LIGHTSHIP
ENGINEERING

ASSESSMENT AND REMEDIATION • CIVIL ENGINEERING • ENERGY MANAGEMENT • WATER AND WASTEWATER MANAGEMENT • PERMITTING

August 13, 2018

USEPA NPDES Program
RGP NOI Processing
5 Post Office Square, Suite 100
Boston, Massachusetts 02109 - 3912

RE: Notice of Intent
NPDES Remediation General Permit
HEEC Land Cable Project
Deer Island, Massachusetts
Lightship Project. No. 500.98.12

To Whom It May Concern:

On behalf of Harbor Electric Energy Company, a wholly owned subsidiary of NSTAR Electric Company d/b/a Eversource Energy ("HEEC"), Lightship Engineering, LLC ("Lightship Engineering") has prepared this Notice of Intent ("NOI") for coverage under the National Pollutant Discharge Elimination System ("NPDES") Remediation General Permit ("RGP") for Massachusetts and New Hampshire, dated April 2017 (the "NPDES RGP"). The completed NOI form is provided at Attachment A. This NOI is associated with proposed construction dewatering activities at Deer Island, Massachusetts. A Site Locus Map is provided at Figure 1, Attachment B.

Background and Regulatory Information

HEEC is currently installing a new electric cable to service the Massachusetts Water Resources Authority ("MWRA") Deer Island Wastewater Treatment Plant. This new cable will replace the existing cable currently servicing Deer Island. The new cable route begins at the K Street substation in South Boston where the existing groundwater treatment system is located. The cable crosses eastward through Massachusetts Port Authority ("Massport") Conley Terminal, enters Boston Harbor at the east end of Conley Terminal, and crosses Boston Harbor eventually making landfall at Deer Island. This electric line will be the primary electric supply line to Deer Island. This electric cable facilitates the operations of the Deer Island plant to remove human, household, business, and industrial pollutants from wastewater that originates in homes and businesses in 43 greater Boston communities. It is the second largest treatment plant in the United States. The new electric line includes the installation of one manhole on Deer Island that will likely require dewatering for approximately one to two months. To meet the aggressive project schedule required by state and federal agencies, the Deer Island portion of this work (including manhole installation) needs to commence in September 2018.

A release of oil and/or hazardous materials ("OHM") occurred at the Site as a result of the historic operations a military base and wastewater treatment plant that is the subject of the Commonwealth of Massachusetts Department of Environmental Protection ("MassDEP") Release Tracking Number ("RTN") 3-1283. The historic releases of OHM that occurred at the Site, included petroleum related compounds, volatile organic compounds, polynuclear aromatic compounds and select metals. Response actions reportedly resulted in a level of No Significant Risk as defined by the Massachusetts Contingency Plan ("MCP"), 310 CMR 40.0000, with the implementation of an Activity and Use Limitation ("AUL") to restrict the Site to non-residential use that prohibits the cultivation of crops for consumptive purposes.

Construction Details

Based on information provided by HEEC, a transition manhole will be installed on Deer Island at the location indicated on Figure 2, Attachment B. The transition manhole is where the submarine cable connects to the land portion of the new electric line. Installation of the transition manhole and subsequent conduit installation (submarine and land portion) will require dewatering to support construction activities. Construction groundwater dewatering and stormwater will be collected and treated with an on-Site wastewater treatment system and discharged to Boston Harbor via one or more catch basins at the locations indicated on Figure 2, Attachment B.

Owner and Operator Information

HEEC is the owner of the proposed electrical conduit, the MWRA operates the Site and Clean Harbors Environmental Services ("CHES") will operate the wastewater treatment system, with compliance sampling and reporting conducted by Lightship Engineering. Contact information for all parties is set forth below.

HEEC – Owner of Proposed Electrical Conduit

HEEC
247 Station Drive, SE 2122
Westwood, Massachusetts 02090
Contact: Matthew Waldrip
781-441-8247
Matthew.Waldrip@Eversource.com

MWRA – Site Operator

Massachusetts Water Resources Authority
190 Tafts Avenue
Winthrop, Massachusetts 02152
Contact: Richard Adams
Manager, Engineering Services
617-242-6000
Richard.Adams@MWRA.com

CHES – Wastewater Treatment System Operator

Clean Harbors Environmental Services
609 Pleasant Street
Weymouth, Massachusetts 02189
Contact: Robert Paul
Field Service Specialist
781-803-4100
PaulB@CleanHarbors.com

Lightship Engineering – Compliance Sampling and Reporting

Lightship Engineering, LLC
39 Industrial Park Road, Unit C
Plymouth, Massachusetts 02360
Contact: Kevin Paradise
Senior Project Manager
617-594-5094
KParadise@LightshipEngineering.com

Receiving Water Quality

On August 1, 2018, Lightship Engineering collected a surface water sample (LE-SW-1) from the receiving water body (Boston Harbor) at the location indicated on Figure 2, Attachment B. Consistent with the NPDES RGP, the receiving water sample (LE-SW-1) was collected and submitted to a Commonwealth of Massachusetts certified analytical laboratory for salinity, ammonia and select total metals analyses. The results of the receiving water sampling are set forth in Table 1, Attachment C and a copy of the laboratory analytical data package is provided at Attachment D. In addition, the surface water was field screened for pH (7.95 S.U.) and temperature (21.6 degrees Celsius).

Source Water Information

As set forth above, source water will be a combination of construction groundwater dewatering and stormwater. On May 2, 2018, Lightship Engineering advanced soil boring LE-SB8 at the location of the proposed transition manhole at the location indicated on Figure 2, Attachment B. The soil boring was advanced to approximately 20 feet below grade using direct push drilling Methodology consistent with MassDEP's *Standard References for Monitoring Wells* ("Standard References"). Prior to advancing the soil borings, the soil boring was pre-cleared up to five feet below grade with an air-knife and vacuum truck.

Soil boring LE-SB8 was completed as temporary groundwater monitoring well LE-TMW6 with 10 feet of 0.010-inch slot screen PVC set to bisect the groundwater table, consistent with Standard References. Prior to sampling, five well volumes of groundwater were purged from the temporary groundwater monitoring well using the low flow purging methodology, consistent with Standard References. A groundwater sample was collected from the temporary groundwater monitoring well LE-TMW6 and submitted to a Commonwealth of Massachusetts certified analytical laboratory for analytical parameters consistent with the NPDES RGP. Consistent with Standard References, the groundwater samples collected for volatile organic compounds analysis was collected with a dedicated, disposable polyethylene bailer. The source water results were compared to the NPDES RGP effluent limitations, the results are set forth in Table 1, Attachment C. A copy of the laboratory analytical data package is provided at Attachment D.

Discharge and Treatment System Information

Construction dewatering activities are expected to commence in September 2018 and last approximately one to two months. Based on discussions with HEEC, Lightship Engineering anticipates treatment and discharge at up to 200 gallons per minute ("gpm"). The treated water will be discharged to one or more catch basins at the locations indicated on Figure 2, Attachment B. Lightship Engineering provided CHES with the results of the source water sampling set forth above. CHES specified a wastewater treatment system designed to meet the effluent limits set forth in the NPDES RGP. The proposed wastewater treatment system designed by CHES is provided at Attachment E.

Endangered Species Act Eligibility

Lightship Engineering reviewed the United States Fish and Wildlife Service ("FWS") Information, Planning, and Conservation ("IPAC") online database for the Site and receiving water (the "project action area"). Based on the IPAC report, there are no critical habitats in the

project action area and the listed species (Northern Long Eared Bat and Red Knot) do not have a critical habitat designated. A copy of the IPAC report is provided at Attachment F.

