		20
Acetone	**140**	Q	**150**	Q	70-130	7		20
Carbon disulfide	100		96		70-130	4		20
Methyl ethyl ketone	**140**	Q	**140**	Q	70-130	0		20
Methyl isobutyl ketone	100		100		70-130	0		20
2-Hexanone	120		120		70-130	0		20
Bromochloromethane	97		97		70-130	0		20
Tetrahydrofuran	130		120		70-130	8		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1229717-3 WG1229717-4								
2,2-Dichloropropane	110		110		70-130	0		20
1,2-Dibromoethane	97		92		70-130	5		20
1,3-Dichloropropane	100		100		70-130	0		20
1,1,1,2-Tetrachloroethane	96		95		70-130	1		20
Bromobenzene	95		96		70-130	1		20
n-Butylbenzene	97		99		70-130	2		20
sec-Butylbenzene	110		110		70-130	0		20
tert-Butylbenzene	100		110		70-130	10		20
o-Chlorotoluene	120		120		70-130	0		20
p-Chlorotoluene	100		110		70-130	10		20
1,2-Dibromo-3-chloropropane	87		88		70-130	1		20
Hexachlorobutadiene	79		80		70-130	1		20
Isopropylbenzene	110		110		70-130	0		20
p-Isopropyltoluene	97		98		70-130	1		20
Naphthalene	76		78		70-130	3		20
n-Propylbenzene	110		110		70-130	0		20
1,2,3-Trichlorobenzene	74		77		70-130	4		20
1,2,4-Trichlorobenzene	74		78		70-130	5		20
1,3,5-Trimethylbenzene	89		90		70-130	1		20
1,2,4-Trimethylbenzene	87		87		70-130	0		20
Diethyl ether	94		95		70-130	1		20
Diisopropyl Ether	**140**	Q	**140**	Q	70-130	0		20
Ethyl-Tert-Butyl-Ether	110		110		70-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1916766

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
MCP Volatile Organics - Westborough Lab Associated sample(s): 01 Batch: WG1229717-3 WG1229717-4								
Tertiary-Amyl Methyl Ether	100		97		70-130	3		20
1,4-Dioxane	96		98		70-130	2		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	119		120		70-130
Toluene-d8	105		103		70-130
4-Bromofluorobenzene	103		107		70-130
Dibromofluoromethane	105		107		70-130

PETROLEUM HYDROCARBONS

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID:	L1916766-01	D	Date Collected:	04/23/19 00:00
Client ID:	042319-22-01		Date Received:	04/23/19
Sample Location:	BOSTON		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Water			
Analytical Method:	131,VPH-18-2.1			
Analytical Date:	04/24/19 14:44			
Analyst:	MKS			

Trap:	EST, Carbopack B/Carboxen 1000&1001	Analytical Column:	Restek, RTX-502.2, 105m, 0.53ID, 3um

Quality Control Information

Condition of sample received:	Unsatisfactory
Aqueous Preservative:	See Narrative
Sample Temperature upon receipt:	Received on Ice

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Petroleum Hydrocarbons - Westborough Lab						
C5-C8 Aliphatics	2870		ug/l	500	--	10
C9-C12 Aliphatics	2040		ug/l	500	--	10
C9-C10 Aromatics	854		ug/l	500	--	10
C5-C8 Aliphatics, Adjusted	2870		ug/l	500	--	10
C9-C12 Aliphatics, Adjusted	1180		ug/l	500	--	10
Benzene	ND		ug/l	20.0	--	10
Toluene	ND		ug/l	20.0	--	10
Ethylbenzene	ND		ug/l	20.0	--	10
p/m-Xylene	ND		ug/l	20.0	--	10
o-Xylene	ND		ug/l	20.0	--	10
Methyl tert butyl ether	ND		ug/l	30.0	--	10
Naphthalene	ND		ug/l	40.0	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	86		70-130
2,5-Dibromotoluene-FID	97		70-130

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

SAMPLE RESULTS

Lab ID:	L1916766-01	D	Date Collected:	04/23/19 00:00
Client ID:	042319-22-01		Date Received:	04/23/19
Sample Location:	BOSTON		Field Prep:	Not Specified
Sample Depth:				
Matrix:	Water		Extraction Method:	EPA 3510C
Analytical Method:	98,EPH-04-1.1		Extraction Date:	04/24/19 15:42
Analytical Date:	04/25/19 05:12		Cleanup Method1:	EPH-04-1
Analyst:	LL		Cleanup Date1:	04/24/19

Quality Control Information

Condition of sample received:	Unsatisfactory
Aqueous Preservative:	See Narrative
Sample Temperature upon receipt:	Received on Ice
Sample Extraction method:	Extracted Per the Method

Extractable Petroleum Hydrocarbons - Westborough Lab

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
C9-C18 Aliphatics	44800		ug/l	588	--	5
C19-C36 Aliphatics	79900		ug/l	588	--	5
C11-C22 Aromatics	4120		ug/l	588	--	5
C11-C22 Aromatics, Adjusted	4120		ug/l	588	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Chloro-Octadecane	105		40-140
o-Terphenyl	51		40-140
2-Fluorobiphenyl	59		40-140
2-Bromonaphthalene	57		40-140

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 98,EPH-04-1.1
Analytical Date: 04/25/19 02:08
Analyst: LL

Extraction Method: EPA 3510C
Extraction Date: 04/24/19 15:42
Cleanup Method: EPH-04-1
Cleanup Date: 04/24/19

Parameter	Result	Qualifier	Units	RL	MDL
Extractable Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1229885-1					
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	51		40-140
o-Terphenyl	67		40-140
2-Fluorobiphenyl	74		40-140
2-Bromonaphthalene	73		40-140

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 131,VPH-18-2.1
Analytical Date: 04/24/19 14:13
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Petroleum Hydrocarbons - Westborough Lab for sample(s): 01 Batch: WG1229894-4					
C5-C8 Aliphatics	ND		ug/l	50.0	--
C9-C12 Aliphatics	ND		ug/l	50.0	--
C9-C10 Aromatics	ND		ug/l	50.0	--
C5-C8 Aliphatics, Adjusted	ND		ug/l	50.0	--
C9-C12 Aliphatics, Adjusted	ND		ug/l	50.0	--
Benzene	ND		ug/l	2.00	--
Toluene	ND		ug/l	2.00	--
Ethylbenzene	ND		ug/l	2.00	--
p/m-Xylene	ND		ug/l	2.00	--
o-Xylene	ND		ug/l	2.00	--
Methyl tert butyl ether	ND		ug/l	3.00	--
Naphthalene	ND		ug/l	4.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2,5-Dibromotoluene-PID	83		70-130
2,5-Dibromotoluene-FID	93		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1229885-2 WG1229885-3								
C9-C18 Aliphatics	66		77		40-140	15		25
C19-C36 Aliphatics	73		81		40-140	10		25
C11-C22 Aromatics	68		69		40-140	1		25
Naphthalene	55		63		40-140	14		25
2-Methylnaphthalene	56		62		40-140	10		25
Acenaphthylene	61		66		40-140	8		25
Acenaphthene	63		68		40-140	8		25
Fluorene	63		68		40-140	8		25
Phenanthrene	65		70		40-140	7		25
Anthracene	71		72		40-140	1		25
Fluoranthene	65		68		40-140	5		25
Pyrene	67		70		40-140	4		25
Benzo(a)anthracene	63		66		40-140	5		25
Chrysene	64		67		40-140	5		25
Benzo(b)fluoranthene	64		65		40-140	2		25
Benzo(k)fluoranthene	69		67		40-140	3		25
Benzo(a)pyrene	61		63		40-140	3		25
Indeno(1,2,3-cd)Pyrene	58		59		40-140	2		25
Dibenzo(a,h)anthracene	61		62		40-140	2		25
Benzo(ghi)perylene	56		56		40-140	0		25
Nonane (C9)	52		65		30-140	22		25
Decane (C10)	59		72		40-140	20		25
Dodecane (C12)	63		76		40-140	19		25

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1916766

Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Extractable Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1229885-2 WG1229885-3								
Tetradecane (C14)	65		77		40-140	17		25
Hexadecane (C16)	66		78		40-140	17		25
Octadecane (C18)	68		79		40-140	15		25
Nonadecane (C19)	68		79		40-140	15		25
Eicosane (C20)	68		79		40-140	15		25
Docosane (C22)	69		79		40-140	14		25
Tetracosane (C24)	68		78		40-140	14		25
Hexacosane (C26)	69		79		40-140	14		25
Octacosane (C28)	69		79		40-140	14		25
Triacontane (C30)	70		80		40-140	13		25
Hexatriacontane (C36)	70		82		40-140	16		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Chloro-Octadecane	56		60		40-140
o-Terphenyl	79		70		40-140
2-Fluorobiphenyl	68		73		40-140
2-Bromonaphthalene	69		74		40-140
% Naphthalene Breakthrough	0		0		
% 2-Methylnaphthalene Breakthrough	0		0		

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Petroleum Hydrocarbons - Westborough Lab Associated sample(s): 01 Batch: WG1229894-2 WG1229894-3								
C5-C8 Aliphatics	107		102		70-130	5		25
C9-C12 Aliphatics	107		101		70-130	6		25
C9-C10 Aromatics	94		90		70-130	5		25
Benzene	96		92		70-130	4		25
Toluene	96		92		70-130	4		25
Ethylbenzene	99		94		70-130	5		25
p/m-Xylene	99		95		70-130	5		25
o-Xylene	94		90		70-130	5		25
Methyl tert butyl ether	96		93		70-130	3		25
Naphthalene	90		86		70-130	5		25
1,2,4-Trimethylbenzene	94		90		70-130	5		25
Pentane	106		100		70-130	6		25
2-Methylpentane	110		105		70-130	5		25
2,2,4-Trimethylpentane	105		100		70-130	5		25
n-Nonane	108		103		30-130	5		25
n-Decane	101		95		70-130	7		25
n-Butylcyclohexane	111		104		70-130	7		25

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2,5-Dibromotoluene-PID	86		82		70-130
2,5-Dibromotoluene-FID	96		90		70-130

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1916766
Report Date: 04/25/19

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(*)
L1916766-01A	Plastic 250ml unpreserved	A	NA		5.2	Y	Absent		VPH-DELUX-18(7),MCP-8260-10(7)
L1916766-01B	Plastic 250ml unpreserved	A	7	7	5.2	N	Absent		EPH-10(14)
L1916766-01C	Plastic 250ml unpreserved	A	7	7	5.2	N	Absent		EPH-10(14)
L1916766-01D	Plastic 250ml unpreserved	A	7	7	5.2	N	Absent		EPH-10(14)
L1916766-01W	Vial HCl preserved split	A	NA		5.2	Y	Absent		VPH-DELUX-18(7),MCP-8260-10(7)
L1916766-01X	Vial HCl preserved split	A	NA		5.2	Y	Absent		VPH-DELUX-18(7),MCP-8260-10(7)
L1916766-01Y	Vial HCl preserved split	A	NA		5.2	Y	Absent		VPH-DELUX-18(7),MCP-8260-10(7)
L1916766-01Z	Vial HCl preserved split	A	NA		5.2	Y	Absent		VPH-DELUX-18(7),MCP-8260-10(7)
L1916766-02A	Plastic 250ml unpreserved	A	NA		5.2	Y	Absent		HOLD(14)
L1916766-03A	Plastic 250ml unpreserved	A	NA		5.2	Y	Absent		HOLD(14)
L1916766-04A	Plastic 250ml unpreserved	A	NA		5.2	Y	Absent		HOLD(14)

Container Comments

L1916766-01B	Sample pH not adjusted in login as samples were in plastic bottles and unpreserved
L1916766-01C	Sample pH not adjusted in login as samples were in plastic bottles and unpreserved
L1916766-01D	Sample pH not adjusted in login as samples were in plastic bottles and unpreserved

*Values in parentheses indicate holding time in days

Project Name:	LEE KENNEDY	**Lab Number:**	L1916766
Project Number:	Not Specified	**Report Date:**	04/25/19

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:	LEE KENNEDY	**Lab Number:**	L1916766
Project Number:	Not Specified	**Report Date:**	04/25/19

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: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1916766
Report Date: 04/25/19

REFERENCES

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

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

131 Method for the Determination of Volatile Petroleum Hydrocarbons (VPH), MassDEP, February 2018, Revision 2.1 with QC Requirements & Performance Standards for the Analysis of VPH under the Massachusetts Contingency Plan, WSC-CAM-IVA, June 1, 2018.

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

Date Rec'd in Lab: 4/23/19

ALPHA Job #: L1916766

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

Project Information
Project Name: Lee Kennedy
Project Location: Boston
Project #:
Project Manager: James Matz
ALPHA Quote #:

Report Information - Data Deliverables
☐ ADEx ☐ EMAIL

Billing Information
☐ Same as Client info PO #:

Client Information
Client: Axiom
Address: 2 Pearson Island Rd Wakefield MA
Phone: 978-578-6987
Email: jmatz@axiomenl.com

Turn-Around Time
☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: April 24, 2019

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

Additional Project Information:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: ☒ 8260 ☐ 624 ☐ 524.2	SVOC: ☐ ABN ☐ PAH	METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13	EPH: ☐ Ranges & Targets ☒ Ranges Only	VPH: ☐ Ranges & Targets ☐ Ranges Only	☐ PCB ☐ PEST	TPH: ☐ Quant Only ☐ Fingerprint	Sample Comments	TOTAL # BOTTLES
16766-01	Pit Water 01	4/23/19	11:11	W		X				X	X				
02	042319-22 - 02	11		W		X				X	X				
03	042319-22 - 03	11		W		X				X	X				
04	042319-22 - 04	11		W		X				X	X				

SAMPLE INFO
Filtration
☐ Field
☐ Lab to do
Preservation
☐ Lab to do

Container Type															
Preservative															

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
	4.23.19 07:10 PM	4/23/19	07:10

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

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

Method Blank Summary
Form 4
Volatiles

Client	: Axiom Partners, Inc.	**Lab Number**	: L1916766
Project Name	: LEE KENNEDY	**Project Number**	:
Lab Sample ID	: WG1229717-5	**Lab File ID**	: VQ190424C05
Instrument ID	: QUIMBY		
Matrix	: WATER	**Analysis Date**	: 04/24/19 08:00

Client Sample No.	Lab Sample ID	Analysis Date
WG1229717-3LCS	WG1229717-3	04/24/19 06:30
WG1229717-4LCSD	WG1229717-4	04/24/19 07:00
042319-22-01	L1916766-01D	04/24/19 16:45

Calibration Verification Summary
Form 7
Volatiles

Client	: Axiom Partners, Inc.		**Lab Number**	: L1916766	
Project Name	: LEE KENNEDY		**Project Number**	:	
Instrument ID	: QUIMBY		**Calibration Date**	: 04/24/19 06:30	
Lab File ID	: VQ190424C02		**Init. Calib. Date(s)**	: 02/07/19	02/07/19
Sample No	: WG1229717-2		**Init. Calib. Times**	: 05:30	09:02
Channel	:				