The proposed effluent discharge is to near-shore marine waters in Massachusetts (Massachusetts Bay – Boston Harbor). Based on a review of USEPA and National Marine Fisheries Service ("NMFS"), the project action area meets FWS Criterion A (*i.e.* – no listed species or critical habitats are within the project action area) therefore the project will have no effect or are not likely to adversely affect listed species or habitats under jurisdiction of the NMFS.

National Historic Preservation Requirements

Based on a review of the Massachusetts Cultural Resource Information System ("MACRIS") and online records from the United States National Register of Historic Places database, the Site and surrounding area are not listed as a National Historic Place. A copy of the MACRIS report is provided at Attachment G.

Coverage Under the NPDES RGP

Based on the information set forth in this NOI submittal the proposed discharge is eligible for coverage under the NPDES RGP and Lightship Engineering is requesting coverage under the NPDES RGP on behalf of HEEC to discharge treated waters to Boston Harbor.

If you have any questions or comments, please call Kevin Paradise or Michael Pierdinock at (508) 830-3344, extensions 150 and 110, respectively.

Very truly yours,

Lightship Engineering, LLC

Kevin Paradise, EIT
Senior Project Manager

Michael J. Pierdinock, LSP, CHMM
Principal

Attachments

ATTACHMENT A

NOTICE OF INTENT

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:
HEEC Land Cable, Deer Island, Massachusetts</td><td colspan="3">Site address: Deer Island
Street:</td></tr>
<tr><td>City: Boston</td><td>State: MA</td><td>Zip:</td></tr>
<tr><td rowspan="4">2. Site owner

Massachusetts Water Resources Authority
190 Tafts Avenue
Winthrop, Massachusetts 02152

Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private
■ Other; if so, specify: Municipal</td><td colspan="3">Contact Person: Richard Adams</td></tr>
<tr><td colspan="2">Telephone: 617-242-6000</td><td>Email: Richard.Adams@MWRA.com</td></tr>
<tr><td colspan="3">Mailing address: 190 Tafts Aveune
Street:</td></tr>
<tr><td>City: Winthrop</td><td>State: MA</td><td>Zip: 02152</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner

Clean Harbors Environmental Services
609 Pleasant Street
Weymouth, Massachusetts 02189</td><td colspan="3">Contact Person: Robert Paul</td></tr>
<tr><td colspan="2">Telephone: 781-803-4100</td><td>Email: PaulB@CleanHarbors.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 609 Pleasant Street</td></tr>
<tr><td>City: Weymouth</td><td>State: MA</td><td>Zip: 02189</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):
RTN 3-1283
☐ 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):
Boston Inner Harbor	MA 70-02	SB (CSO)

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

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

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

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. Boston Harbor is on SILW and indicated pollutants are excess bacteria and nutrients.

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.	Not Applicable
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.	None

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: Not Applicable - No Dilution Factor Requested

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: Total Metals and Turbidity (Total Suspended Solids)	
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): Outfall 01	Outfall location(s): (Latitude, Longitude) Lat = 42.352427 Long = -70.965124
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Treated water will be discharged to one or more catch basins that discharge to Outfall 01. ■ 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: Approval pending from MWRA 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): September 2018 - December 2018 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	121,4500N	24	43	43	Report mg/L	---
Chloride		✓	1	EPA 300.0	500,000	16,000,000	16,000,000	Report µg/l	---
Total Residual Chlorine	✓		1	SM21-22	20	ND	ND	0.2 mg/L	
Total Suspended Solids		✓	1	SM21-22	500	7,200	7,200	30 mg/L	---
Antimony	✓		1	EPA 200.8	5.0	ND	ND	206 µg/L	
Arsenic		✓	1	EPA 200.8	10	28	28	104 µg/L	
Cadmium	✓		1	EPA 200.8	1.0	ND	ND	10.2 µg/L	
Chromium III	✓		1	Tri	NA	ND	ND	323 µg/L	
Chromium VI	✓		1	SM21-22	4	ND	ND	323 µg/L	
Copper		✓	1	EPA 200.8	10	72	72	242 µg/L	
Iron		✓	1	EPA 200.7	50	180	180	5,000 µg/L	
Lead	✓		1	EPA 200.8	5.0	ND	ND	160 µg/L	
Mercury	✓		1	EPA 245.1	0.1	ND	ND	0.739 µg/L	
Nickel	✓		1	EPA 200.8	50	ND	ND	1,450 µg/L	
Selenium		✓	1	EPA 200.8	21	89	89	235.8 µg/L	
Silver	✓		1	EPA 200.8	1.0	ND	ND	35.1 µg/L	
Zinc	✓		1	EPA 200.8	200	ND	ND	420 µg/L	
Cyanide	✓		1	121,4500C	1	ND	ND	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		1	NA	NA	ND	ND	100 µg/L	---
Benzene	✓		1	EPA 624	1.0	ND	ND	5.0 µg/L	---
1,4 Dioxane	✓		1	EPA 624	50	ND	ND	200 µg/L	---
Acetone	✓		1	EPA 624	50	ND	ND	7.97 mg/L	---
Phenol	✓		1	EPA 625.1	10	ND	ND	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	EPA 624	2.0	ND	ND	4.4 µg/L	
1,2 Dichlorobenzene	✓		1	EPA 624	2.0	ND	ND	600 µg/L	---
1,3 Dichlorobenzene	✓		1	EPA 624	2.0	ND	ND	320 µg/L	---
1,4 Dichlorobenzene	✓		1	EPA 624	2.0	ND	ND	5.0 µg/L	---
Total dichlorobenzene			1	NA	NA	ND	ND	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	EPA 624	2.0	ND	ND	70 µg/L	---
1,2 Dichloroethane			1	NA	NA	ND	ND	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	EPA 624	2.0	ND	ND	3.2 µg/L	---
Ethylene Dibromide			1	EPA 504.1	0.01	ND	ND	0.05 µg/L	---
Methylene Chloride	✓		1	EPA 624	5.0	ND	ND	4.6 µg/L	---
1,1,1 Trichloroethane	✓		1	EPA 624	2.0	ND	ND	200 µg/L	---
1,1,2 Trichloroethane	✓		1	EPA 624	2.0	ND	ND	5.0 µg/L	---
Trichloroethylene	✓		1	EPA 624	2.0	ND	ND	5.0 µg/L	---
Tetrachloroethylene	✓		1	EPA 624	2.0	ND	ND	5.0 µg/L	
cis-1,2 Dichloroethylene	✓		1	EPA 624	1.0	ND	ND	70 µg/L	---
Vinyl Chloride	✓		1	EPA 624	2.0	ND	ND	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		1	NA	NA	ND	ND	190 µg/L	
Diethylhexyl phthalate	✓		1	NA	NA	ND	ND	101 µg/L	
Total Group I PAHs	✓		1	NA	NA	ND	ND	1.0 µg/L	---
Benzo(a)anthracene	✓		1	EPA 625	0.051	ND	ND	As Total PAHs	
Benzo(a)pyrene	✓		1	EPA 625	0.10	ND	ND		
Benzo(b)fluoranthene	✓		1	EPA 625	0.051	ND	ND		
Benzo(k)fluoranthene	✓		1	EPA 625	0.20	ND	ND		
Chrysene	✓		1	EPA 625	0.20	ND	ND		
Dibenzo(a,h)anthracene	✓		1	EPA 625	0.20	ND	ND		
Indeno(1,2,3-cd)pyrene	✓		1	EPA 625	0.20	ND	ND		

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	NA	NA	ND	ND	100 µg/L	---
Naphthalene	✓		1	EPA 625.1	5.0	ND	ND	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		1	EPA 608.3	0.1	ND	ND	0.000064 µg/L	---
Pentachlorophenol	✓		1	EPA 625.1	10	ND	ND	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		1	EPA	1,600	ND	ND	5.0 mg/L	---
Ethanol	✓		1	1671A	2000	ND	ND	Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	EPA 624	2.0	ND	ND	70 µg/L	
tert-Butyl Alcohol	✓		1	EPA 624	20	ND	ND	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	EPA 624	0.50	ND	ND	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									

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.
Refer to Attachment E of the Notice of Intent submittal.

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: Two resin beds.

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: Bag Filters Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	200
Provide the proposed maximum effluent flow in gpm.	200
Provide the average effluent flow in gpm.	100
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	N/A

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.

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

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

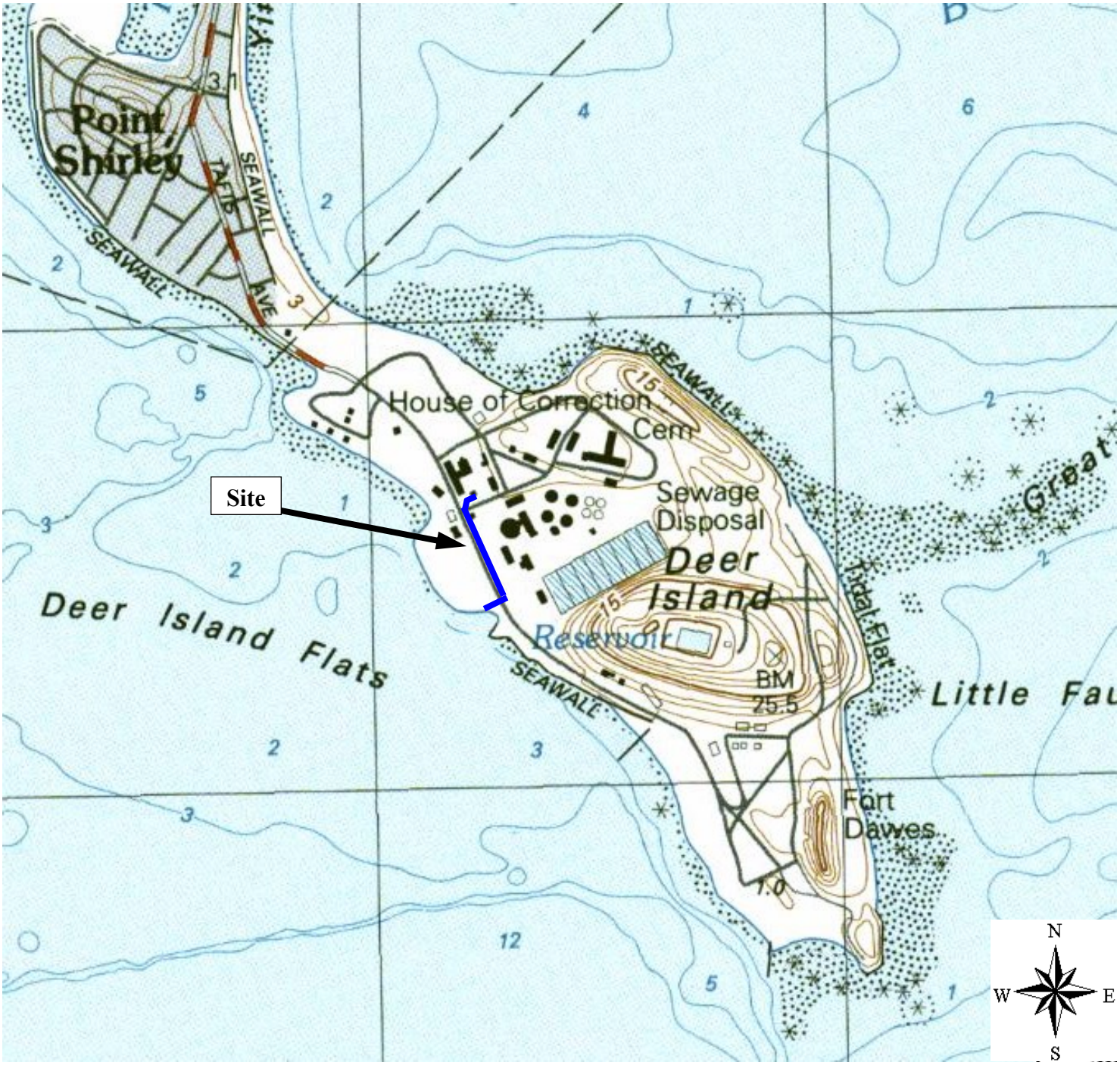
J. Certification requirement

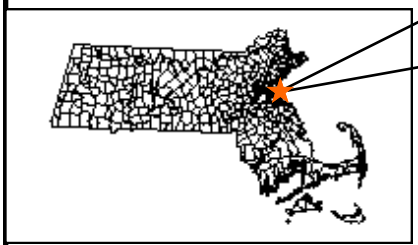
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage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

BMPP certification statement: A BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 8/13/2018
Print Name and Title: Matthew Waldrip, Senior Specialist, Environmental Licensing & Permitting	

ATTACHMENT B

FIGURES





Site

UTM COORDINATES (NAD83):
4,690,711 m North
338,233m East

SCALE: 1 inch ~ 1,000 feet

PREPARED FOR	PROJECT
Eversource Energy 247 Station Avenue Westwood, Massachusetts 02090	HEEC Land Cable Project Deer Island, Massachusetts

Source: MassGIS Online Data Viewer

FIGURE 1
Site Locus Map

LIGHTSHIP ENGINEERING
ENVIRONMENTAL & LAND-USE CONSULTANTS
39 Industrial Park Road • Unit C • Plymouth, Massachusetts 02360 • (508) 830-3344 • Fax: (508) 830-3360

Client	Project	FIGURE 2 Site Map	LIGHTSHIP ENGINEERING ENVIRONMENTAL & LAND–USE CONSULTANTS 39 Industrial Park Road • Unit C • Plymouth, Massachusetts 02360 • Phone:(508) 830-3344 • Fax: (508) 830-3360		
Eversource Energy 247 Station Avenue Westwood, Massachusetts	HEEC Land Cable Deer Island, Massachusetts		**Date: 8/10/2018**	**Drawn by: KDP**	500.98.12
			Sheet No. 1 of 1	**Scale: 1" ~ 400'**	

Source: Google Earth Aerial Photograph and Information provided by Eversource Energy.