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
Fluorobenzene	1	1	-	0	20	86	0
Dichlorodifluoromethane	0.52	0.324	-	37.7*	20	56	0
Chloromethane	0.869	0.938	-	-7.9	20	93	0
Vinyl chloride	0.702	0.704	-	-0.3	20	85	0
Bromomethane	0.292	0.29	-	0.7	20	85	0
Chloroethane	0.408	0.441	-	-8.1	20	91	0
Trichlorofluoromethane	0.735	0.796	-	-8.3	20	93	0
Ethyl ether	0.208	0.196	-	5.8	20	82	0
1,1-Dichloroethene	0.432	0.395	-	8.6	20	83	0
Carbon disulfide	1.34	1.335	-	0.4	20	87	0
Methylene chloride	0.517	0.488	-	5.6	20	87	0
Acetone	10	14.465	-	-44.6*	20	116	0
trans-1,2-Dichloroethene	0.534	0.496	-	7.1	20	83	0
Methyl tert-butyl ether	1.073	1.044	-	2.7	20	86	0
Diisopropyl ether	2.161	3.063	-	-41.7*	20	123	0
1,1-Dichloroethane	1.163	1.333	-	-14.6	20	99	0
Ethyl tert-butyl ether	1.72	1.943	-	-13	20	98	0
cis-1,2-Dichloroethene	0.573	0.533	-	7	20	83	0
2,2-Dichloropropane	0.936	1.045	-	-11.6	20	99	-.01
Bromochloromethane	0.187	0.181	-	3.2	20	82	0
Chloroform	0.957	1.008	-	-5.3	20	92	0
Carbon tetrachloride	0.746	0.798	-	-7	20	95	-.01
Tetrahydrofuran	0.101	0.131	-	-29.7*	20	116	0
Dibromofluoromethane	0.212	0.223	-	-5.2	20	92	0
1,1,1-Trichloroethane	0.884	0.952	-	-7.7	20	94	0
2-Butanone	0.137	0.195	-	-42.3*	20	120	0
1,1-Dichloropropene	0.792	0.861	-	-8.7	20	93	0
Benzene	2.333	2.343	-	-0.4	20	88	0
tert-Amyl methyl ether	1.227	1.232	-	-0.4	20	87	0
1,2-Dichloroethane-d4	0.264	0.315	-	-19.3	20	105	0
1,2-Dichloroethane	0.641	0.808	-	-26.1*	20	110	0
Trichloroethene	0.547	0.572	-	-4.6	20	91	0
Dibromomethane	0.231	0.239	-	-3.5	20	91	0
1,2-Dichloropropane	0.61	0.673	-	-10.3	20	96	0
Bromodichloromethane	0.683	0.737	-	-7.9	20	94	-.01
1,4-Dioxane	0.00197	0.00192*	-	2.5	20	85	-.01
cis-1,3-Dichloropropene	0.86	0.891	-	-3.6	20	91	-.01
Chlorobenzene-d5	1	1	-	0	20	86	0
Toluene-d8	1.411	1.479	-	-4.8	20	91	0
Toluene	2.011	1.979	-	1.6	20	85	0
4-Methyl-2-pentanone	0.176	0.181	-	-2.8	20	89	-.01
Tetrachloroethene	0.746	0.674	-	9.7	20	80	0
trans-1,3-Dichloropropene	1.036	1.065	-	-2.8	20	92	0

* Value outside of QC limits.

Calibration Verification Summary
Form 7
Volatiles

Client	: Axiom Partners, Inc.	**Lab Number**	: L1916766
Project Name	: LEE KENNEDY	**Project Number**	:
Instrument ID	: QUIMBY	**Calibration Date**	: 04/24/19 06:30
Lab File ID	: VQ190424C02	**Init. Calib. Date(s)**	: 02/07/19 02/07/19
Sample No	: WG1229717-2	**Init. Calib. Times**	: 05:30 09:02
Channel	:		

Compound	Ave. RRF	RRF	Min RRF	%D	Max %D	Area%	Dev(min)
1,1,2-Trichloroethane	0.41	0.417	-	-1.7	20	91	-.01
Chlorodibromomethane	0.527	0.505	-	4.2	20	84	-.01
1,3-Dichloropropane	0.897	0.946	-	-5.5	20	93	-.01
1,2-Dibromoethane	0.426	0.414	-	2.8	20	84	-.02
2-Hexanone	0.296	0.369	-	-24.7*	20	104	-.02
Chlorobenzene	1.915	1.923	-	-0.4	20	87	-.01
Ethylbenzene	3.953	4.061	-	-2.7	20	90	-.01
1,1,1,2-Tetrachloroethane	0.669	0.642	-	4	20	86	0
p/m Xylene	1.373	1.4	-	-2	20	89	-.01
o Xylene	1.262	1.286	-	-1.9	20	89	0
Styrene	2.034	2.011	-	1.1	20	85	0
1,4-Dichlorobenzene-d4	1	1	-	0	20	86	0
Bromoform	0.649	0.583	-	10.2	20	77	-.01
Isopropylbenzene	7.983	8.588	-	-7.6	20	92	0
4-Bromofluorobenzene	1.204	1.24	-	-3	20	89	0
Bromobenzene	1.573	1.497	-	4.8	20	81	-.02
n-Propylbenzene	9.209	10.068	-	-9.3	20	97	0
1,1,2,2-Tetrachloroethane	1.075	1.116	-	-3.8	20	89	-.01
2-Chlorotoluene	5.748	6.677	-	-16.2	20	102	0
1,3,5-Trimethylbenzene	5.814	5.176	-	11	20	77	0
1,2,3-Trichloropropane	0.939	1.006	-	-7.1	20	92	0
4-Chlorotoluene	5.605	5.832	-	-4	20	93	0
tert-Butylbenzene	5.007	5.272	-	-5.3	20	94	0
1,2,4-Trimethylbenzene	5.336	4.642	-	13	20	75	0
sec-Butylbenzene	7.223	7.866	-	-8.9	20	98	0
p-Isopropyltoluene	5.859	5.681	-	3	20	87	0
1,3-Dichlorobenzene	2.864	2.888	-	-0.8	20	88	0
1,4-Dichlorobenzene	2.751	2.662	-	3.2	20	84	-.01
n-Butylbenzene	5.292	5.147	-	2.7	20	86	0
1,2-Dichlorobenzene	2.438	2.477	-	-1.6	20	87	-.01
1,2-Dibromo-3-chloropropan	0.14	0.122	-	12.9	20	74	-.01
Hexachlorobutadiene	0.98	0.776	-	20.8*	20	74	-.02
1,2,4-Trichlorobenzene	1.25	0.929	-	25.7*	20	65	-.01
Naphthalene	1.739	1.324	-	23.9*	20	64	-.01
1,2,3-Trichlorobenzene	1.024	0.762	-	25.6*	20	65	-.02

* Value outside of QC limits.

ANALYTICAL REPORT

Lab Number:	L1929194
Client:	Axiom Partners, Inc. One Pleasure Island Road, Suite 2C Wakefield, MA 01880
ATTN:	James Matz
Phone:	(781) 213-9198
Project Name:	LEE KENNEDY
Project Number:	01269.052
Report Date:	07/09/19

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: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1929194-01	S-2	WATER	178 IPSWICH ST., BOSTON	07/02/19 08:30	07/03/19

Project Name:	LEE KENNEDY	**Lab Number:**	L1929194
Project Number:	01269.052	**Report Date:**	07/09/19

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:	LEE KENNEDY	**Lab Number:**	L1929194
Project Number:	01269.052	**Report Date:**	07/09/19

Case Narrative (continued)

Semivolatile Organics by Method 625

L1929194-01: The sample has elevated detection limits due to limited sample volume available for analysis.

PCBs

L1929194-01: The sample has elevated detection limits due to limited sample volume available for 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: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 07/09/19

ORGANICS

SEMIVOLATILES

Project Name: LEE KENNEDY
Project Number: 01269.052
Lab Number: L1929194
Report Date: 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01
Client ID: S-2
Sample Location: 178 IPSWICH ST., BOSTON

Date Collected: 07/02/19 08:30
Date Received: 07/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 07/09/19 12:23
Analyst: EK

Extraction Method: EPA 625.1
Extraction Date: 07/08/19 10:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/l	7.3	--	1
Benzidine[1]	ND		ug/l	73	--	1
1,2,4-Trichlorobenzene	ND		ug/l	18	--	1
Hexachlorobenzene	ND		ug/l	7.3	--	1
Bis(2-chloroethyl)ether	ND		ug/l	7.3	--	1
2-Chloronaphthalene	ND		ug/l	7.3	--	1
3,3'-Dichlorobenzidine	ND		ug/l	18	--	1
2,4-Dinitrotoluene	ND		ug/l	18	--	1
2,6-Dinitrotoluene	ND		ug/l	18	--	1
Azobenzene[1]	ND		ug/l	7.3	--	1
Fluoranthene	ND		ug/l	7.3	--	1
4-Chlorophenyl phenyl ether	ND		ug/l	7.3	--	1
4-Bromophenyl phenyl ether	ND		ug/l	7.3	--	1
Bis(2-chloroisopropyl)ether	ND		ug/l	7.3	--	1
Bis(2-chloroethoxy)methane	ND		ug/l	18	--	1
Hexachlorobutadiene	ND		ug/l	7.3	--	1
Hexachlorocyclopentadiene[1]	ND		ug/l	36	--	1
Hexachloroethane	ND		ug/l	7.3	--	1
Isophorone	ND		ug/l	18	--	1
Naphthalene	ND		ug/l	7.3	--	1
Nitrobenzene	ND		ug/l	7.3	--	1
NDPA/DPA[1]	ND		ug/l	7.3	--	1
n-Nitrosodi-n-propylamine	ND		ug/l	18	--	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	8.0	--	1
Butyl benzyl phthalate	ND		ug/l	18	--	1
Di-n-butylphthalate	ND		ug/l	18	--	1
Di-n-octylphthalate	ND		ug/l	18	--	1
Diethyl phthalate	ND		ug/l	18	--	1

Project Name: LEE KENNEDY **Lab Number:** L1929194

Project Number: 01269.052 **Report Date:** 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01 Date Collected: 07/02/19 08:30

Client ID: S-2 Date Received: 07/03/19

Sample Location: 178 IPSWICH ST., BOSTON 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	18	--	1
Benzo(a)anthracene	ND		ug/l	7.3	--	1
Benzo(a)pyrene	ND		ug/l	7.3	--	1
Benzo(b)fluoranthene	ND		ug/l	7.3	--	1
Benzo(k)fluoranthene	ND		ug/l	7.3	--	1
Chrysene	ND		ug/l	7.3	--	1
Acenaphthylene	ND		ug/l	7.3	--	1
Anthracene	ND		ug/l	7.3	--	1
Benzo(ghi)perylene	ND		ug/l	7.3	--	1
Fluorene	ND		ug/l	7.3	--	1
Phenanthrene	ND		ug/l	7.3	--	1
Dibenzo(a,h)anthracene	ND		ug/l	7.3	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	7.3	--	1
Pyrene	ND		ug/l	7.3	--	1
4-Chloroaniline[1]	ND		ug/l	18	--	1
Dibenzofuran[1]	ND		ug/l	7.3	--	1
2-Methylnaphthalene[1]	ND		ug/l	7.3	--	1
n-Nitrosodimethylamine[1]	ND		ug/l	7.3	--	1
2,4,6-Trichlorophenol	ND		ug/l	18	--	1
p-Chloro-m-cresol[1]	ND		ug/l	7.3	--	1
2-Chlorophenol	ND		ug/l	7.3	--	1
2,4-Dichlorophenol	ND		ug/l	18	--	1
2,4-Dimethylphenol	ND		ug/l	18	--	1
2-Nitrophenol	ND		ug/l	18	--	1
4-Nitrophenol	ND		ug/l	36	--	1
2,4-Dinitrophenol	ND		ug/l	73	--	1
4,6-Dinitro-o-cresol	ND		ug/l	36	--	1
Pentachlorophenol	ND		ug/l	18	--	1
Phenol	ND		ug/l	18	--	1
2-Methylphenol[1]	ND		ug/l	18	--	1
3-Methylphenol/4-Methylphenol[1]	ND		ug/l	18	--	1
2,4,5-Trichlorophenol[1]	ND		ug/l	18	--	1
Benzoic Acid[1]	ND		ug/l	180	--	1
Benzyl Alcohol[1]	ND		ug/l	7.3	--	1

Project Name: LEE KENNEDY **Lab Number:** L1929194

Project Number: 01269.052 **Report Date:** 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01 Date Collected: 07/02/19 08:30

Client ID: S-2 Date Received: 07/03/19

Sample Location: 178 IPSWICH ST., BOSTON 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	58		25-87
Phenol-d6	39		16-65
Nitrobenzene-d5	99		42-122
2-Fluorobiphenyl	97		46-121
2,4,6-Tribromophenol	106		45-128
4-Terphenyl-d14	113		47-138

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/09/19 16:13
Analyst: EK

Extraction Method: EPA 625.1
Extraction Date: 07/08/19 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1256962-1					
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: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/09/19 16:13
Analyst: EK

Extraction Method: EPA 625.1
Extraction Date: 07/08/19 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1256962-1					
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: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/09/19 16:13
Analyst: EK

Extraction Method: EPA 625.1
Extraction Date: 07/08/19 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1256962-1					
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	48		25-87
Phenol-d6	34		16-65
Nitrobenzene-d5	72		42-122
2-Fluorobiphenyl	72		46-121
2,4,6-Tribromophenol	78		45-128
4-Terphenyl-d14	86		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256962-3								
Acenaphthene	86		-		60-132	-		48
Benzidine[1]	16		-		0-70	-		30
1,2,4-Trichlorobenzene	76		-		57-130	-		50
Hexachlorobenzene	98		-		8-142	-		55
Bis(2-chloroethyl)ether	76		-		43-126	-		108
2-Chloronaphthalene	92		-		65-120	-		24
3,3'-Dichlorobenzidine	46		-		8-213	-		108
2,4-Dinitrotoluene	103		-		48-127	-		42
2,6-Dinitrotoluene	107		-		68-137	-		48
Azobenzene[1]	93		-		44-115	-		23
Fluoranthene	101		-		43-121	-		66
4-Chlorophenyl phenyl ether	88		-		38-145	-		61
4-Bromophenyl phenyl ether	96		-		65-120	-		43
Bis(2-chloroisopropyl)ether	74		-		63-139	-		76
Bis(2-chloroethoxy)methane	87		-		49-165	-		54
Hexachlorobutadiene	70		-		38-120	-		62
Hexachlorocyclopentadiene[1]	74		-		7-118	-		35
Hexachloroethane	66		-		55-120	-		52
Isophorone	91		-		47-180	-		93
Naphthalene	78		-		36-120	-		65
Nitrobenzene	83		-		54-158	-		62
NDPA/DPA[1]	98		-		45-112	-		36
n-Nitrosodi-n-propylamine	89		-		14-198	-		87

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256962-3								
Bis(2-ethylhexyl)phthalate	96		-		29-137	-		82
Butyl benzyl phthalate	103		-		1-140	-		60
Di-n-butylphthalate	98		-		8-120	-		47
Di-n-octylphthalate	96		-		19-132	-		69
Diethyl phthalate	95		-		1-120	-		100
Dimethyl phthalate	101		-		1-120	-		183
Benzo(a)anthracene	95		-		42-133	-		53
Benzo(a)pyrene	104		-		32-148	-		72
Benzo(b)fluoranthene	102		-		42-140	-		71
Benzo(k)fluoranthene	99		-		25-146	-		63
Chrysene	88		-		44-140	-		87
Acenaphthylene	96		-		54-126	-		74
Anthracene	92		-		43-120	-		66
Benzo(ghi)perylene	99		-		1-195	-		97
Fluorene	93		-		70-120	-		38
Phenanthrene	88		-		65-120	-		39
Dibenzo(a,h)anthracene	98		-		1-200	-		126
Indeno(1,2,3-cd)pyrene	101		-		1-151	-		99
Pyrene	100		-		70-120	-		49
4-Chloroaniline[1]	72		-		10-100	-		53
Dibenzofuran[1]	89		-		23-126	-		22
2-Methylnaphthalene[1]	85		-		40-109	-		18
n-Nitrosodimethylamine[1]	46		-		15-68	-		17