P:\Projects\500\500.98\500.98.12\Access Agreements\Figures\Figure - Proposed Sampling Locations.dwg

ATTACHMENT C

TABLE 1 – SOURCE AND RECEIVING WATER ANALYTICAL SUMMARY TABLE

Table 1
Source and Receiving Water Analytical Summary Table
HEEC Land Cable
Deer Island, Massachusetts
(µg/L)

Sample ID.	Date Sampled	Sample Location	Total Metals																				
			Antimony	Arsenic	Cadmium	Chromium	Copper	Iron	Lead	Mercury	Nickel	Selenium	Silver	Zinc	1,2-Dibromoethane	Ethanol	Chlorine, Residual	Hexavalent Chromium	Total Suspended Solids	Oil & Grease	Ammonia as N	Salinity (ppt)	Cyanide	Chloride
Source Water																								
LE-TMW6	5/1/2018	Deer Island	BRL<5.0	28	BRL<1.0	BRL<100	72	180	BRL<5.0	BRL<0.0001	BRL<50	89	BRL<1.0	BRL<200	BRL<0.01	BRL<2,000	BRL<20	BRL<4.0	7,200	BRL<1,600	43	NA	BRL<5	16,000,000
Receiving Water																								
LE-SW-1	8/2/2018	Boston Harbor - Adjacent to Deer Island	BRL<5.0	61	BRL<2.5	17	110	4.5	11	BRL<0.0001	BRL<25	210	BRL<2.5	BRL<50	NA	NA	NA	NA	NA	NA	BRL<300	29.7	NA	NA
NPDES General Permit For Remediation Activity Discharges; Effective April 8, 2017																								
Technology-Based Effluent Limitation			206	104	10.2	323	242	5,000	160	0.739	1,450	235.8	35.1	420	0.05	NS	200	323	30,000	5,000	NS	NA	178,000	NS
Water Quality-Based Effluent Limitation (Saltwater)			640	36	8.8	100	3.1	NS	8.1	0.94	8.2	71	1.9	81	0.05	NS	8	50	30,000	5,000	NS	NA	1.0	NS

Notes:
LE-TMW6 - groundwater sample.
LE-SW-1 - surface water sample.
NA - Not Analyzed/Applicable
µg/L - microgram per liter.
ppt - parts per thousand.
BRL<5 indicates concentration, if any, is below reporting limit for analyte (reporting limit = 5).
PCBs - Polychlorinated Biphenyls.
SVOCs - Semi-Volatile Organic Compounds.
VOCs - Volatile Organic Compounds.

ATTACHMENT D

LABORATORY ANALYTICAL DATA PACKAGES

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

May 7, 2018

Kevin Paradise
Lightship Engineering, LLC
39 Industrial Park Road
Plymouth, MA 02360

Project Location: Winthrop
Client Job Number:
Project Number: 500.98.12
Laboratory Work Order Number: 18E0051

Enclosed are results of analyses for samples received by the laboratory on May 1, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Emily E. Snyder
Project Manager

Table of Contents

Table of Contents (continued)

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Lightship Engineering, LLC
39 Industrial Park Road
Plymouth, MA 02360
ATTN: Kevin Paradise

REPORT DATE: 5/7/2018

PURCHASE ORDER NUMBER: 64454 Release 1

PROJECT NUMBER: 500.98.12

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18E0051

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: Winthrop

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LE-TMW6	18E0051-01	Ground Water		121,4500CN-CE	MA M-MA-086/CT PH-0574/NY11148
				121,4500NH3-BH	MA M-MA-086/CT PH-0574/NY11148
				1671A	NY NELAP 10026/ MA M-NY044 +others
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 504.1	MA M-RI010/CT PH-0740/NY11673/+ Additional
				EPA 608.3	
				EPA 624	
				EPA 625	
				EPA 625.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				SW-846 8015C	NY NELAP 10026/ MA M-NY044 +others
				Tri Chrome Calc.	

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

EPA 200.8

Qualifications:

DL-15

Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.

Analyte & Samples(s) Qualified:

Antimony
18E0051-01[LE-TMW6]

Arsenic
18E0051-01[LE-TMW6]

Cadmium
18E0051-01[LE-TMW6]

Chromium
18E0051-01[LE-TMW6]

Copper
18E0051-01[LE-TMW6]

Lead
18E0051-01[LE-TMW6]

Nickel
18E0051-01[LE-TMW6]

Selenium
18E0051-01[LE-TMW6]

Silver
18E0051-01[LE-TMW6]

Zinc
18E0051-01[LE-TMW6]

EPA 300.0

Qualifications:

MS-07

Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.

Analyte & Samples(s) Qualified:

Chloride
B202492-MS1

EPA 625

Qualifications:

S-07

One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.

Analyte & Samples(s) Qualified:

2,4,6-Tribromophenol
18E0051-01[LE-TMW6], B202342-BLK1, B202342-BS1

V-06

Continuing calibration did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Pentachlorophenol (SIM)
18E0051-01[LE-TMW6], B202342-BLK1, B202342-BS1, B202342-BSD1

EPA 625.1

Qualifications:

B

Analyte is found in the associated laboratory blank as well as in the sample.

Analyte & Samples(s) Qualified:

Isophorone
B202261-BS1, B202261-BSD1

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

L-07

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.

Analyte & Samples(s) Qualified:

Benzidine

B202466-BS1

V-04

Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine

18E0051-01RE1[LE-TMW6], B202466-BLK1, B202466-BS1, B202466-BSD1

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.

Analyte & Samples(s) Qualified:

Benzidine

18E0051-01RE1[LE-TMW6], B202466-BLK1, B202466-BS1, B202466-BSD1

Hexachlorocyclopentadiene

18E0051-01RE1[LE-TMW6], B202466-BLK1, B202466-BS1, B202466-BSD1

V-19

Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reported result is estimated.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol

B202261-BLK1, B202261-BS1, B202261-BSD1, B202466-BLK1, B202466-BS1, B202466-BSD1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Project Manager

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	1.7	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.28	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Benzene	ND	1.0	0.34	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
tert-Butyl Alcohol (TBA)	ND	20	2.9	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Carbon Tetrachloride	ND	2.0	0.39	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,2-Dichlorobenzene	ND	2.0	0.31	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,3-Dichlorobenzene	ND	2.0	0.33	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,4-Dichlorobenzene	ND	2.0	0.39	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,2-Dichloroethane	ND	2.0	0.28	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
cis-1,2-Dichloroethylene	ND	1.0	0.39	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,1-Dichloroethane	ND	2.0	0.33	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,1-Dichloroethylene	ND	2.0	0.25	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Ethylbenzene	ND	2.0	0.37	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.24	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Methylene Chloride	ND	5.0	0.42	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Tetrachloroethylene	ND	2.0	0.32	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Toluene	ND	1.0	0.35	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,1,1-Trichloroethane	ND	2.0	0.25	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
1,1,2-Trichloroethane	ND	2.0	0.22	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Trichloroethylene	ND	2.0	0.41	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
Vinyl Chloride	ND	2.0	0.30	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
m+p Xylene	ND	2.0	0.65	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH
o-Xylene	ND	2.0	0.35	µg/L	1		EPA 624	5/2/18	5/2/18 10:24	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	86.6	70-130		5/2/18 10:24
Toluene-d8	97.3	70-130		5/2/18 10:24
4-Bromofluorobenzene	94.4	70-130		5/2/18 10:24

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	ND	0.051	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Benzo(a)pyrene (SIM)	ND	0.10	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Benzo(b)fluoranthene (SIM)	ND	0.051	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Bis(2-ethylhexyl)phthalate (SIM)	ND	1.0	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Chrysene (SIM)	ND	0.20	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L	1		EPA 625	5/1/18	5/2/18 14:18	IMR
Pentachlorophenol (SIM)	ND	1.0	µg/L	1	V-06	EPA 625	5/1/18	5/2/18 14:18	IMR

Surrogates	% Recovery		Recovery Limits	Flag/Qual		
2-Fluorophenol	57.2		15-110			5/2/18 14:18
Phenol-d6	58.6		15-110			5/2/18 14:18
Nitrobenzene-d5	84.7		30-130			5/2/18 14:18
2-Fluorobiphenyl	74.0		30-130			5/2/18 14:18
2,4,6-Tribromophenol	**132**	*	15-110	S-07		5/2/18 14:18
p-Terphenyl-d14	69.4		30-130			5/2/18 14:18