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256962-3								
2,4,6-Trichlorophenol	101		-		52-129	-		58
p-Chloro-m-cresol[1]	102		-		68-130	-		73
2-Chlorophenol	82		-		36-120	-		61
2,4-Dichlorophenol	97		-		53-122	-		50
2,4-Dimethylphenol	89		-		42-120	-		58
2-Nitrophenol	88		-		45-167	-		55
4-Nitrophenol	75		-		13-129	-		131
2,4-Dinitrophenol	85		-		1-173	-		132
4,6-Dinitro-o-cresol	105		-		56-130	-		203
Pentachlorophenol	99		-		38-152	-		86
Phenol	42		-		17-120	-		64
2-Methylphenol[1]	80		-		38-102	-		23
3-Methylphenol/4-Methylphenol[1]	79		-		35-103	-		26
2,4,5-Trichlorophenol[1]	104		-		47-126	-		28
Benzoic Acid[1]	10		-		2-55	-		27
Benzyl Alcohol[1]	76		-		31-103	-		23

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256962-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	57				25-87
Phenol-d6	43				16-65
Nitrobenzene-d5	87				42-122
2-Fluorobiphenyl	95				46-121
2,4,6-Tribromophenol	106				45-128
4-Terphenyl-d14	105				47-138

PCBS

Project Name: LEE KENNEDY
Project Number: 01269.052
Lab Number: L1929194
Report Date: 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01
Client ID: S-2
Sample Location: 178 IPSWICH ST., BOSTON

Date Collected: 07/02/19 08:30
Date Received: 07/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 07/06/19 15:54
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 07/05/19 13:52
Cleanup Method: EPA 3665A
Cleanup Date: 07/05/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/05/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.926	--	1	A
Aroclor 1221	ND		ug/l	0.926	--	1	A
Aroclor 1232	ND		ug/l	0.926	--	1	A
Aroclor 1242	ND		ug/l	0.926	--	1	A
Aroclor 1248	ND		ug/l	0.926	--	1	A
Aroclor 1254	ND		ug/l	0.926	--	1	A
Aroclor 1260	ND		ug/l	0.741	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	70		37-123	B
Decachlorobiphenyl	84		38-114	B
2,4,5,6-Tetrachloro-m-xylene	70		37-123	A
Decachlorobiphenyl	82		38-114	A

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 07/06/19 14:41
Analyst: WR

Extraction Method: EPA 608.3
Extraction Date: 07/05/19 08:43
Cleanup Method: EPA 3665A
Cleanup Date: 07/05/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/05/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1256609-1						
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	64		37-123	B
Decachlorobiphenyl	83		38-114	B
2,4,5,6-Tetrachloro-m-xylene	64		37-123	A
Decachlorobiphenyl	81		38-114	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256609-2									
Aroclor 1016	74		-		50-140	-		36	A
Aroclor 1260	74		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	67				37-123	B
Decachlorobiphenyl	91				38-114	B
2,4,5,6-Tetrachloro-m-xylene	68				37-123	A
Decachlorobiphenyl	89				38-114	A

METALS

Project Name: LEE KENNEDY
Lab Number: L1929194
Project Number: 01269.052
Report Date: 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01
Client ID: S-2
Sample Location: 178 IPSWICH ST., BOSTON
Date Collected: 07/02/19 08:30
Date Received: 07/03/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.050	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Arsenic, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Beryllium, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Chromium, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Copper, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.00020	--	1	07/08/19 16:41	07/08/19 20:13	EPA 245.1	3,245.1	EA
Nickel, Total	ND		mg/l	0.025	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Thallium, Total	ND		mg/l	0.020	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC
Zinc, Total	ND		mg/l	0.050	--	1	07/08/19 09:51	07/08/19 22:24	EPA 3005A	19,200.7	LC

Project Name: LEE KENNEDY
Project Number: 01269.052
Lab Number: L1929194
Report Date: 07/09/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1256976-1										
Antimony, Total	ND		mg/l	0.050	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Arsenic, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Beryllium, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Chromium, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Copper, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Lead, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Nickel, Total	ND		mg/l	0.025	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Thallium, Total	ND		mg/l	0.020	--	1	07/08/19 09:51	07/08/19 19:58	19,200.7	LC
Zinc, Total	ND		mg/l	0.050	--	1	07/08/19 09:51	07/08/19 19:58	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: WG1257185-1										
Mercury, Total	ND		mg/l	0.0002	--	1	07/08/19 16:41	07/08/19 19:39	3,245.1	EA

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: 01269.052

Lab Number: L1929194

Report Date: 07/09/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1256976-2								
Antimony, Total	96		-		85-115	-		
Arsenic, Total	115		-		85-115	-		
Beryllium, Total	109		-		85-115	-		
Cadmium, Total	109		-		85-115	-		
Chromium, Total	106		-		85-115	-		
Copper, Total	100		-		85-115	-		
Lead, Total	107		-		85-115	-		
Nickel, Total	104		-		85-115	-		
Selenium, Total	115		-		85-115	-		
Silver, Total	106		-		85-115	-		
Thallium, Total	108		-		85-115	-		
Zinc, Total	111		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1257185-2								
Mercury, Total	101		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1256976-3 QC Sample: L1928706-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.368	**74**	Q	-	-		75-125	-		20
Arsenic, Total	0.019	0.12	0.147	106		-	-		75-125	-		20
Beryllium, Total	ND	0.05	0.050	100		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.049	97		-	-		75-125	-		20
Chromium, Total	0.049	0.2	0.234	92		-	-		75-125	-		20
Copper, Total	0.067	0.25	0.296	91		-	-		75-125	-		20
Lead, Total	0.237	0.51	0.708	92		-	-		75-125	-		20
Nickel, Total	0.028	0.5	0.479	90		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.124	103		-	-		75-125	-		20
Silver, Total	ND	0.05	0.049	97		-	-		75-125	-		20
Thallium, Total	ND	0.12	0.104	87		-	-		75-125	-		20
Zinc, Total	0.201	0.5	0.693	98		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1256976-7 WG1256976-8 QC Sample: L1927728-01 Client ID: MS Sample									
Antimony, Total	ND	0.5	0.403	81	0.438	88	75-125	8	20
Arsenic, Total	ND	0.12	0.137	114	0.144	120	75-125	5	20
Beryllium, Total	ND	0.05	0.051	102	0.053	106	75-125	4	20
Cadmium, Total	ND	0.051	0.051	100	0.053	104	75-125	4	20
Chromium, Total	0.018	0.2	0.212	97	0.222	102	75-125	5	20
Copper, Total	0.023	0.25	0.262	96	0.272	100	75-125	4	20
Lead, Total	ND	0.51	0.507	99	0.532	104	75-125	5	20
Nickel, Total	ND	0.5	0.491	98	0.510	102	75-125	4	20
Selenium, Total	ND	0.12	0.130	108	0.139	116	75-125	7	20
Silver, Total	ND	0.05	0.050	100	0.052	105	75-125	5	20
Thallium, Total	ND	0.12	0.117	98	0.122	102	75-125	4	20
Zinc, Total	ND	0.5	0.549	110	0.571	114	75-125	4	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1257185-3 QC Sample: L1928833-01 Client ID: MS Sample									
Mercury, Total	0.00021	0.005	0.0048	92	-	-	70-130	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1257185-5 QC Sample: L1928833-02 Client ID: MS Sample									
Mercury, Total	ND	0.005	0.0045	89	-	-	70-130	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: 01269.052

Lab Number: L1929194

Report Date: 07/09/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1257185-4 QC Sample: L1928833-01 Client ID: DUP Sample						
Mercury, Total	0.00021	0.0002	mg/l	1		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1257185-6 QC Sample: L1928833-02 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: LEE KENNEDY
Project Number: 01269.052
Lab Number: L1929194
Report Date: 07/09/19

SAMPLE RESULTS

Lab ID: L1929194-01
Client ID: S-2
Sample Location: 178 IPSWICH ST., BOSTON
Sample Depth:
Matrix: Water

Date Collected: 07/02/19 08:30
Date Received: 07/03/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Cyanide, Total	ND		mg/l	0.005	--	1	07/08/19 11:45	07/08/19 14:31	121,4500CN-CE	LH
Formaldehyde by EPA 8315A - Westborough Lab										
Formaldehyde	ND		mg/l	0.100	--	1	07/03/19 20:00	07/04/19 05:31	1,8315A	JT

Project Name: LEE KENNEDY
Project Number: 01269.052
Lab Number: L1929194
Report Date: 07/09/19

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: WG1257023-1										
Cyanide, Total	ND		mg/l	0.005	--	1	07/08/19 11:45	07/08/19 14:25	121,4500CN-CE	LH
Formaldehyde by EPA 8315A - Westborough Lab for sample(s): 01 Batch: WG1257575-1										
Formaldehyde	ND		mg/l	0.100	--	1	07/03/19 20:00	07/04/19 05:51	1,8315A	JT

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: 01269.052

Lab Number: L1929194

Report Date: 07/09/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG1257023-2								
Cyanide, Total	98		-		90-110	-		
Formaldehyde by EPA 8315A - Westborough Lab Associated sample(s): 01 Batch: WG1257575-2								
Formaldehyde	105		-		39-153	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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: WG1257023-4 QC Sample: L1929384-02 Client ID: MS Sample												
Cyanide, Total	ND	0.2	0.169	**84**	Q	-	-		90-110	-		30
Formaldehyde by EPA 8315A - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1257575-3 WG1257575-4 QC Sample: L1900007-43 Client ID: MS Sample												
Formaldehyde	ND	0.4	0.505	126		0.518	130		39-153	3		40

Lab Duplicate Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: 01269.052

Lab Number: L1929194

Report Date: 07/09/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1257023-3 QC Sample: L1929384-01 Client ID: DUP Sample						
Cyanide, Total	ND	ND	mg/l	NC		30

Project Name: LEE KENNEDY
Project Number: 01269.052

Lab Number: L1929194
Report Date: 07/09/19

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(*)
L1929194-01A	Amber 500ml unpreserved	A	11	11	5.5	Y	Absent		FORM-8315(3)
L1929194-01B	Amber 250ml unpreserved	A	11	11	5.5	Y	Absent		PCB-608.3(7)
L1929194-01C	Plastic 250ml HNO3 preserved	A	<2	<2	5.5	Y	Absent		NI-UI(180),SB-UI(180),AG-UI(180),ZN-UI(180),SE-UI(180),HG-U(28),CD-UI(180),BE-UI(180),CR-UI(180),AS-UI(180),CU-UI(180),PB-UI(180),TL-UI(180)
L1929194-01D	Amber 250ml unpreserved	A	11	11	5.5	Y	Absent		625.1(7)
L1929194-01E	Plastic 250ml NaOH preserved	A	>12	>12	5.5	Y	Absent		TCN-4500(14)

Container Comments

L1929194-01A	Samples are inherently Basic by nature
L1929194-01B	Samples are inherently Basic by nature
L1929194-01D	Samples are inherently Basic by nature

*Values in parentheses indicate holding time in days

Project Name:	LEE KENNEDY	**Lab Number:**	L1929194
Project Number:	01269.052	**Report Date:**	07/09/19

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:	LEE KENNEDY	**Lab Number:**	L1929194
Project Number:	01269.052	**Report Date:**	07/09/19

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:	LEE KENNEDY	**Lab Number:**	L1929194
Project Number:	01269.052	**Report Date:**	07/09/19

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.

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

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

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 CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 7/3/19

ALPHA Job #: L1929194

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

Client Information

Client: Axiom

Address: 1 Pleasure Island Rd 2C, Wakefield MA 01880

Phone: 978-578-6987

Email: jmatz@axiomenv.com

Project Information

Project Name: Lee Kennedy

Project Location: 175 Ipswich St Boston

Project #: 01269.052

Project Manager: James Matz

ALPHA Quote #:

Turn-Around Time

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

Date Due: Tues July 9, 2019 COB

Report Information - Data Deliverables

☐ ADEx ☐ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

Additional Project Information:

There is one sample; five containers

ANALYSIS

VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☒ ABN ☐ PAH 625
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☒ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Target analyte list + cyanide

SAMPLE INFO

Filtration
☐ Field
☐ Lab to do

Preservation
☐ Lab to do

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Sample Comments
29194-01	S-2	7/2	8:10		HLB	
		7/2	8:15		HLB	
		7/2	8:20		HLB	
		7/2	8:25		HLB	
		7/2	8:30		HLB	

Container Type	A	A	A
Preservative			

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
	7/3/19 1145	ADE	7-3-19 11:45
	MS 7/3/19 15:40		7/3/19 1540

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

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

ANALYTICAL REPORT

Lab Number:	L1931445
Client:	Axiom Partners, Inc. One Pleasure Island Road, Suite 2C Wakefield, MA 01880
ATTN:	James Matz
Phone:	(781) 213-9198
Project Name:	LEE KENNEDY
Project Number:	Not Specified
Report Date:	07/21/19

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: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931445-01	RIVER-1	WATER	175 IPSWICH ST., BOSTON, MA	07/17/19 12:00	07/17/19

Project Name:	LEE KENNEDY	**Lab Number:**	L1931445
Project Number:	Not Specified	**Report Date:**	07/21/19

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:	LEE KENNEDY	**Lab Number:**	L1931445
Project Number:	Not Specified	**Report Date:**	07/21/19

Case Narrative (continued)

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics by Method 624

L1931445-01: The pH of the sample was less than two. It should be noted that 2-chloroethylvinyl ether breaks down under acidic conditions.

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: 07/21/19

ORGANICS

VOLATILES

Project Name: LEE KENNEDY
Lab Number: L1931445
Project Number: Not Specified
Report Date: 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA
Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 07/18/19 10:37
Analyst: GT

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

Project Name: LEE KENNEDY **Lab Number:** L1931445

Project Number: Not Specified **Report Date:** 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01 Date Collected: 07/17/19 12:00

Client ID: RIVER-1 Date Received: 07/17/19

Sample Location: 175 IPSWICH ST., BOSTON, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Styrene	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	10	--	1
Vinyl acetate	ND		ug/l	10	--	1
4-Methyl-2-pentanone	ND		ug/l	10	--	1
2-Hexanone	ND		ug/l	10	--	1
Acrolein	ND		ug/l	8.0	--	1
Acrylonitrile	ND		ug/l	10	--	1
Dibromomethane	ND		ug/l	1.0	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	102		60-140
Fluorobenzene	102		60-140
4-Bromofluorobenzene	99		60-140

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 07/18/19 10:00
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1261435-8					
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	--
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	--
Trichloroethene	ND		ug/l	1.0	--

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 07/18/19 10:00
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1261435-8					
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	--
n-Hexane[1]	ND		ug/l	20	--
Methyl tert butyl ether	ND		ug/l	10	--
Dibromomethane	ND		ug/l	1.0	--
1,4-Dioxane[1]	ND		ug/l	2000	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	106		60-140
Fluorobenzene	109		60-140
4-Bromofluorobenzene	100		60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1261435-7								
Methylene chloride	95		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Chloroform	110		-		70-135	-		54
Carbon tetrachloride	115		-		70-130	-		41
1,2-Dichloropropane	105		-		35-165	-		55
Dibromochloromethane	100		-		70-135	-		50
1,1,2-Trichloroethane	100		-		70-130	-		45
2-Chloroethylvinyl ether	100		-		1-225	-		71
Tetrachloroethene	110		-		70-130	-		39
Chlorobenzene	100		-		65-135	-		53
Trichlorofluoromethane	100		-		50-150	-		84
1,2-Dichloroethane	110		-		70-130	-		49
1,1,1-Trichloroethane	120		-		70-130	-		36
Bromodichloromethane	110		-		65-135	-		56
trans-1,3-Dichloropropene	100		-		50-150	-		86
cis-1,3-Dichloropropene	105		-		25-175	-		58
Bromoform	100		-		70-130	-		42
1,1,2,2-Tetrachloroethane	100		-		60-140	-		61
Benzene	110		-		65-135	-		61
Toluene	110		-		70-130	-		41
Ethylbenzene	110		-		60-140	-		63
Chloromethane	85		-		1-205	-		60
Bromomethane	80		-		15-185	-		61

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1261435-7								
Vinyl chloride	90		-		5-195	-		66
Chloroethane	100		-		40-160	-		78
1,1-Dichloroethene	105		-		50-150	-		32
trans-1,2-Dichloroethene	110		-		70-130	-		45
cis-1,2-Dichloroethene	100		-		60-140	-		30
Trichloroethene	110		-		65-135	-		48
1,2-Dichlorobenzene	105		-		65-135	-		57
1,3-Dichlorobenzene	100		-		70-130	-		43
1,4-Dichlorobenzene	100		-		65-135	-		57
p/m-Xylene	105		-		60-140	-		30
o-xylene	100		-		60-140	-		30
Styrene	105		-		60-140	-		30
Acetone	98		-		40-160	-		30
Carbon disulfide	95		-		60-140	-		30
2-Butanone	106		-		60-140	-		30
Vinyl acetate	102		-		60-140	-		30
4-Methyl-2-pentanone	102		-		60-140	-		30
2-Hexanone	100		-		60-140	-		30
Acrolein	95		-		60-140	-		30
Acrylonitrile	95		-		60-140	-		60
Methyl tert butyl ether	100		-		60-140	-		30
Dibromomethane	95		-		70-130	-		30
1,4-Dioxane[1]	100		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931445

Report Date: 07/21/19

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: WG1261435-7								
Tert-Butyl Alcohol	93		-		60-140	-		30
Tertiary-Amyl Methyl Ether	100		-		60-140	-		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	103				60-140
Fluorobenzene	104				60-140
4-Bromofluorobenzene	102				60-140

SEMIVOLATILES

Project Name: LEE KENNEDY **Lab Number:** L1931445

Project Number: Not Specified **Report Date:** 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA

Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 07/19/19 13:04
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 07/18/19 19:14

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: LEE KENNEDY **Lab Number:** L1931445

Project Number: Not Specified **Report Date:** 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01 Date Collected: 07/17/19 12:00

Client ID: RIVER-1 Date Received: 07/17/19

Sample Location: 175 IPSWICH ST., BOSTON, 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: LEE KENNEDY **Lab Number:** L1931445

Project Number: Not Specified **Report Date:** 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01 Date Collected: 07/17/19 12:00

Client ID: RIVER-1 Date Received: 07/17/19

Sample Location: 175 IPSWICH ST., BOSTON, 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	45		25-87
Phenol-d6	29		16-65
Nitrobenzene-d5	67		42-122
2-Fluorobiphenyl	74		46-121
2,4,6-Tribromophenol	88		45-128
4-Terphenyl-d14	83		47-138

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/18/19 12:03
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 07/17/19 10:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260953-1					
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: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/18/19 12:03
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 07/17/19 10:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260953-1					
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: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 07/18/19 12:03
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 07/17/19 10:12

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1260953-1					
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	56		25-87
Phenol-d6	39		16-65
Nitrobenzene-d5	70		42-122
2-Fluorobiphenyl	77		46-121
2,4,6-Tribromophenol	76		45-128
4-Terphenyl-d14	80		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1260953-2								
Acenaphthene	80		-		60-132	-		48
Benzidine[1]	25		-		0-70	-		30
1,2,4-Trichlorobenzene	70		-		57-130	-		50
Hexachlorobenzene	87		-		8-142	-		55
Bis(2-chloroethyl)ether	72		-		43-126	-		108
2-Chloronaphthalene	80		-		65-120	-		24
3,3'-Dichlorobenzidine	36		-		8-213	-		108
2,4-Dinitrotoluene	88		-		48-127	-		42
2,6-Dinitrotoluene	90		-		68-137	-		48
Azobenzene[1]	82		-		44-115	-		23
Fluoranthene	88		-		43-121	-		66
4-Chlorophenyl phenyl ether	81		-		38-145	-		61
4-Bromophenyl phenyl ether	85		-		65-120	-		43
Bis(2-chloroisopropyl)ether	67		-		63-139	-		76
Bis(2-chloroethoxy)methane	77		-		49-165	-		54
Hexachlorobutadiene	66		-		38-120	-		62
Hexachlorocyclopentadiene[1]	67		-		7-118	-		35
Hexachloroethane	62		-		55-120	-		52
Isophorone	81		-		47-180	-		93
Naphthalene	72		-		36-120	-		65
Nitrobenzene	75		-		54-158	-		62
NDPA/DPA[1]	84		-		45-112	-		36
n-Nitrosodi-n-propylamine	80		-		14-198	-		87

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1260953-2								
Bis(2-ethylhexyl)phthalate	96		-		29-137	-		82
Butyl benzyl phthalate	84		-		1-140	-		60
Di-n-butylphthalate	90		-		8-120	-		47
Di-n-octylphthalate	90		-		19-132	-		69
Diethyl phthalate	86		-		1-120	-		100
Dimethyl phthalate	87		-		1-120	-		183
Benzo(a)anthracene	90		-		42-133	-		53
Benzo(a)pyrene	88		-		32-148	-		72
Benzo(b)fluoranthene	92		-		42-140	-		71
Benzo(k)fluoranthene	89		-		25-146	-		63
Chrysene	86		-		44-140	-		87
Acenaphthylene	83		-		54-126	-		74
Anthracene	86		-		43-120	-		66
Benzo(ghi)perylene	91		-		1-195	-		97
Fluorene	82		-		70-120	-		38
Phenanthrene	82		-		65-120	-		39
Dibenzo(a,h)anthracene	89		-		1-200	-		126
Indeno(1,2,3-cd)pyrene	89		-		1-151	-		99
Pyrene	86		-		70-120	-		49
4-Chloroaniline[1]	62		-		10-100	-		53
Dibenzofuran[1]	81		-		23-126	-		22
2-Methylnaphthalene[1]	76		-		40-109	-		18
n-Nitrosodimethylamine[1]	49		-		15-68	-		17

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1260953-2								
2,4,6-Trichlorophenol	56		-		52-129	-		58
p-Chloro-m-cresol[1]	82		-		68-130	-		73
2-Chlorophenol	57		-		36-120	-		61
2,4-Dichlorophenol	63		-		53-122	-		50
2,4-Dimethylphenol	80		-		42-120	-		58
2-Nitrophenol	56		-		45-167	-		55
4-Nitrophenol	44		-		13-129	-		131
2,4-Dinitrophenol	40		-		1-173	-		132
4,6-Dinitro-o-cresol	60		-		56-130	-		203
Pentachlorophenol	53		-		38-152	-		86
Phenol	35		-		17-120	-		64
2-Methylphenol[1]	73		-		38-102	-		23
3-Methylphenol/4-Methylphenol[1]	70		-		35-103	-		26
2,4,5-Trichlorophenol[1]	61		-		47-126	-		28
Benzoic Acid[1]	5		-		2-55	-		27
Benzyl Alcohol[1]	68		-		31-103	-		23

Lab Control Sample Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1260953-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	39				25-87
Phenol-d6	35				16-65
Nitrobenzene-d5	73				42-122
2-Fluorobiphenyl	75				46-121
2,4,6-Tribromophenol	63				45-128
4-Terphenyl-d14	81				47-138

PETROLEUM HYDROCARBONS

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA

Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8015D(M)
Analytical Date: 07/19/19 05:13
Analyst: SC

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Petroleum Hydrocarbon Quantitation - Westborough Lab						
TPH	ND		ug/l	200	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	94		40-140

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8015D(M)
Analytical Date: 07/19/19 04:07
Analyst: SC

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 10:37

Parameter	Result	Qualifier	Units	RL	MDL
Petroleum Hydrocarbon Quantitation - Westborough Lab for sample(s): 01 Batch: WG1261511-1					
TPH	ND		ug/l	200	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
o-Terphenyl	97		40-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931445

Report Date: 07/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Petroleum Hydrocarbon Quantitation - Westborough Lab Associated sample(s): 01 Batch: WG1261511-2								
TPH	99		-		40-140	-		40

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
o-Terphenyl	88				40-140

PCBS

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA

Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 07/19/19 13:46
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 07/18/19 07:49
Cleanup Method: EPA 3665A
Cleanup Date: 07/18/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/19/19

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	80		37-123	B
Decachlorobiphenyl	84		38-114	B
2,4,5,6-Tetrachloro-m-xylene	80		37-123	A
Decachlorobiphenyl	86		38-114	A

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 07/19/19 12:45
Analyst: HT

Extraction Method: EPA 608.3
Extraction Date: 07/17/19 23:51
Cleanup Method: EPA 3665A
Cleanup Date: 07/18/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01 Batch: WG1261243-1						
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	63		37-123	B
Decachlorobiphenyl	74		38-114	B
2,4,5,6-Tetrachloro-m-xylene	63		37-123	A
Decachlorobiphenyl	76		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931445

Report Date: 07/21/19

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: WG1261243-2									
Aroclor 1016	62		-		50-140	-		36	A
Aroclor 1260	61		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	64				37-123	B
Decachlorobiphenyl	70				38-114	B
2,4,5,6-Tetrachloro-m-xylene	64				37-123	A
Decachlorobiphenyl	71				38-114	A

METALS

Project Name: LEE KENNEDY
Lab Number: L1931445
Project Number: Not Specified
Report Date: 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA
Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.050	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Arsenic, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Beryllium, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Chromium, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Copper, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Lead, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Mercury, Total	ND		mg/l	0.00020	--	1	07/19/19 11:15	07/19/19 13:51	EPA 245.1	3,245.1	GD
Nickel, Total	ND		mg/l	0.025	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Thallium, Total	ND		mg/l	0.020	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Zinc, Total	ND		mg/l	0.050	--	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	77.3		mg/l	0.660	NA	1	07/18/19 12:38	07/19/19 10:19	EPA 3005A	19,200.7	LC
Dissolved Metals - Mansfield Lab											
Iron, Dissolved	0.445		mg/l	0.050	--	1	07/18/19 15:13	07/19/19 02:20	EPA 3005A	19,200.7	LC

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG1261517-1										
Antimony, Total	ND		mg/l	0.050	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Arsenic, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Beryllium, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Cadmium, Total	ND		mg/l	0.005	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Chromium, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Copper, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Lead, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Nickel, Total	ND		mg/l	0.025	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Selenium, Total	ND		mg/l	0.010	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Silver, Total	ND		mg/l	0.007	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Thallium, Total	ND		mg/l	0.020	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC
Zinc, Total	ND		mg/l	0.050	--	1	07/18/19 12:38	07/19/19 09:50	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1261517-1										
Hardness	ND		mg/l	0.660	NA	1	07/18/19 12:38	07/19/19 09:50	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: WG1261626-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	07/18/19 15:13	07/19/19 01:23	19,200.7	LC

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931445
Report Date: 07/21/19

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 Metals - Mansfield Lab for sample(s): 01 Batch: WG1262057-1										
Mercury, Total	ND		mg/l	0.00020	--	1	07/19/19 11:15	07/19/19 13:32	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931445

Report Date: 07/21/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1261517-2								
Antimony, Total	91		-		85-115	-		
Arsenic, Total	110		-		85-115	-		
Beryllium, Total	98		-		85-115	-		
Cadmium, Total	103		-		85-115	-		
Chromium, Total	98		-		85-115	-		
Copper, Total	95		-		85-115	-		
Lead, Total	102		-		85-115	-		
Nickel, Total	101		-		85-115	-		
Selenium, Total	108		-		85-115	-		
Silver, Total	100		-		85-115	-		
Thallium, Total	98		-		85-115	-		
Zinc, Total	104		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1261517-2								
Hardness	101		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1261626-2								
Iron, Dissolved	104		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1262057-2								
Mercury, Total	114		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261517-3 QC Sample: L1929601-02 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.547	109		-	-		75-125	-		20
Arsenic, Total	ND	0.12	0.146	122		-	-		75-125	-		20
Beryllium, Total	ND	0.05	0.050	99		-	-		75-125	-		20
Cadmium, Total	ND	0.051	0.052	102		-	-		75-125	-		20
Chromium, Total	ND	0.2	0.198	99		-	-		75-125	-		20
Copper, Total	ND	0.25	0.252	101		-	-		75-125	-		20
Lead, Total	ND	0.51	0.502	98		-	-		75-125	-		20
Nickel, Total	ND	0.5	0.504	101		-	-		75-125	-		20
Selenium, Total	ND	0.12	0.137	114		-	-		75-125	-		20
Silver, Total	ND	0.05	0.051	101		-	-		75-125	-		20
Thallium, Total	ND	0.12	0.111	92		-	-		75-125	-		20
Zinc, Total	ND	0.5	0.554	111		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261517-3 QC Sample: L1929601-02 Client ID: MS Sample												
Hardness	1320	66.2	1370	76		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1261517-7 QC Sample: L1929744-02 Client ID: MS Sample									
Antimony, Total	ND	0.5	0.503	101	-	-	75-125	-	20
Arsenic, Total	ND	0.12	0.138	115	-	-	75-125	-	20
Beryllium, Total	ND	0.05	0.050	100	-	-	75-125	-	20
Cadmium, Total	ND	0.051	0.053	103	-	-	75-125	-	20
Chromium, Total	ND	0.2	0.197	98	-	-	75-125	-	20
Copper, Total	0.011	0.25	0.251	96	-	-	75-125	-	20
Lead, Total	ND	0.51	0.514	101	-	-	75-125	-	20
Nickel, Total	ND	0.5	0.494	99	-	-	75-125	-	20
Selenium, Total	ND	0.12	0.128	107	-	-	75-125	-	20
Silver, Total	ND	0.05	0.049	98	-	-	75-125	-	20
Thallium, Total	ND	0.12	0.118	98	-	-	75-125	-	20
Zinc, Total	ND	0.5	0.563	113	-	-	75-125	-	20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261517-7 QC Sample: L1929744-02 Client ID: MS Sample									
Hardness	278	66.2	347	104	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261626-3 QC Sample: L1929601-02 Client ID: MS Sample									
Iron, Dissolved	0.097	1	1.11	101	-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262057-3 QC Sample: L1931445-01 Client ID: RIVER-1									
Mercury, Total	ND	0.005	0.00523	105	-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261517-4 QC Sample: L1929601-02 Client ID: DUP Sample						
Chromium, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261517-8 QC Sample: L1929744-02 Client ID: DUP Sample						
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262057-4 QC Sample: L1931445-01 Client ID: RIVER-1						
Mercury, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

SAMPLE RESULTS

Lab ID: L1931445-01
Client ID: RIVER-1
Sample Location: 175 IPSWICH ST., BOSTON, MA

Sample Depth:
Matrix: Water

Date Collected: 07/17/19 12:00
Date Received: 07/17/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	6.9		mg/l	5.5	NA	1.1	-	07/18/19 11:40	121,2540D	DR

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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: WG1261423-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	07/18/19 11:40	121,2540D	DR

Lab Duplicate Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931445

Report Date: 07/21/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1261423-2 QC Sample: L1931596-01 Client ID: DUP Sample						
Solids, Total Suspended	83	93	mg/l	11		29

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931445
Report Date: 07/21/19

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(*)
L1931445-01A	Vial HCl preserved	A	NA		5.6	Y	Absent		624.1(14)
L1931445-01B	Vial HCl preserved	A	NA		5.6	Y	Absent		624.1(14)
L1931445-01C	Vial HCl preserved	A	NA		5.6	Y	Absent		624.1(14)
L1931445-01D	Plastic 250ml unpreserved	A	7	7	5.6	Y	Absent		-
L1931445-01E	Plastic 250ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		NI-UI(180),SB-UI(180),AG-UI(180),ZN-UI(180),SE-UI(180),HG-U(28),CD-UI(180),BE-UI(180),CR-UI(180),AS-UI(180),CU-UI(180),PB-UI(180),TL-UI(180)
L1931445-01F	Plastic 250ml HNO3 preserved	A	<2	<2	5.6	Y	Absent		HARDU(180)
L1931445-01G	Amber 250ml unpreserved	A	7	7	5.6	Y	Absent		PCB-608.3(7)
L1931445-01I	Amber 500ml unpreserved	A	7	7	5.6	Y	Absent		TPH-DRO-D(7)
L1931445-01J	Amber 500ml unpreserved	A	7	7	5.6	Y	Absent		TPH-DRO-D(7)
L1931445-01K	Amber 1000ml unpreserved	A	7	7	5.6	Y	Absent		PCB-608.3(7)
L1931445-01L	Amber 1000ml unpreserved	A	7	7	5.6	Y	Absent		625.1(7)
L1931445-01M	Amber 250ml unpreserved	A	7	7	5.6	Y	Absent		625.1(7)
L1931445-01N	Plastic 950ml unpreserved	A	7	7	5.6	Y	Absent		TSS-2540(7)
L1931445-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		5.6	Y	Absent		FE-RI(180)

*Values in parentheses indicate holding time in days

Project Name:	LEE KENNEDY	**Lab Number:**	L1931445
Project Number:	Not Specified	**Report Date:**	07/21/19

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:	LEE KENNEDY	**Lab Number:**	L1931445
Project Number:	Not Specified	**Report Date:**	07/21/19

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:	LEE KENNEDY	**Lab Number:**	L1931445
Project Number:	Not Specified	**Report Date:**	07/21/19

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.