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Acenaphthylene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Anthracene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Benzidine	ND	20	µg/L	1	V-04, V-05	EPA 625.1	5/3/18	5/4/18 13:30	BGL
Benzo(g,h,i)perylene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
4-Bromophenylphenylether	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Butylbenzylphthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
4-Chloro-3-methylphenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Bis(2-chloroethyl)ether	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2-Chloronaphthalene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2-Chlorophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
4-Chlorophenylphenylether	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Di-n-butylphthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
1,3-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
1,4-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
1,2-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
3,3-Dichlorobenzidine	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,4-Dichlorophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Diethylphthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,4-Dimethylphenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Dimethylphthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
4,6-Dinitro-2-methylphenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,4-Dinitrophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,4-Dinitrotoluene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,6-Dinitrotoluene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Di-n-octylphthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Fluoranthene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Fluorene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Hexachlorobenzene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Hexachlorobutadiene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Hexachlorocyclopentadiene	ND	10	µg/L	1	V-05	EPA 625.1	5/3/18	5/4/18 13:30	BGL
Hexachloroethane	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Isophorone	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Naphthalene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Nitrobenzene	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2-Nitrophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
4-Nitrophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
N-Nitrosodimethylamine	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
N-Nitrosodiphenylamine	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
N-Nitrosodi-n-propylamine	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Pentachlorophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylnaphthalene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Phenanthrene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2-Methylphenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Phenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
3/4-Methylphenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
Pyrene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL
2,4,6-Trichlorophenol	ND	10	µg/L	1		EPA 625.1	5/3/18	5/4/18 13:30	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	63.9	15-110		5/4/18 13:30
Phenol-d6	48.2	15-110		5/4/18 13:30
Nitrobenzene-d5	80.8	30-130		5/4/18 13:30
2-Fluorobiphenyl	69.3	30-130		5/4/18 13:30
2,4,6-Tribromophenol	76.3	15-110		5/4/18 13:30
p-Terphenyl-d14	84.5	30-130		5/4/18 13:30

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	ND	0.10	0.092	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1221 [1]	ND	0.10	0.080	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1232 [1]	ND	0.10	0.10	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1242 [1]	ND	0.10	0.086	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1248 [1]	ND	0.10	0.095	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1254 [1]	ND	0.10	0.052	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB
Aroclor-1260 [1]	ND	0.10	0.098	µg/L	1		EPA 608.3	5/2/18	5/2/18 17:22	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	88.8	30-150		5/2/18 17:22
Decachlorobiphenyl [2]	93.8	30-150		5/2/18 17:22
Tetrachloro-m-xylene [1]	73.4	30-150		5/2/18 17:22
Tetrachloro-m-xylene [2]	79.6	30-150		5/2/18 17:22

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	5.0		µg/L	5	DL-15	EPA 200.8	5/2/18	5/3/18 9:24	MJH
Arsenic	28	10		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Cadmium	ND	1.0		µg/L	5	DL-15	EPA 200.8	5/2/18	5/3/18 9:24	MJH
Chromium	ND	100		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Chromium, Trivalent	0.0			mg/L	1		Tri Chrome Calc.	5/2/18	5/3/18 9:45	MJH
Copper	72	10		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Iron	0.18	0.050		mg/L	1		EPA 200.7	5/2/18	5/3/18 11:50	QNW
Lead	ND	5.0		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	5/2/18	5/3/18 11:06	EJB
Nickel	ND	50		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Selenium	89	50	21	µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH
Silver	ND	1.0		µg/L	5	DL-15	EPA 200.8	5/2/18	5/3/18 9:24	MJH
Zinc	ND	200		µg/L	10	DL-15	EPA 200.8	5/2/18	5/3/18 9:30	MJH

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	16000	500		mg/L	500		EPA 300.0	5/2/18	5/2/18 15:22	IS
Chlorine, Residual	ND	0.020		mg/L	1		SM21-22 4500 CL G	5/1/18	5/1/18 22:02	LED
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	5/1/18	5/1/18 21:18	LED
Total Suspended Solids	7.2	0.50		mg/L	1		SM21-22 2540D	5/2/18	5/2/18 13:45	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.6		mg/L	1		EPA 1664B	5/2/18	5/2/18 9:55	LL

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB)	ND	0.01	µg/L	1		EPA 504.1		5/4/18 0:00	NET
1,2-Dibromoethane (EDB) [2C]	ND	0.01	µg/L	1		EPA 504.1		5/4/18 0:00	NET

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ethanol	ND	2000	500	ug/L	1		1671A		5/3/18 0:00	T.A.

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Project Location: Winthrop | Sample Description: | Work Order: 18E0051

Date Received: 5/1/2018

Field Sample #: LE-TMW6 | Sampled: 5/1/2018 12:45

Sample ID: 18E0051-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.043	0.075	0.024	mg/L	1		121,4500NH3-BH		5/3/18 0:00	ALP
Cyanide	ND	0.005	0.001	mg/L	1		121,4500CN-CE		5/3/18 0:00	ALP

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Sample Extraction Data

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
18E0051-01 [LE-TMW6]	B202335	900	05/02/18

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202350	50.0	50.0	05/02/18

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202352	50.0	50.0	05/02/18

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202371	6.00	6.00	05/02/18

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01RE1 [LE-TMW6]	B202492	10.0	10.0	05/02/18

Prep Method: SW-846 3510C-EPA 608.3

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202327	1000	5.00	05/02/18

Prep Method: SW-846 5030B-EPA 624

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202347	5	5.00	05/02/18

Prep Method: SW-846 3510C-EPA 625

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202342	980	1.00	05/01/18

Prep Method: SW-846 3510C-EPA 625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01RE1 [LE-TMW6]	B202466	1000	1.00	05/03/18

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Sample Extraction Data

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
18E0051-01 [LE-TMW6]	B202337	1000	05/02/18

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202315	50.0	50.0	05/01/18

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18E0051-01 [LE-TMW6]	B202316	100	100	05/01/18

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
18E0051-01 [LE-TMW6]	B202362	1.00	05/02/18