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

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

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

Date Rec'd in Lab: 7/17/19

ALPHA Job #: L1931445

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

Client Information

Client: Axiom Partners
Address: One Pleasure Island Rd 2C, Wakefield MA 01880
Phone: 978-578-6987
Email: jmatz@axiomml.com

Additional Project Information:

Project Information

Project Name: Lee Kennedy
Project Location: 175 Ipswich St Boston MA
Project #:
Project Manager: James B. Matz
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 7/19/19 5PM

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

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

ANALYSIS

- VOC: ☐ 8260 ☒ 624 ☐ 524.2
- SVOC: ☒ ABN ☐ PAH
- METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
- METALS: ☐ RCRA5 ☐ RCRA8 ☒ PP13
- EPH: ☐ Ranges & Targets ☐ Ranges Only
- VPH: ☐ Ranges & Targets ☐ Ranges Only
- ☒ PCB ☐ PEST
- TPH: ☐ Quant Only ☒ Fingerprint
- Dissolved Fe
- TSS, hardness

SAMPLE INFO

Filtration
☐ Field
☒ Lab to do
Preservation
☐ Lab to do

Sample Comments

TOTAL # BOTTLES

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Dissolved Fe	TSS, hardness	Sample Comments	TOTAL # BOTTLES
31445-01	River-1	7/17	Noon	W	[illegible]	X	X		X			X	X	X	X		

Container Type	V	A		P			A	A	P	P	P						
Preservative	B	A		C			A	A	A	A	C						

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/17/19	[signature]	7/17/19 1444

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

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

ANALYTICAL REPORT

Lab Number:	L1931643
Client:	Axiom Partners, Inc. One Pleasure Island Road, Suite 2C Wakefield, MA 01880
ATTN:	James Matz
Phone:	(781) 213-9198
Project Name:	LEE KENNEDY
Project Number:	Not Specified
Report Date:	07/22/19

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: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931643
Report Date: 07/22/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931643-01	EXCAVATION 3	WATER	174 IPSWICH ST., BOSTON, MA	07/18/19 10:00	07/18/19

Project Name:	LEE KENNEDY	**Lab Number:**	L1931643
Project Number:	Not Specified	**Report Date:**	07/22/19

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:	LEE KENNEDY	**Lab Number:**	L1931643
Project Number:	Not Specified	**Report Date:**	07/22/19

Case Narrative (continued)

Sample Receipt

The sample was received at the laboratory above the required temperature range and was not on ice.

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: 07/22/19

METALS

Project Name: LEE KENNEDY
Lab Number: L1931643
Project Number: Not Specified
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931643-01
Client ID: EXCAVATION 3
Sample Location: 174 IPSWICH ST., BOSTON, MA
Date Collected: 07/18/19 10:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	124		mg/l	0.660	NA	1	07/19/19 09:31	07/19/19 21:55	EPA 3005A	19,200.7	AB
Dissolved Metals - Mansfield Lab											
Iron, Dissolved	ND		mg/l	0.050	--	1	07/19/19 14:33	07/20/19 00:51	EPA 3005A	19,200.7	AB

Project Name: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931643
Report Date: 07/22/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01 Batch: WG1261947-1										
Hardness	ND		mg/l	0.660	NA	1	07/19/19 09:31	07/19/19 20:54	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
Dissolved Metals - Mansfield Lab for sample(s): 01 Batch: WG1262015-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	07/19/19 14:33	07/19/19 23:43	19,200.7	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931643

Report Date: 07/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 Batch: WG1261947-2								
Hardness	107		-		85-115	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1262015-2								
Iron, Dissolved	106		-		85-115	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931643
Report Date: 07/22/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261947-3 QC Sample: L1931643-01 Client ID: EXCAVATION 3												
Hardness	124	66.2	192	103		-	-		75-125	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262015-3 QC Sample: L1931643-01 Client ID: EXCAVATION 3												
Iron, Dissolved	ND	1	1.05	105		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931643

Report Date: 07/22/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1261947-4 QC Sample: L1931643-01 Client ID: EXCAVATION 3						
Hardness	124	127	mg/l	2		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG1262015-4 QC Sample: L1931643-01 Client ID: EXCAVATION 3						
Iron, Dissolved	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931643
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931643-01
Client ID: EXCAVATION 3
Sample Location: 174 IPSWICH ST., BOSTON, MA

Sample Depth:
Matrix: Water

Date Collected: 07/18/19 10:00
Date Received: 07/18/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	07/19/19 12:30	121,2540D	DR

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931643
Report Date: 07/22/19

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: WG1261999-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	07/19/19 12:30	121,2540D	DR

Lab Duplicate Analysis

Batch Quality Control

Project Name: LEE KENNEDY

Project Number: Not Specified

Lab Number: L1931643

Report Date: 07/22/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG1261999-2 QC Sample: L1900007-127 Client ID: DUP Sample						
Solids, Total Suspended	50	44	mg/l	13		29

Project Name: LEE KENNEDY
Project Number: Not Specified

Lab Number: L1931643
Report Date: 07/22/19

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(*)
L1931643-01A	Plastic 250ml unpreserved	A	9	9	23.4	Y	Absent		-
L1931643-01B	Plastic 250ml HNO3 preserved	A	<2	<2	23.4	Y	Absent		HARDU(180)
L1931643-01C	Plastic 950ml unpreserved	A	9	9	23.4	Y	Absent		TSS-2540(7)
L1931643-01X	Plastic 120ml HNO3 preserved Filtrates	A	NA		23.4	Y	Absent		FE-RI(180)

*Values in parentheses indicate holding time in days

Project Name:	LEE KENNEDY	**Lab Number:**	L1931643
Project Number:	Not Specified	**Report Date:**	07/22/19

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:	LEE KENNEDY	**Lab Number:**	L1931643
Project Number:	Not Specified	**Report Date:**	07/22/19

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: LEE KENNEDY
Project Number: Not Specified
Lab Number: L1931643
Report Date: 07/22/19

REFERENCES

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

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

LIMITATION OF LIABILITIES

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

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

Certification Information

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

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

Date Rec'd in Lab: 7/18/19

ALPHA Job #: L19 31643

ALPHA ANALYTICAL

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

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

Client Information

Client: Axiom

Address: 1 Pleasure Island Rd 2C, Wakefield MA 01880

Phone: 978-678-5987

Email: jmatz@axiomenv.com

Project Information

Project Name: Lee Kennedy

Project Location: 174 Ipswich St Boston MA

Project #:

Project Manager: James Matz

ALPHA Quote #:

Turn-Around Time

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

Date Due: July 22, 2019

Additional Project Information:

Filter w/ in 6 hours

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☒ Yes ☐ No MA MCP Analytical Methods

☐ Yes ☐ No CT RCP Analytical Methods

☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)

☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)

☒ Yes ☐ No NPDES RGP

☐ Other State /Fed Program ____ Criteria ____

ANALYSIS: VOC: ☐ 8260 ☐ 624 ☐ 524.2; SVOC: ☐ ABN ☐ PAH; METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15; METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13; EPH: ☐ Ranges & Targets ☐ Ranges Only; VPH: ☐ Ranges & Targets ☐ Ranges Only; ☐ PCB ☐ PEST; TPH: ☐ Quant Only ☐ Fingerprint; Dissolved Fe; TSS; Hardness

SAMPLE INFO — Filtration: ☐ Field ☐ Lab to do; Preservation: ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	Dissolved Fe	TSS	Hardness	Sample Comments	TOTAL # BOTTLES
31643-01	Excavation 3	7/18	10am	W	[illegible]					

	Dissolved Fe	TSS	Hardness
Container Type	P	P	P
Preservative	A	A	C

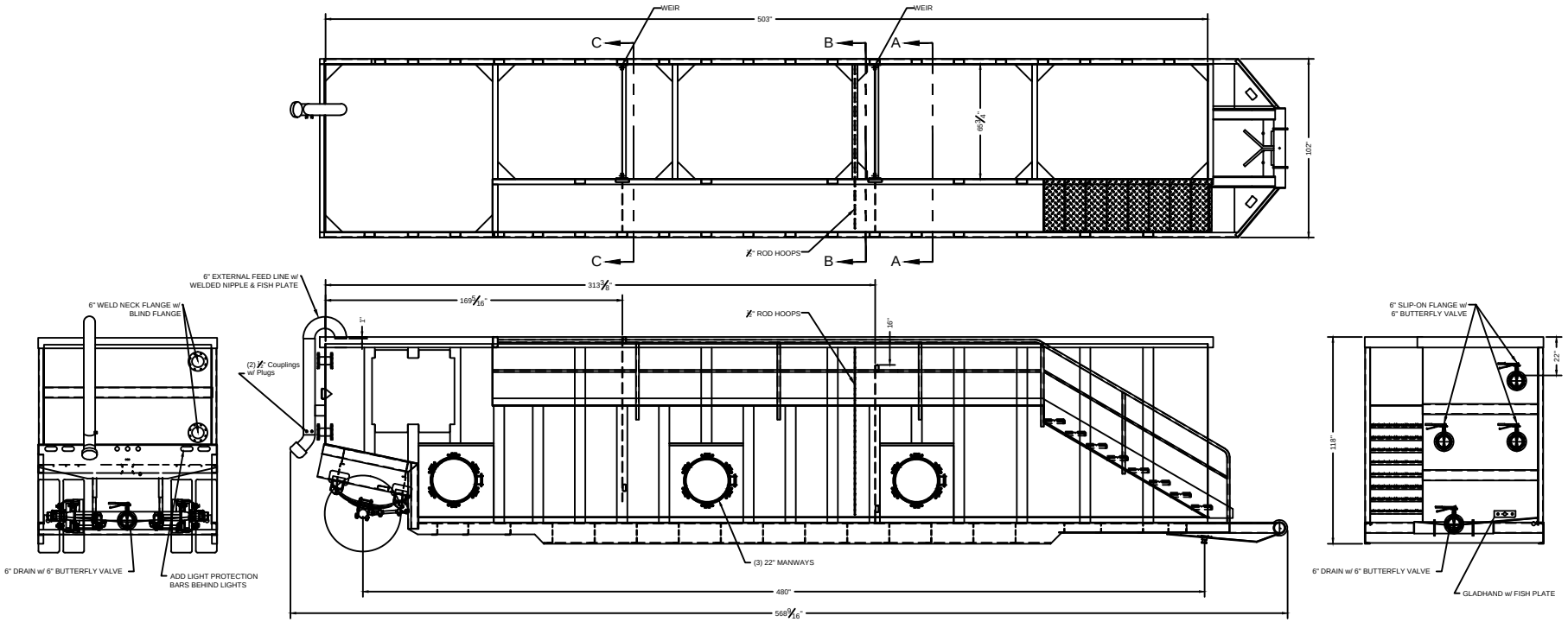
Container Type: P= Plastic, A= Amber glass, V= Vial, G= Glass, B= Bacteria cup, C= Cube, O= Other, E= Encore, D= BOD Bottle

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/18/19 1140	[signature] AAL	7/18/19 1140

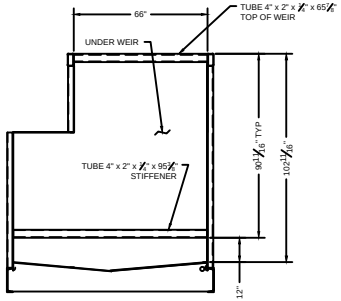
FORM NO: 01-01 (rev. 12-Mar-2012)

Appendix C:
Cutsheets

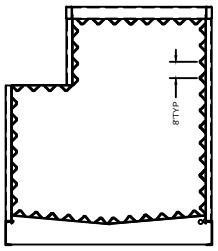


STANDARD SPECIFICATION

CAPACITY: .... 18,480 GALLONS (440 BBL)
SIDE SHEETS: .... 1/4" A36 PLATE
FRONT SHEET: .... 1/4" A36 PLATE
REAR SHEET: .... 1/4" A36 PLATE
FLOOR: .... 1/4" A36 PLATE
MAIN FLOOR RAILS: .... 12" x 20.7# STRUCTURAL CHANNEL
FLOOR CROSSMEMBERS: .... 1/4" A36 PLATE
SIDE STAKES: .... ONE PIECE 3/16" A36 PLATE
SUSPENSION: .... 3 LEAF SPRING, 22,500 LBS. CACPACITY
AXLE: .... 77.5" TRACK, 22,500 LBS. CAPACITY
TIRES: .... 11R22.5 RADIAL
WHEELS: .... 8.25 x 22.5 STEEL
MANWAYS: .... 3 - 22" DIA. CURB SIDE
VALVES: .... 3 - 6" BUTTERFLY VALVE (FRONT)
1 - 6" DRAIN BUTTERFLY VALVE (FRONT)
1 - 6" DRAIN BUTTERFLY VALVE (REAR)
2 - 6" BLIND FLANGE CONNECTION (REAR)
INLET PIPING: .... 1 - 6" PIPE SYSTEM (REAR)
BLAST: .... (INTERIOR) SSPC-SP-10 (NEAR WHITE)
(EXTERIOR) SSPC-SP-6 (COMMERCIAL BLAST)
PAINT: .... (INTERIOR) EPOXYPHENOLIC 100% SOLID 20.0 MILS D.F.T.
(EXTERIOR) FINISH COAT POLURETHANE 4.0 TO 5.0 D.F.T.



SECTION VIEW "C-C"



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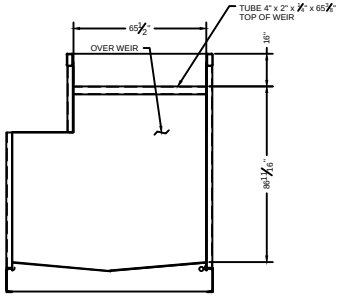
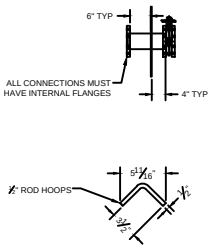


SECTION VIEW "A-A"



18,000 Gal. Weir Tank

Lockwood Remediation Technologies, LLC

89 Crawford Street
Leominster, Massachusetts 01453
O: 774-450-7177
F: 888-835-0617

Centrifugal - Single Phase

Motor Protection

All models provide built-in thermal overload protection that shuts down the pump when operating temperature becomes too high, and automatically restarts once the motor cools and a proper temperature is met.

Quality and Safety

ST Series Single Phase Pumps are in accordance with ISO9001 Quality Management System standard. Also, all Single Phase models carry the Underwriters Laboratories (UL) Listing for compliance with both U.S. or Canadian electrical safety codes.

YELLSUB

1 1/4" Discharge
33 GPM - 15' HEAD

The Yellow Submarine is MQ's most lightweight, compact submersible pump. A great choice for common household moving water applications. One piece polymer pump casing body resists corrosion and heat. Includes internal thermal overload protection, dual shaft seals, and positive direct drive thermoplastic impeller secured with stainless steel fittings.

SS233

2" Discharge
60 GPM - 20' HEAD

This lightweight, compact submersible pump is the first choice for many applications: flooded rooms, flat roofs, fill tanks, basins, fountains and waterfalls. Hardy thermoplastic pump casing body resists corrosion and heat. Further, the SS233 incorporates internal thermal overload protection, dual shaft seals, and positive direct drive thermoplastic impeller secured with stainless steel fittings.

ST2038P

2" Discharge
60 GPM - 38' HEAD

This lightweight, compact submersible pump is ideal for moving water in multiple confined and open area applications. The unique casing design permits it to draw water to a level of 1/16" without having to place the pump in any kind of sump. The ST2038P incorporates a rugged cast aluminum housing, internal thermal overload protection, and sealed dual shaft seals and bearings .

ST2037

2" Discharge
73 GPM - 37' HEAD

The ST2037 incorporates a rugged cast aluminum housing, internal thermal overload protection, dual shaft seals, sealed ball bearings impeller and molded 25' Power Cable with strain relief. This is a powerful, versatile, low maintenance pump that is perfect for a wide range of operations supporting Contractors Service Utilities, Municipalities, and Homeowners.

ST2047

2" Discharge
87 GPM - 47' HEAD

A compact, powerful pump that tackles tough dewatering jobs. Perfect for Contractors, Service Utilities, Municipalities, and Homeowners. The ST2047 incorporates a rugged cast aluminum housing, internal thermal overload protection, dual shaft seals, sealed ball bearings impeller and molded 50' Power Cable with strain relief.

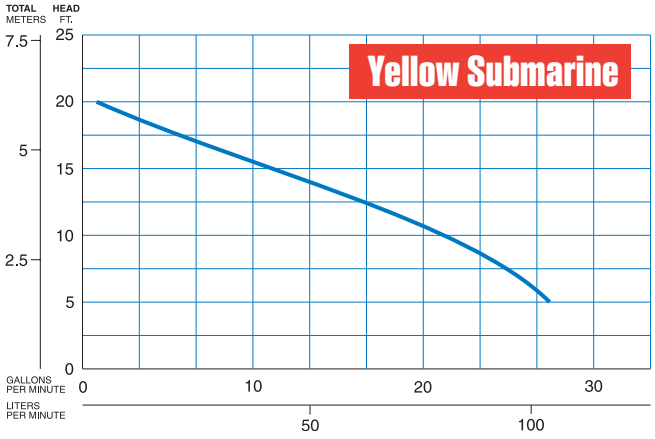
ST3020BCUL

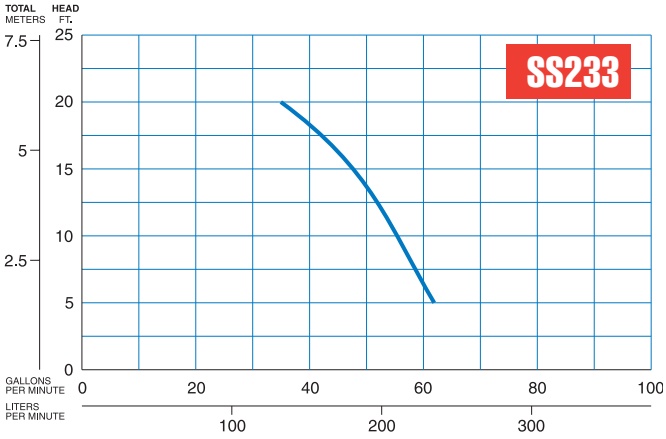
3" Discharge
170 GPM - 72' HEAD

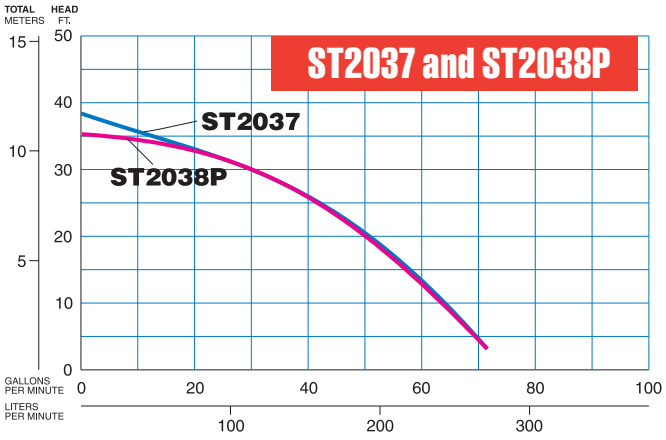
This is a rugged 2HP 230V pump with a heat conducting cast iron/steel motor casing. Pumps liquid up to 120° and de-waters surfaces up to 1/2. The ST3020BCUL incorporates reliable double mechanical oil-filled seals, internal thermal overload protection, sealed ball bearings, Ductile Iron impeller, carrying handle, and molded 50' Power Cable with strain relief. The 6.7" diameter design permits the pump to fit into tight spaces & conduits.

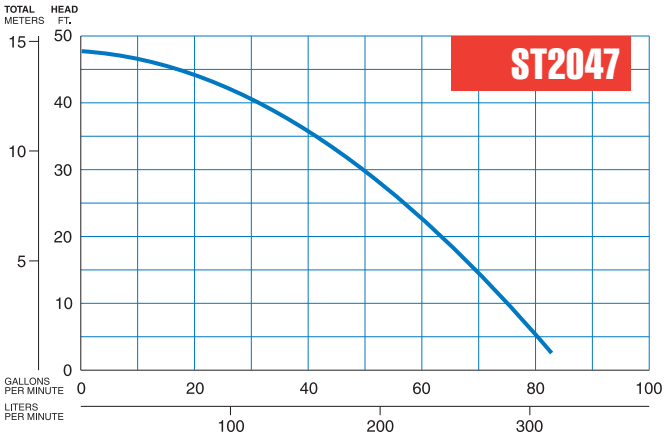
*** All Multiquip single phase submersible pumps do not require a Control Box for safe, efficient operations. However, a Control Box may be desired if operations call for a manual ON/OFF Switch option.**

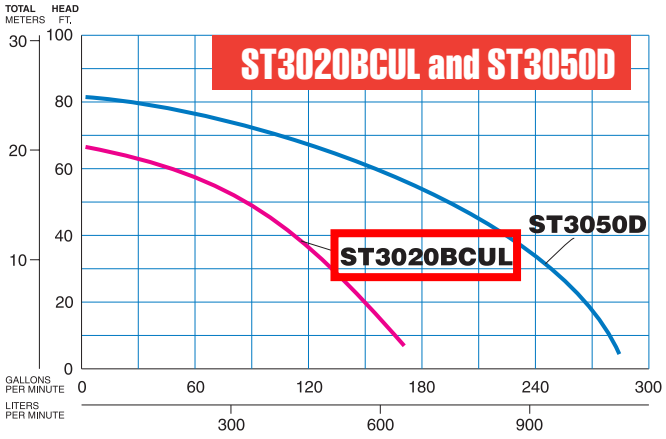
Pump Performance Curves

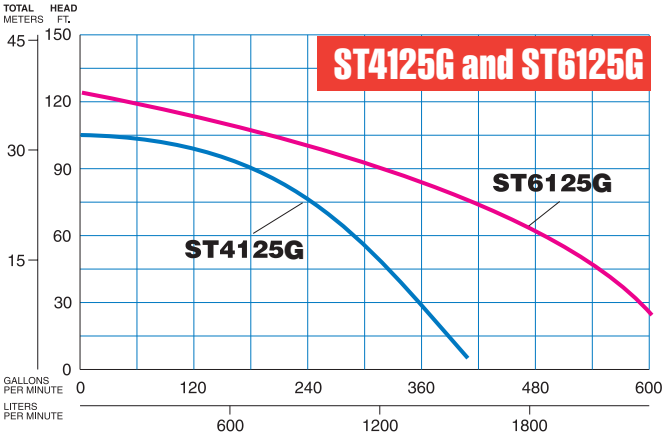


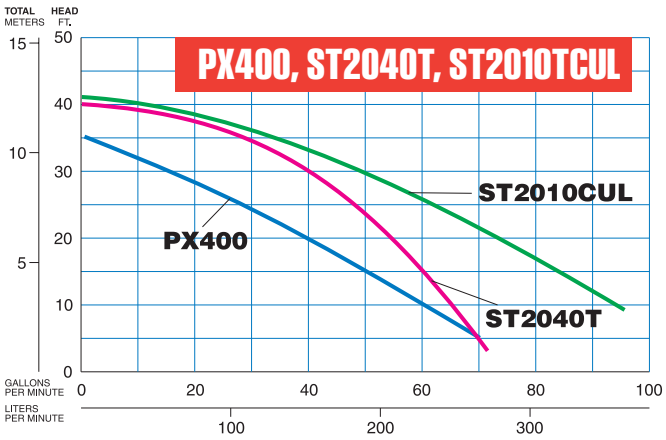












Polyester Liquid Filter Bag

Features

* Polyester liquid bag filter are available with a carbon steel ring, stainless steel ring or plastic flanges.
* Heavy-duty handle eases installation and removal
* Metal ring sewn into bag top for increased durability and positive sealing
* Wide array of media fibers to meet needed temperature and micron specifications

Applications

Polyester liquid filter bags can be used in the filtering of a wide array of industrial and commercial process fluids

Sizes

Our liquid filter bags are available for all common liquid bag housings. Dimensions range from 4.12" diameter X 8" length thru 9" diameter X 32" length.

Micron Ratings

Available fibers range from 1 to 1500 microns

Options

* Bag finish or covers for strict migration requirements.
* Plastic top O.E.M. replacements
* Multi-layered filtering capabilities for higher dirt holding capacities

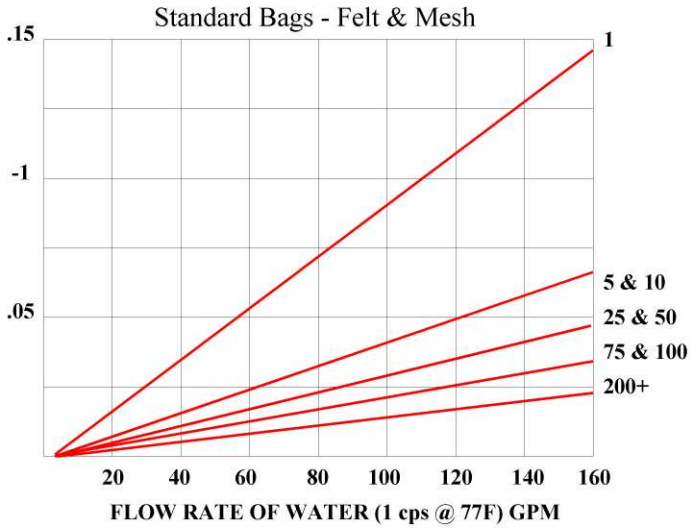
Optional Filter Media

Felt: Nomex, Polyester, Polypropylene

Monofilament: Nylon, Polyester, Polypropylene

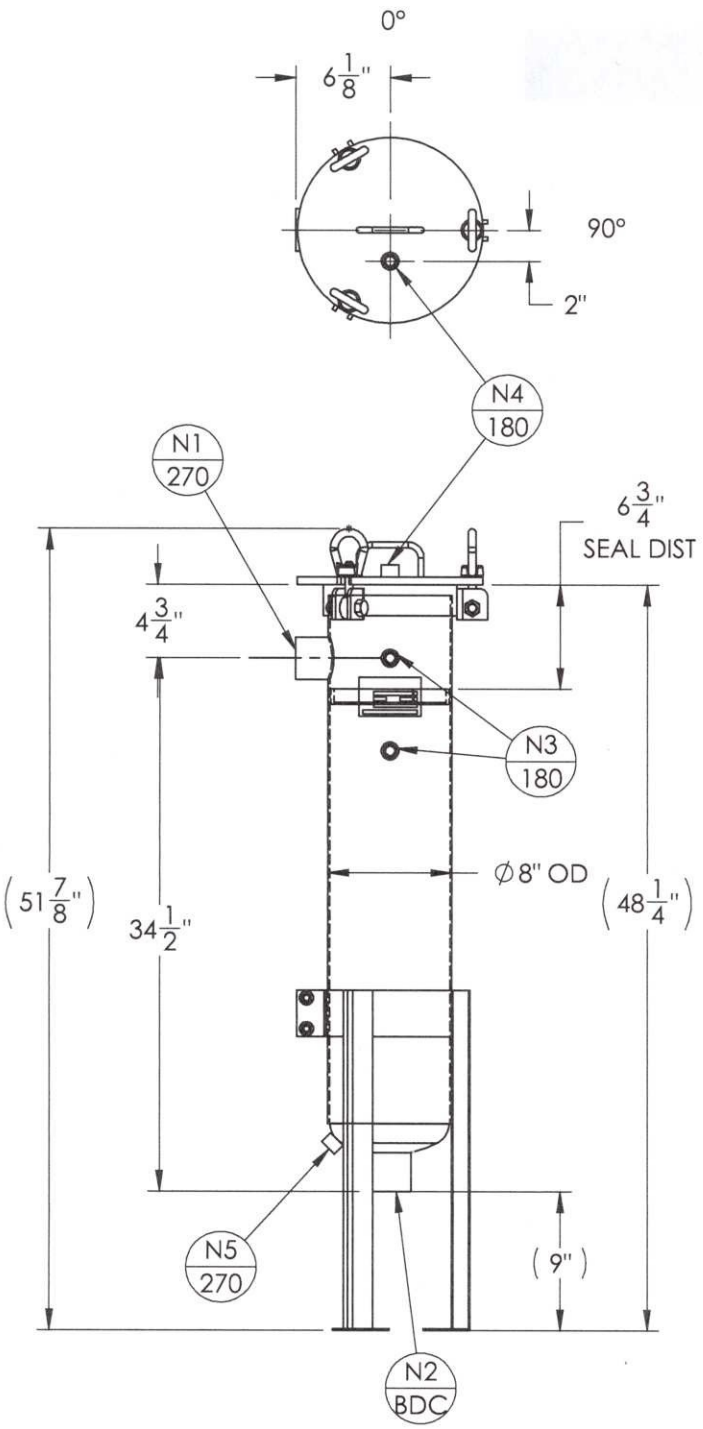
Multifilament: Nylon, Polyester

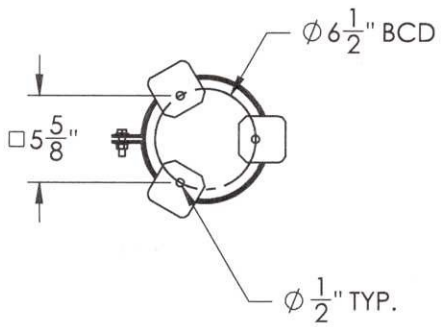
Polypropylene: Oil Removal



NOZZLE SCHEDULE			
MARK	QTY	SIZE / RATING	DESCRIPTION
N1	1	2" 150# NPT	INLET
N2	1	2" 150# NPT	OUTLET
N3	2	1/2" 3000# NPT	PRESS GA
N4	1	1/2" 3000# NPT	VENT
N5	1	1/2" 3000# NPT	CLEAN DRAIN
N6	-	-	DIRTY DRAIN

VESSEL DESIGN CONDITIONS			
CODE:	BEST COMMERCIAL PRACTICE		
M.A.W.P.:	150 PSI @ 250°F	M.D.M.T.:	-20° F @ 150 PSI
M.A.E.P.:	15 PSI @ 250°F		
CORROSION ALLOWANCE:	NONE	HYDROTEST PRESS:	195 PSI
STAMP:	'NC'	SERVICE:	NON LETHAL
PWHT:	N/A	RADIOGRAPHY:	N/A
MATERIAL:	SS 304/L	GASKET:	BUNA-N





DRY WEIGHT: 77.62 #'s
FLOODED WEIGHT: 140 #'s
SHIPPING WEIGHT: 100 #'s
VESSEL VOLUME: 1.0 C.F.