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202347 - SW-846 5030B										
Blank (B202347-BLK1)				Prepared & Analyzed: 05/02/18						
Acetone	ND	50	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L							
Benzene	ND	1.0	µg/L							
tert-Butyl Alcohol (TBA)	ND	20	µg/L							
Carbon Tetrachloride	ND	2.0	µg/L							
1,2-Dichlorobenzene	ND	2.0	µg/L							
1,3-Dichlorobenzene	ND	2.0	µg/L							
1,4-Dichlorobenzene	ND	2.0	µg/L							
1,2-Dichloroethane	ND	2.0	µg/L							
cis-1,2-Dichloroethylene	ND	1.0	µg/L							
1,1-Dichloroethane	ND	2.0	µg/L							
1,1-Dichloroethylene	ND	2.0	µg/L							
1,4-Dioxane	ND	50	µg/L							
Ethylbenzene	ND	2.0	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L							
Methylene Chloride	ND	5.0	µg/L							
Tetrachloroethylene	ND	2.0	µg/L							
Toluene	ND	1.0	µg/L							
1,1,1-Trichloroethane	ND	2.0	µg/L							
1,1,2-Trichloroethane	ND	2.0	µg/L							
Trichloroethylene	ND	2.0	µg/L							
Vinyl Chloride	ND	2.0	µg/L							
m+p Xylene	ND	2.0	µg/L							
o-Xylene	ND	2.0	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*21.1*		µg/L	25.0		84.4	70-130			
Surrogate: Toluene-d8	*24.4*		µg/L	25.0		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.4	70-130			
LCS (B202347-BS1)				Prepared & Analyzed: 05/02/18						
Acetone	144	50	µg/L	200		71.8	70-160			†
tert-Amyl Methyl Ether (TAME)	17.6	0.50	µg/L	20.0		88.1	70-130			
Benzene	18.2	1.0	µg/L	20.0		91.1	65-135			
tert-Butyl Alcohol (TBA)	160	20	µg/L	200		79.9	40-160			†
Carbon Tetrachloride	17.6	2.0	µg/L	20.0		88.2	70-130			
1,2-Dichlorobenzene	20.7	2.0	µg/L	20.0		104	65-135			
1,3-Dichlorobenzene	21.8	2.0	µg/L	20.0		109	70-130			
1,4-Dichlorobenzene	20.6	2.0	µg/L	20.0		103	65-135			
1,2-Dichloroethane	15.2	2.0	µg/L	20.0		75.8	70-130			
cis-1,2-Dichloroethylene	18.4	1.0	µg/L	20.0		91.9	70-130			
1,1-Dichloroethane	17.7	2.0	µg/L	20.0		88.7	70-130			
1,1-Dichloroethylene	15.9	2.0	µg/L	20.0		79.6	50-150			
1,4-Dioxane	189	50	µg/L	200		94.6	40-130			†
Ethylbenzene	21.0	2.0	µg/L	20.0		105	60-140			
Methyl tert-Butyl Ether (MTBE)	17.6	2.0	µg/L	20.0		88.0	70-130			
Methylene Chloride	17.3	5.0	µg/L	20.0		86.5	60-140			
Tetrachloroethylene	20.9	2.0	µg/L	20.0		105	70-130			
Toluene	18.8	1.0	µg/L	20.0		94.2	70-130			
1,1,1-Trichloroethane	17.0	2.0	µg/L	20.0		85.2	70-130			
1,1,2-Trichloroethane	19.7	2.0	µg/L	20.0		98.4	70-130			
Trichloroethylene	19.6	2.0	µg/L	20.0		98.2	65-135			
Vinyl Chloride	9.28	2.0	µg/L	20.0		46.4	5-195			
m+p Xylene	41.7	2.0	µg/L	40.0		104	70-130			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202347 - SW-846 5030B										
LCS (B202347-BS1)				Prepared & Analyzed: 05/02/18						
o-Xylene	20.4	2.0	µg/L	20.0		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	*21.0*		µg/L	25.0		83.8	70-130			
Surrogate: Toluene-d8	*24.1*		µg/L	25.0		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	*23.9*		µg/L	25.0		95.5	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B202342 - SW-846 3510C												
Blank (B202342-BLK1)				Prepared: 05/01/18 Analyzed: 05/02/18								
Benzo(a)anthracene (SIM)	ND	0.050	µg/L									
Benzo(a)pyrene (SIM)	ND	0.10	µg/L									
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L									
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L									
Bis(2-ethylhexyl)phthalate (SIM)	ND	1.0	µg/L									
Chrysene (SIM)	ND	0.20	µg/L									
Dibenz(a,h)anthracene (SIM)	ND	0.20	µg/L									
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.20	µg/L									
Pentachlorophenol (SIM)	ND	1.0	µg/L								V-06	
Surrogate: 2-Fluorophenol	*122*		µg/L	200		60.8		15-110				
Surrogate: Phenol-d6	*113*		µg/L	200		56.6		15-110				
Surrogate: Nitrobenzene-d5	*78.3*		µg/L	100		78.3		30-130				
Surrogate: 2-Fluorobiphenyl	*71.0*		µg/L	101		70.3		30-130				
Surrogate: 2,4,6-Tribromophenol	*223*		µg/L	200		**111**	*	15-110			S-07	
Surrogate: p-Terphenyl-d14	*64.7*		µg/L	101		64.1		30-130				
LCS (B202342-BS1)				Prepared: 05/01/18 Analyzed: 05/02/18								
Benzo(a)anthracene (SIM)	44.0	1.2	µg/L	50.0		88.0		40-140				
Benzo(a)pyrene (SIM)	46.5	2.5	µg/L	50.0		93.0		40-140				
Benzo(b)fluoranthene (SIM)	46.6	1.2	µg/L	50.0		93.2		40-140				
Benzo(k)fluoranthene (SIM)	45.4	5.0	µg/L	50.0		90.9		40-140				
Bis(2-ethylhexyl)phthalate (SIM)	37.4	25	µg/L	50.0		74.8		40-140				
Chrysene (SIM)	43.1	5.0	µg/L	50.0		86.2		40-140				
Dibenz(a,h)anthracene (SIM)	48.6	5.0	µg/L	50.0		97.3		40-140				
Indeno(1,2,3-cd)pyrene (SIM)	46.8	5.0	µg/L	50.0		93.7		40-140				
Pentachlorophenol (SIM)	55.5	25	µg/L	50.0		111		40-140			V-06	
Surrogate: 2-Fluorophenol	*116*		µg/L	200		57.9		15-110				
Surrogate: Phenol-d6	*89.9*		µg/L	200		45.0		15-110				
Surrogate: Nitrobenzene-d5	*88.6*		µg/L	100		88.6		30-130				
Surrogate: 2-Fluorobiphenyl	*84.3*		µg/L	101		83.4		30-130				
Surrogate: 2,4,6-Tribromophenol	*225*		µg/L	200		**112**	*	15-110			S-07	
Surrogate: p-Terphenyl-d14	*70.2*		µg/L	101		69.6		30-130				
LCS Dup (B202342-BSD1)				Prepared: 05/01/18 Analyzed: 05/02/18								
Benzo(a)anthracene (SIM)	40.3	1.2	µg/L	50.0		80.6		40-140	8.83	20		
Benzo(a)pyrene (SIM)	42.8	2.5	µg/L	50.0		85.6		40-140	8.17	20		
Benzo(b)fluoranthene (SIM)	43.3	1.2	µg/L	50.0		86.6		40-140	7.45	20		
Benzo(k)fluoranthene (SIM)	42.9	5.0	µg/L	50.0		85.8		40-140	5.77	20		
Bis(2-ethylhexyl)phthalate (SIM)	34.9	25	µg/L	50.0		69.8		40-140	6.92	20		
Chrysene (SIM)	39.9	5.0	µg/L	50.0		79.8		40-140	7.77	20		
Dibenz(a,h)anthracene (SIM)	44.8	5.0	µg/L	50.0		89.6		40-140	8.30	20		
Indeno(1,2,3-cd)pyrene (SIM)	43.0	5.0	µg/L	50.0		86.0		40-140	8.63	20		‡
Pentachlorophenol (SIM)	45.8	25	µg/L	50.0		91.6		40-140	19.2	20	V-06	
Surrogate: 2-Fluorophenol	*84.2*		µg/L	200		42.1		15-110				
Surrogate: Phenol-d6	*107*		µg/L	200		53.4		15-110				
Surrogate: Nitrobenzene-d5	*83.1*		µg/L	100		83.1		30-130				
Surrogate: 2-Fluorobiphenyl	*76.7*		µg/L	101		75.9		30-130				
Surrogate: 2,4,6-Tribromophenol	*194*		µg/L	200		96.9		15-110				
Surrogate: p-Terphenyl-d14	*68.0*		µg/L	101		67.3		30-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202261 - SW-846 3510C										
Blank (B202261-BLK1)				Prepared: 05/01/18 Analyzed: 05/02/18						
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							
Benzo(g,h,i)perylene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							V-19
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachlorocyclopentadiene	ND	10	µg/L							
Hexachloroethane	ND	10	µg/L							
Isophorone	15	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
N-Nitrosodimethylamine	ND	10	µg/L							
N-Nitrosodiphenylamine	ND	10	µg/L							
N-Nitrosodi-n-propylamine	ND	10	µg/L							
Pentachlorophenol	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
Phenanthrene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
Phenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							
2,4,6-Trichlorophenol	ND	10	µg/L							