NOTES:
- VESSEL WILL HOUSE (QTY=1) DOUBLE LENGTH BASKET.

1:1

THIRD ANGLE PROJECTION

TOLERANCES-UNLESS OTHERWISE NOTED
DECIMAL .X =±.1" .XX =±.02" .XXX =±.005"
FRACTIONAL ≤24" =±1/16" >24" =±1/8"
ANGULAR =± 1°
MAX. MACHINED SURFACE FINISH 125

REV.	DATE	REVISION	DRAWN	APP'D

89 Crawford Street
Leominster, MA 01453
Tel: 774.450.7177
Fax: 888.835.0617

LRT Provided Bag Filter Housing

EQUIPMENT:	BAG FILTER HOUSING (EB SERIES)
MODEL NO:	S4EB112-2P-SW
CUSTOMER:	-

PARENT: NONE	DRAWN: CR	DATE: JAN 13 2011	JOB No. V-	DWG. No. 001-0123	REV. No. 0
PAGE: 1 OF 4	CHK'D: JM	SCALE: NTS			

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

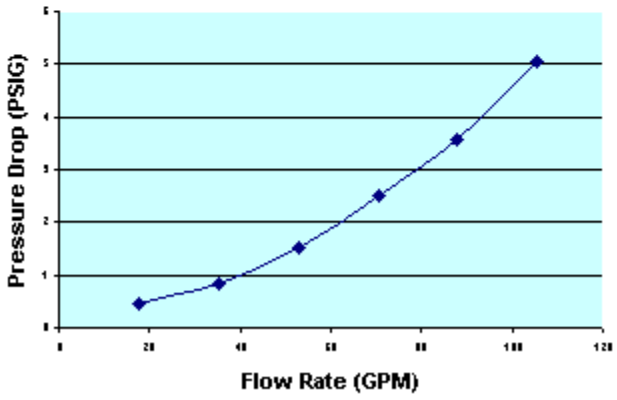
HPAF SERIES FILTERS
MODEL HPAF-2000

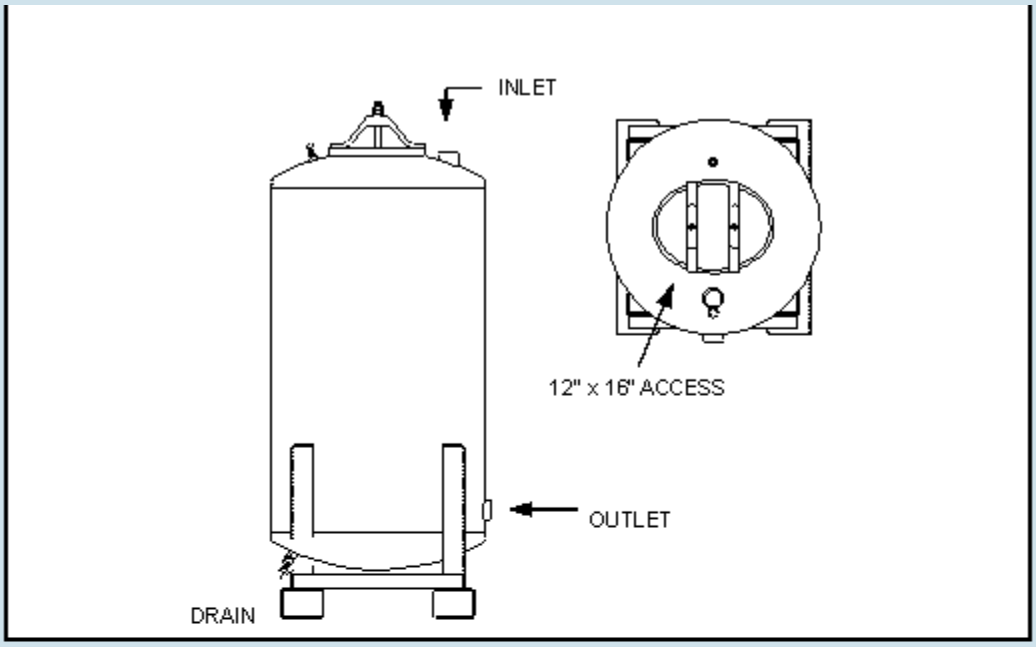
The HPAF-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

- Dissolved Organic Removal (Activated Carbon)
- Suspended Solids Removal (Sand Filter)
- Dissolved Minerals (Softener Resin)
- Oil and Grease Removal (Organo-Clays)
- Dissolved and Precipitated Metals Removal
- Special Organics (Resin/Carbon Blend)
- Catalytic Reactor (Chlorine and Peroxide Removal)
- Bio-Remediation Contactor Unit

PRESSURE DROP GRAPH

*(As Filled - 8*30 GAC)*





HPAF-2000 SPECIFICATIONS			
Overall Height	8'6"	Vessel/Internal Piping Materials	CS (SA-36) / SCH 40 PVC
Diameter	48"	Internal Coating	Polyamide Epoxy Resin
Inlet / Outlet (FNPT)	3"	External Coating	Epoxy Mastic
Drain / Vent (FNPT)	3/4" / 1/2"	Maximum Pressure / Temp	75 PSIG / 140° F
GAC Fill (lbs)	2,000	Cross Sectional Bed Area	12.5 FT^2
Shipping / Operational Weight (lbs)	1,295 / 3,295	Bed Depth/Volume	5.5 FT / 68.7 FT^3

89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

GC 8x30

Granular Activated Carbon

GC 8x30 is a virgin activated carbon, which is granular in form. Made from the finest grades of bituminous coal, it is ideal for many liquid phase applications including the removal of organics from wastewater streams. NSF certified, it is suitable for drinking water and food grade applications.

Specifications

Mesh Size - 8x30, %:	90 (min)
Less than No. 8, %:	5 (max)
Greater than No. 30, %:	5 (max)
Iodine No., mg/g:	900 (min)
Surface Area, m^2/g:	900 (min)
Hardness, %:	90 (min)
Ash Content, %:	12 (max)
Moisture, % (as packaged):	5.0 (max)
Typical Density, $lbs./ft.^3$:	29-33
g/cc:	0.47-0.53

*Standard packaging is in 55 or 1100 lb. vinyl bags. Other packaging is available upon request.

CAUTION!

Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels. Confined space/low oxygen procedures should be put in place before any entry is made. Such procedures should comply with all applicable Local, State and Federal guidelines.

89 Crawford Street
Leominster, MA 01453
Tel: 774.450.7177
Fax: 888.835.0617
www.lrt-llc.net

SAFETY DATA SHEET

Revision Date: 11/11

1.1 IDENTIFICATION OF PRODUCT.

Designation: - Activated carbon

1.2 COMPANY.

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453

Phone: 774-450-7177
Fax: 888-835-0617

2 HAZARDOUS AND OTHER INGREDIENTS.

Exposure limits may vary. It is recommended that information about locally applicable exposure limits be obtained.

%w/w	Compound	CAS No	MAK mg/m^3 (Germany)	TLV mg/m^3 (ACGIH)	PEL mg/m^3 (OSHA)
100	Bituminous Carbon	7440-44-0	T Dust	T dust	15 mg/m3

3 PHYSICAL DATA.

State:	Solid
Appearance:	Black granule, extradite, or powder
pH:	Not applicable
Boiling point or range:	Sublimes
Melting point or range:	3550 C (6422 F)
Vapor pressure:	1 @3586 C (6487 F)
Vapor density:	0.4
Density relative to water:	1.5 – 1.8 Specific gravity
Solubility in water:	Insoluble in water
Partition coefficient: (n-octanol/water):	
Other data:	odorless

4 FIRE AND EXPLOSION HAZARD DATA.

Fire, explosion and reactivity hazards:	Flammable.
Flammability and flammability limits:	Flammable.
Autoflammability:	Not applicable.
Explosive properties:	Non explosive.
Oxidizing properties:	Non oxidizing.

Fire fighting measures:
As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:
Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Minimum explosible concentration 0.140 g/l.

Fire Extinguishing Media:
Water or water spray.

Unusual Fire and Explosion Hazards:
Contact with strong oxidize such as ozone, liquid oxygen, chlorine, permanganate, etc., may result in fire.

Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

5 STABILITY AND REACTIVITY DATA.

The product is stable under normal handling and storage conditions.

Conditions to avoid:	Incompatibilities.
Materials to avoid:	Liquid air and oxidizing materials. Strong oxidizers such as ozone, liquid oxygen, chlorine, permanganate, etc
Hazardous decomposition products:	Involvement in a fire causes formation of carbon dioxide and carbon monoxide.

Emergency Overview

WARNING! FLAMMABLE SOLID. ACTIVATED CARBON AFFECTS THE RESPIRATORY AND CARDIOVASCULAR SYSTEMS.

CAUTION!!! Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal regulations.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 1 - Slight
Flammability Rating: 3 - Severe (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES; LAB COAT; CLASS B EXTINGUISHER
Storage Color Code: Orange (General Storage)

Potential Health Effects

Inhalation:
May cause mild irritation to the respiratory tract. The acute inhalation LC50 (Rat) is >64.4 mg/l (nominal concentration) for activated carbon.

Ingestion:
No adverse effects expected. May cause mild irritation to the gastrointestinal tract. The acute oral LD50 (Rat) is >10g/kg.

Skin Contact:
Not expected to be a health hazard from skin exposure. May cause mild irritation and redness. The primary skin irritation index (Rabbit) is 0.

Eye Contact:
No adverse effects expected. May cause mild irritation, possible reddening.

Chronic Exposure:
Prolonged inhalation of excessive dust may produce pulmonary disorders. The effects of long-term, low-level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the avoidance of all effects from repetitive acute exposures.

Aggravation of Pre-existing Conditions:
No information found.

6. First Aid Measures

Inhalation:
Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:
Give several glasses of water to drink to dilute. If large amounts were swallowed, seek medical attention.

Skin Contact:
Not expected to require first aid measures. Wash exposed area with soap and water. Seek medical attention if irritation develops.

Eye Contact:
Wash thoroughly with running water for at least 15 minutes. Seek medical attention if irritation develops.

7. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. Warning! Spent product may have absorbed hazardous materials.

8. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

CAUTION!! Wet activated carbon removes oxygen from air causing a severe hazard to workers inside carbon vessels and enclosed or confined spaces. Before entering such an area, sampling and work procedures for low oxygen levels should be taken to ensure ample oxygen availability, observing all local, state, and federal or national regulations.

9. Exposure Controls/Personal Protection

Exposure Guidelines:
OSHA PEL*:
5mg/M3 (Respirable)
ACGIH TLV*:
10 mg/M3 (Total)
*PELs and TLVs are 8-hour TWAs unless otherwise noted.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):
For conditions of use where exposure to the dust or mist is apparent, a half-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:
Wear protective gloves and clean body-covering clothing.

Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

10. Toxicological Information

Investigated as a reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Activated Carbon (7440-44-0)	No	No	None

11. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

12. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

13. Transport Information

Proper Shipping Name:
NOT REGULATED
Hazard Class:
N/A
Identification Number:
N/A
Packing Group:
N/A
This product has been tested according to the United Nations *Transport of Dangerous Goods* test protocol for spontaneously combustible materials. It has been specifically determined that this product does not meet the definition of a self heating substance or any hazard class, and therefore is not a hazardous material and not regulated.

14. Regulatory Information

SARA TITLE III:
N/A
TSCA:
The ingredients of this product are on the TSCA Inventory List.
OSHA:
Nonhazardous according to definitions of health hazard and physical hazard provided in the Hazard Communication Standard (29 CFR 1910.1200)
CANADA

WHMIS CLASSIFICATION:
Not Classified
DSL#:
6798
EEC
Council Directives relating to the classification, packaging, and labeling of dangerous substances and preparations.
Risk (R) and Safety (S) phrases:
May be irritating to eyes (R36).

15. Other Information

NFPA Ratings: Health: 0 **Flammability:** 1 **Reactivity:** 0

Label Hazard Warning:
WARNING! FLAMMABLE SOLID. ACTIVATED CARBON AFFECTS THE RESPIRATORY AND CARDIOVASCULAR SYSTEMS.

Label Precautions:
Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

Label First Aid:
If inhaled, remove to fresh air. Get medical attention for any breathing difficulty.

GROOVED & SMOOTH-END FLOWMETER MODEL MG/MS100

SPECIFICATIONS

PERFORMANCE

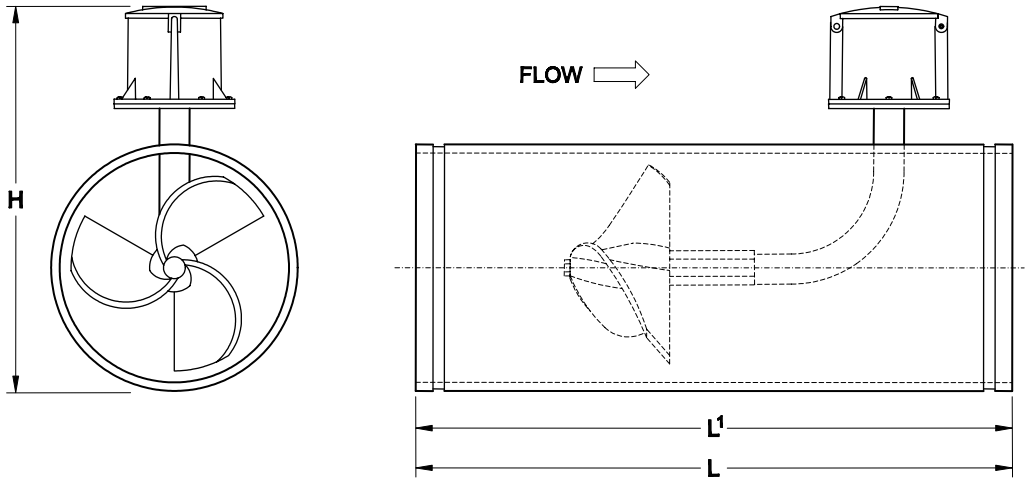
ACCURACY/REPEATABILITY: ±2% of reading guaranteed throughout full range. ±1% over reduced range. Repeatability 0.25% or better.
RANGE: (see dimensions chart below)
HEAD LOSS: (see dimensions chart below)
MAXIMUM TEMPERATURE: (Standard Construction) 160°F constant
PRESSURE RATING: 150 psi

MATERIALS

TUBE: Epoxy-coated carbon steel.
BEARING ASSEMBLY: Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel.
MAGNETS: (Permanent type) Cast or sintered alnico
BEARING HOUSING: Brass; Stainless Steel optional
IMPELLER: Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter. High temperature impeller is optional.
REGISTER: An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged lens cover with locking hasp.
COATING: Fusion-bonded epoxy

OPTIONS

- Forward/reverse flow measurement
- High temperature construction
- "Over Run" bearing assembly for higher-than-normal flowrates
- Electronic Propeller Meter available in all sizes of this model
- A complete line of flow recording/control instrumentation
- Straightening vanes and register extensions available
- Certified calibration test results



McCrometer reserves the right to change design or specifications without notice.

MG100 / MS100	DIMENSIONS												
Meter Size (inches)	**2**	**2 ½**	**3**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**24**
Maximum Flow U.S. GPM	250	250	250	600	1200	1500	1800	2500	3000	4000	5000	6000	8500
Minimum Flow U.S. GPM	40	40	40	50	90	100	125	150	250	275	400	475	700
Head Loss in Inches at Max. Flow	29.50	29.50	29.50	23.00	17.00	6.75	3.75	2.75	2.00	1.75	1.50	1.25	1.00
Shipping Weight, lbs.	* See Special Note		17	40	54	68	87	106	140	144	172	181	223
H (inches)			10.9	12.78	13.84	14.84	16.91	18.90	20.53	22.53	25.53	26.53	30.53
L (inches) MG100			13	20	20	20	20	20	20	22	22	22	22
L^1 (inches) MS100			13	20	22	22	22	22	22	24	24	24	24
O.D. of Meter Tube			3.50	4.500	6.625	8.625	10.750	12.750	14.00	16.00	18.00	20.00	24.00

Special Note—
Reducing fittings incorporating grooves are supplied to adapt the 3-inch model to smaller line sizes.

Larger flowmeters on special order.

LB Series

Top discharge provides maximum motor cooling while allowing continuous duty operation.

Available in single-phase or three-phase. Pumps fit into 8-inch pipes.

LB Series Features

LB(T)-1500:

High chrome semi-open impeller resists wear for adhesive particles.

Diode motor protectors prevent stator damage in high amperage or run-dry situations.

Up to 70' shut off head

Slimline design allows pumps to fit into 8" pipes.

LB Series Features

LB-800:

Designed to fit an 8" pipe.

Up to 60' shut off head.

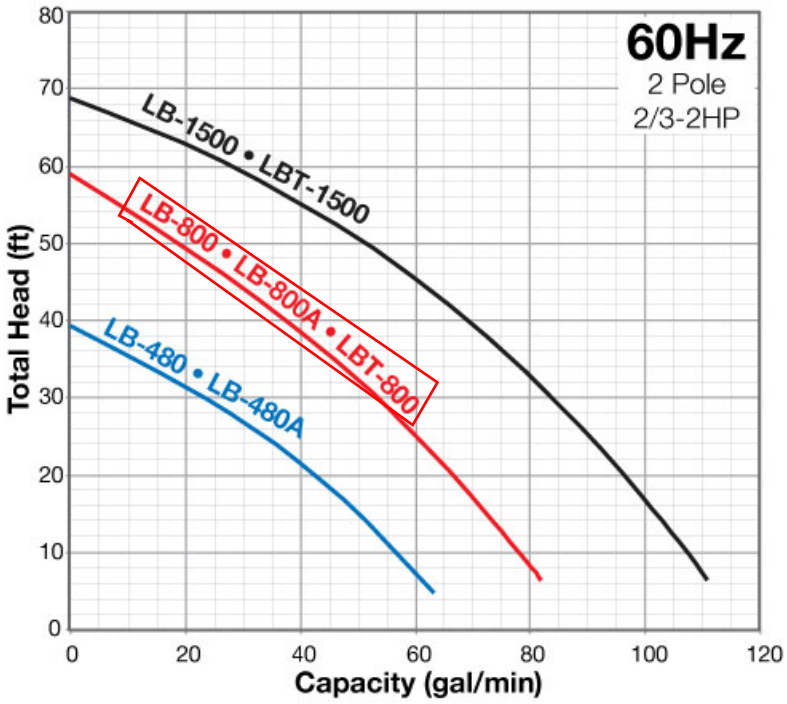
Available in 110V and 220V single-phase with 50 foot cables.

Double Inside Mechanical Seal With SiC faces provides the longest operational life.

Oil Lifter provides lubrication of the seal faces.

OPTIONAL ACCESSORIES
Float Switch for automatic operation
TS-302 for 110V, TS-303 for 220V.

Performance Range



Model	Discharge Size (in.)	Motor Output (HP)	Voltage (V)	Cable Length (ft.)	Diameter (in.)	Height (in.)	Weight (lbs.)
LB-1500	3	2	110V or 220V	50	7 3/8	23 5/16	72
LB-480	2	2/3	110V	32	7 3/8	11 1/4	28
LB-480A	2	2/3	110V	32	8 3/4	11 1/4	30
LB-800	2	1	115V or 230V	50	7 3/8	13 7/16	35
LB-800A	2	1	115 or 230	50	8 3/4	23 5/16	38
LBT-1500	2 or 3	2	230 or 460 or 575V	50	7 3/8	23 5/16	85
LBT-800	2	1	230 or 460 or 575V	50	7 3/8	13 7/16	35

Appendix D: Supplementary information

MassDEP - Bureau of Waste Site Cleanup

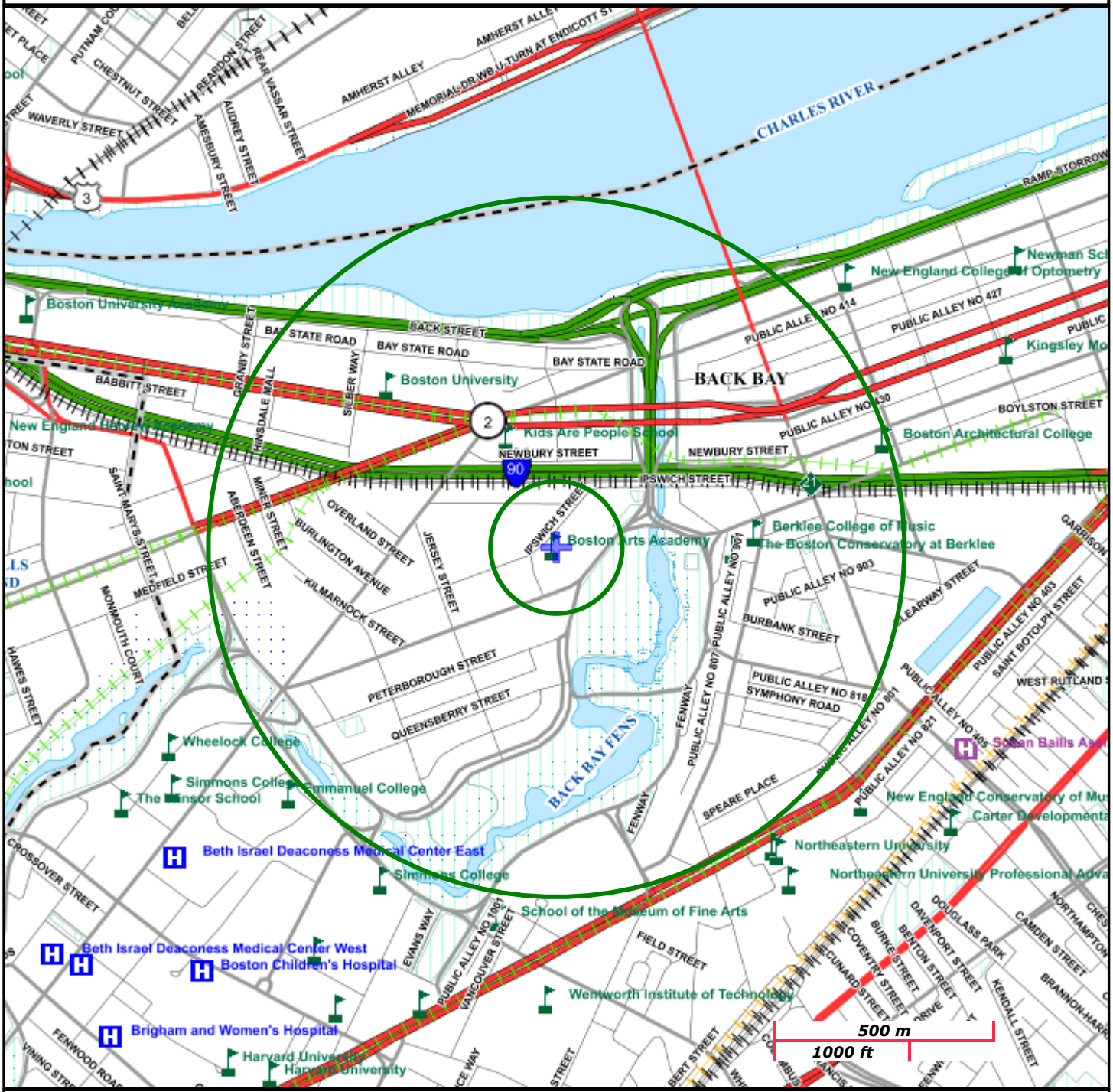
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
BOSTON ARTS ACADEMY
174 IPSWICH STREET BOSTON, MA

NAD83 UTM Meters:
4690347mN , 327439mE (Zone: 19)
July 1, 2019

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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

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

Aquifers: Medium Yield, High Yield, EPA Sole Source

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

PWS Protection Areas: Zone II, IWPA, Zone A

Hydrography: Open Water, PWS Reservoir, Tidal Flat

Wetlands: Freshwater, Saltwater, Cranberry Bog

FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

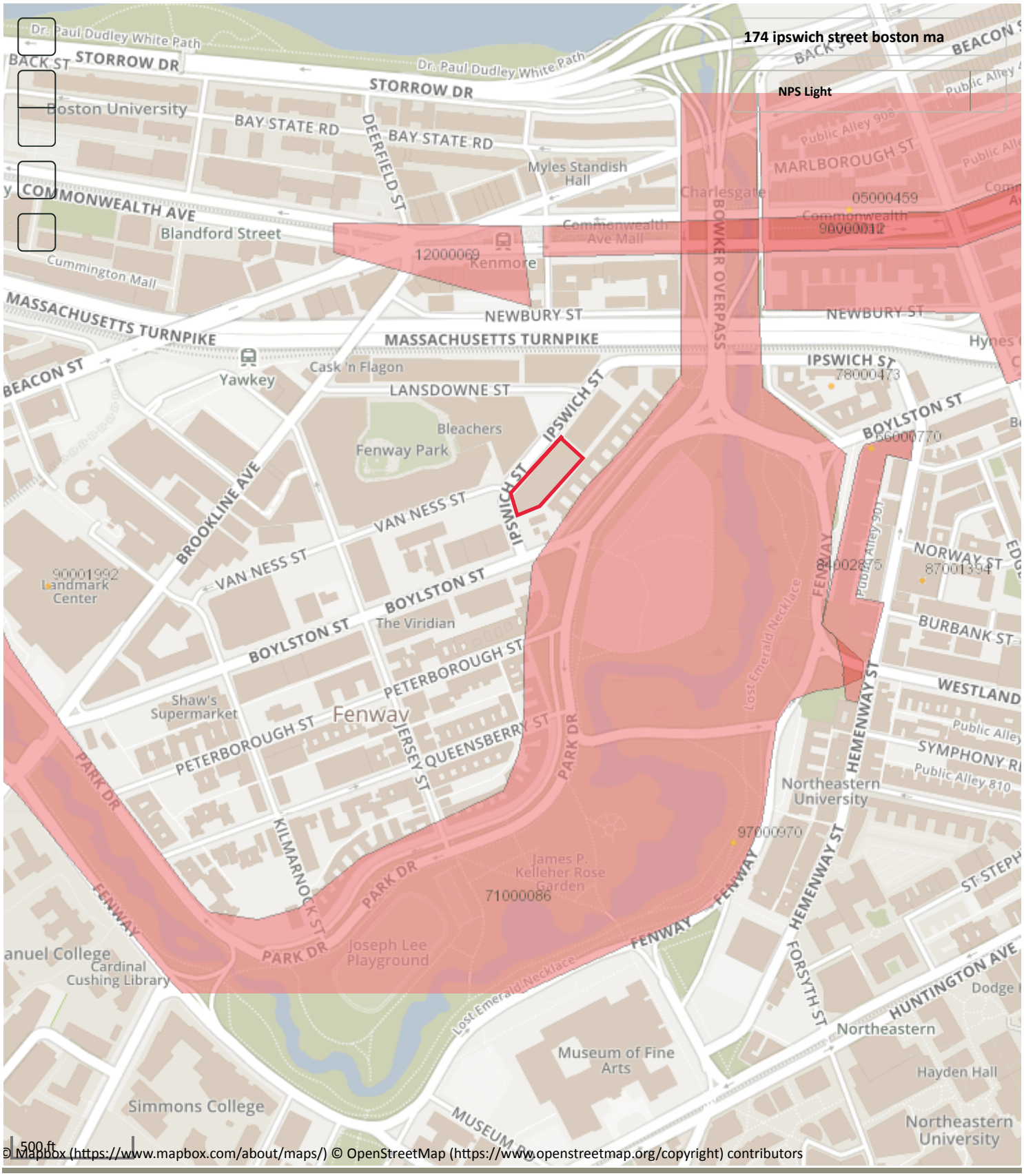
Documentation of the National Historic Preservation Act Eligibility Determination:

As part of this permit, a determination was made as to whether there were any historic properties or places listed on the national register in the path of the discharge or in the vicinity of the construction of treatment systems or BMPs related to the discharge. A search on the Massachusetts Cultural Resource Information System Database and the National Register of Historic Places did not list any potential historic properties on or near the project site in the databases. Therefore, the proposed discharge will not have the potential to cause effects on historical properties.

National Register of Histori...

National Park Service
U.S. Department of the Interior

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



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston; Street No: 174; Street Name: Ipswich; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year

Documentation of the Results of the ESA Eligibility Determination:

Using information in Appendix II of the NPDES RGP, the project located at 174 Ipswich Street, Boston, MA is eligible for coverage under this general permit under FWS Criterion A. This project is located in Suffolk County. No designated critical habitats were listed in the project area. An Endangered Species Consultation was conducted on the U.S. Fish & Wildlife Service New England Field Office ECOS IPaC webpage for the Site:

No Endangered species found at this location.

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-2146
Event Code: 05E1NE00-2019-E-05402
Project Name: Boston Arts Academy

July 01, 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-2146

Event Code: 05E1NE00-2019-E-05402

Project Name: Boston Arts Academy

Project Type: Water Withdrawal / Depletion

Project Description: Site demolition and reconstruction of a portion of the Boston Arts Academy.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.346161145449386N71.09515017664098W

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.

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

DEWATERING DISCHARGE PERMIT APPLICATION

OWNER / AUTHORIZED APPLICANT PROVIDE INFORMATION HERE:

Company Name: LRT Address: 89 Crawford Street Leominster MA

Phone Number: (774) 450-7177 Fax number: _____

Contact person name: Kim Gravelle Title: Senior Project Manager

Cell number: (774) 479-1048 Email address: kgravelle@lrt-llc.net

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

Owner's Information (if different from above):

Owner of property being dewatered: City of Boston

Owner's mailing address: 26 Court Street, 10th Floor, Boston, MA Phone number: 617-635-0536

Location of Discharge & Proposed Treatment System(s):

Street number and name: 174 Ipswich Street Neighborhood _____

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

Describe Proposed Pre-Treatment System(s): Wier Tank, Bag Filtration, Reactivated Carbon

BWSC Outfall No. 042 Receiving Waters Charles River

Temporary Discharges (Provide Anticipated Dates of Discharge): From 08/20/2019 To 08/20/2020

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

Permanent Discharges

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

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

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

Signature of Authorized Representative for Property Owner: _____ Date: _____