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B202261 - SW-846 3510C											
Blank (B202261-BLK1)				Prepared: 05/01/18 Analyzed: 05/02/18							
Surrogate: 2-Fluorophenol	*125*		µg/L	200		62.7		15-110			
Surrogate: Phenol-d6	*103*		µg/L	200		51.3		15-110			
Surrogate: Nitrobenzene-d5	*79.5*		µg/L	100		79.5		30-130			
Surrogate: 2-Fluorobiphenyl	*64.8*		µg/L	101		64.1		30-130			
Surrogate: 2,4,6-Tribromophenol	*155*		µg/L	200		77.7		15-110			
Surrogate: p-Terphenyl-d14	*96.4*		µg/L	101		95.4		30-130			
LCS (B202261-BS1)				Prepared: 05/01/18 Analyzed: 05/02/18							
Acenaphthene	31.9	5.0	µg/L	50.0		63.8		47-145			
Acenaphthylene	32.6	5.0	µg/L	50.0		65.1		33-145			
Anthracene	36.0	5.0	µg/L	50.0		72.1		27-133			
Benzidine	17.0	20	µg/L	50.0		**34.0**	*	40-140			
Benzo(g,h,i)perylene	37.5	5.0	µg/L	50.0		75.0		10-219			
4-Bromophenylphenylether	36.4	10	µg/L	50.0		72.7		53-127			
Butylbenzylphthalate	37.1	10	µg/L	50.0		74.1		10-152			
4-Chloro-3-methylphenol	39.4	10	µg/L	50.0		78.7		22-147			
Bis(2-chloroethyl)ether	39.5	10	µg/L	50.0		78.9		12-158			
Bis(2-chloroisopropyl)ether	42.6	10	µg/L	50.0		85.1		36-166			
2-Chloronaphthalene	30.8	10	µg/L	50.0		61.6		60-120			
2-Chlorophenol	36.0	10	µg/L	50.0		72.0		23-134			
4-Chlorophenylphenylether	34.8	10	µg/L	50.0		69.7		25-158			
Di-n-butylphthalate	36.4	10	µg/L	50.0		72.7		10-120			
1,3-Dichlorobenzene	31.7	5.0	µg/L	50.0		63.4		10-172			
1,4-Dichlorobenzene	31.4	5.0	µg/L	50.0		62.8		20-124			
1,2-Dichlorobenzene	32.8	5.0	µg/L	50.0		65.5		32-129			
3,3-Dichlorobenzidine	38.3	10	µg/L	50.0		76.7		10-262			
2,4-Dichlorophenol	38.0	10	µg/L	50.0		76.0		39-135			
Diethylphthalate	34.7	10	µg/L	50.0		69.3		10-120			
2,4-Dimethylphenol	38.2	10	µg/L	50.0		76.5		32-120			
Dimethylphthalate	36.4	10	µg/L	50.0		72.8		10-120			
4,6-Dinitro-2-methylphenol	32.4	10	µg/L	50.0		64.8		10-181			
2,4-Dinitrophenol	31.5	10	µg/L	50.0		63.0		10-191			V-19
2,4-Dinitrotoluene	34.2	10	µg/L	50.0		68.4		39-139			
2,6-Dinitrotoluene	36.1	10	µg/L	50.0		72.1		50-158			
Di-n-octylphthalate	35.6	10	µg/L	50.0		71.2		4-146			
1,2-Diphenylhydrazine (as Azobenzene)	38.2	10	µg/L	50.0		76.4		40-140			
Bis(2-Ethylhexyl)phthalate	36.2	10	µg/L	50.0		72.4		8-158			
Fluoranthene	36.5	5.0	µg/L	50.0		73.0		26-137			
Fluorene	34.1	5.0	µg/L	50.0		68.1		59-121			
Hexachlorobenzene	35.5	10	µg/L	50.0		71.0		10-152			
Hexachlorobutadiene	34.9	10	µg/L	50.0		69.9		24-120			
Hexachlorocyclopentadiene	23.9	10	µg/L	50.0		47.8		40-140			
Hexachloroethane	33.0	10	µg/L	50.0		66.1		40-120			
Isophorone	54.0	10	µg/L	50.0		108		21-196			B
Naphthalene	36.7	5.0	µg/L	50.0		73.4		21-133			
Nitrobenzene	37.6	10	µg/L	50.0		75.2		35-180			
2-Nitrophenol	35.9	10	µg/L	50.0		71.8		29-182			
4-Nitrophenol	25.5	10	µg/L	50.0		50.9		10-132			
N-Nitrosodimethylamine	32.7	10	µg/L	50.0		65.4		40-140			
N-Nitrosodiphenylamine	43.8	10	µg/L	50.0		87.5		40-140			
N-Nitrosodi-n-propylamine	39.7	10	µg/L	50.0		79.3		10-230			
Pentachlorophenol	30.1	10	µg/L	50.0		60.2		14-176			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B202261 - SW-846 3510C											
LCS (B202261-BS1)				Prepared: 05/01/18 Analyzed: 05/02/18							
2-Methylnaphthalene	40.0	5.0	µg/L	50.0		80.0		40-140			
Phenanthrene	36.8	5.0	µg/L	50.0		73.6		54-120			
2-Methylphenol	32.6	10	µg/L	50.0		65.3		40-140			
Phenol	25.3	10	µg/L	50.0		50.5		5-120			
3/4-Methylphenol	38.9	10	µg/L	50.0		77.8		40-140			
Pyrene	36.0	5.0	µg/L	50.0		72.0		52-120			
1,2,4-Trichlorobenzene	34.4	5.0	µg/L	50.0		68.8		44-142			
2,4,6-Trichlorophenol	34.2	10	µg/L	50.0		68.5		37-144			
Surrogate: 2-Fluorophenol	*127*		µg/L	200		63.6		15-110			
Surrogate: Phenol-d6	*107*		µg/L	200		53.4		15-110			
Surrogate: Nitrobenzene-d5	*77.1*		µg/L	100		77.1		30-130			
Surrogate: 2-Fluorobiphenyl	*64.1*		µg/L	101		63.5		30-130			
Surrogate: 2,4,6-Tribromophenol	*155*		µg/L	200		77.7		15-110			
Surrogate: p-Terphenyl-d14	*85.7*		µg/L	101		84.9		30-130			
LCS Dup (B202261-BSD1)				Prepared: 05/01/18 Analyzed: 05/02/18							
Acenaphthene	28.3	5.0	µg/L	50.0		56.6		47-145	11.9	48	
Acenaphthylene	29.2	5.0	µg/L	50.0		58.4		33-145	10.9	74	
Anthracene	32.0	5.0	µg/L	50.0		64.0		27-133	11.8	66	
Benzidine	24.3	20	µg/L	50.0		48.6		40-140	35.2		
Benzo(g,h,i)perylene	32.8	5.0	µg/L	50.0		65.5		10-219	13.4	97	
4-Bromophenylphenylether	32.2	10	µg/L	50.0		64.5		53-127	12.0	43	
Butylbenzylphthalate	32.6	10	µg/L	50.0		65.1		10-152	12.9	60	
4-Chloro-3-methylphenol	35.1	10	µg/L	50.0		70.1		22-147	11.6	73	
Bis(2-chloroethyl)ether	32.2	10	µg/L	50.0		64.3		12-158	20.4	108	
Bis(2-chloroisopropyl)ether	36.1	10	µg/L	50.0		72.1		36-166	16.5	76	
2-Chloronaphthalene	27.8	10	µg/L	50.0		**55.6**	*	60-120	10.1	24	
2-Chlorophenol	31.1	10	µg/L	50.0		62.2		23-134	14.6	61	
4-Chlorophenylphenylether	30.5	10	µg/L	50.0		61.0		25-158	13.3	61	
Di-n-butylphthalate	32.5	10	µg/L	50.0		65.0		10-120	11.2	47	
1,3-Dichlorobenzene	27.0	5.0	µg/L	50.0		54.0		10-172	16.0		
1,4-Dichlorobenzene	27.6	5.0	µg/L	50.0		55.2		20-124	12.8		
1,2-Dichlorobenzene	28.3	5.0	µg/L	50.0		56.6		32-129	14.6		
3,3-Dichlorobenzidine	32.6	10	µg/L	50.0		65.1		10-262	16.3	108	
2,4-Dichlorophenol	34.0	10	µg/L	50.0		67.9		39-135	11.2	50	
Diethylphthalate	31.0	10	µg/L	50.0		62.1		10-120	11.1	100	
2,4-Dimethylphenol	33.8	10	µg/L	50.0		67.5		32-120	12.5	58	
Dimethylphthalate	32.4	10	µg/L	50.0		64.8		10-120	11.6	183	
4,6-Dinitro-2-methylphenol	29.2	10	µg/L	50.0		58.4		10-181	10.5	203	
2,4-Dinitrophenol	29.0	10	µg/L	50.0		58.0		10-191	8.26	132	V-19
2,4-Dinitrotoluene	31.2	10	µg/L	50.0		62.3		39-139	9.36	42	
2,6-Dinitrotoluene	32.7	10	µg/L	50.0		65.5		50-158	9.68	48	
Di-n-octylphthalate	30.8	10	µg/L	50.0		61.5		4-146	14.6	69	
1,2-Diphenylhydrazine (as Azobenzene)	33.8	10	µg/L	50.0		67.5		40-140	12.3		
Bis(2-Ethylhexyl)phthalate	31.5	10	µg/L	50.0		63.1		8-158	13.7	82	
Fluoranthene	33.1	5.0	µg/L	50.0		66.1		26-137	9.95	66	
Fluorene	30.5	5.0	µg/L	50.0		61.0		59-121	11.1	38	
Hexachlorobenzene	31.9	10	µg/L	50.0		63.7		10-152	10.8	55	
Hexachlorobutadiene	31.0	10	µg/L	50.0		61.9		24-120	12.1	62	
Hexachlorocyclopentadiene	21.6	10	µg/L	50.0		43.2		40-140	10.1		
Hexachloroethane	29.2	10	µg/L	50.0		58.4		40-120	12.3	52	
Isophorone	49.2	10	µg/L	50.0		98.3		21-196	9.50	93	B

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202261 - SW-846 3510C										
LCS Dup (B202261-BSD1)				Prepared: 05/01/18 Analyzed: 05/02/18						
Naphthalene	32.6	5.0	µg/L	50.0		65.2	21-133	11.9	65	
Nitrobenzene	33.0	10	µg/L	50.0		66.0	35-180	13.0	62	
2-Nitrophenol	32.2	10	µg/L	50.0		64.4	29-182	10.9	55	
4-Nitrophenol	22.9	10	µg/L	50.0		45.8	10-132	10.5	131	
N-Nitrosodimethylamine	29.6	10	µg/L	50.0		59.1	40-140	10.1		
N-Nitrosodiphenylamine	38.5	10	µg/L	50.0		77.0	40-140	12.8		
N-Nitrosodi-n-propylamine	34.0	10	µg/L	50.0		68.0	10-230	15.4	87	
Pentachlorophenol	25.5	10	µg/L	50.0		51.0	14-176	16.6	86	
2-Methylnaphthalene	34.9	5.0	µg/L	50.0		69.8	40-140	13.5	30	
Phenanthrene	32.5	5.0	µg/L	50.0		65.0	54-120	12.4	39	
2-Methylphenol	29.1	10	µg/L	50.0		58.2	40-140	11.4	30	
Phenol	21.6	10	µg/L	50.0		43.2	5-120	15.6	64	
3/4-Methylphenol	32.8	10	µg/L	50.0		65.6	40-140	16.9	30	
Pyrene	31.6	5.0	µg/L	50.0		63.3	52-120	12.9	49	
1,2,4-Trichlorobenzene	30.2	5.0	µg/L	50.0		60.4	44-142	13.1	50	
2,4,6-Trichlorophenol	30.5	10	µg/L	50.0		61.0	37-144	11.5	58	
Surrogate: 2-Fluorophenol	*108*		µg/L	200		54.2	15-110			
Surrogate: Phenol-d6	*89.8*		µg/L	200		44.9	15-110			
Surrogate: Nitrobenzene-d5	*68.5*		µg/L	100		68.5	30-130			
Surrogate: 2-Fluorobiphenyl	*57.4*		µg/L	101		56.8	30-130			
Surrogate: 2,4,6-Tribromophenol	*136*		µg/L	200		68.1	15-110			
Surrogate: p-Terphenyl-d14	*73.9*		µg/L	101		73.2	30-130			
Batch B202466 - SW-846 3510C										
Blank (B202466-BLK1)				Prepared: 05/03/18 Analyzed: 05/04/18						
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							V-04, V-05
Benzo(g,h,i)perylene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							V-19
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							

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QUALITY CONTROL

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B202466 - SW-846 3510C											
Blank (B202466-BLK1)				Prepared: 05/03/18 Analyzed: 05/04/18							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L								
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L								
Fluoranthene	ND	5.0	µg/L								
Fluorene	ND	5.0	µg/L								
Hexachlorobenzene	ND	10	µg/L								
Hexachlorobutadiene	ND	10	µg/L								
Hexachlorocyclopentadiene	ND	10	µg/L								V-05
Hexachloroethane	ND	10	µg/L								
Isophorone	ND	10	µg/L								
Naphthalene	ND	5.0	µg/L								
Nitrobenzene	ND	10	µg/L								
2-Nitrophenol	ND	10	µg/L								
4-Nitrophenol	ND	10	µg/L								
N-Nitrosodimethylamine	ND	10	µg/L								
N-Nitrosodiphenylamine	ND	10	µg/L								
N-Nitrosodi-n-propylamine	ND	10	µg/L								
Pentachlorophenol	ND	10	µg/L								
2-Methylnaphthalene	ND	5.0	µg/L								
Phenanthrene	ND	5.0	µg/L								
2-Methylphenol	ND	10	µg/L								
Phenol	ND	10	µg/L								
3/4-Methylphenol	ND	10	µg/L								
Pyrene	ND	5.0	µg/L								
1,2,4-Trichlorobenzene	ND	5.0	µg/L								
2,4,6-Trichlorophenol	ND	10	µg/L								
Surrogate: 2-Fluorophenol	*158*		µg/L	200		79.0		15-110			
Surrogate: Phenol-d6	*121*		µg/L	200		60.6		15-110			
Surrogate: Nitrobenzene-d5	*98.1*		µg/L	100		98.1		30-130			
Surrogate: 2-Fluorobiphenyl	*77.4*		µg/L	101		76.7		30-130			
Surrogate: 2,4,6-Tribromophenol	*183*		µg/L	200		91.6		15-110			
Surrogate: p-Terphenyl-d14	*121*		µg/L	101		120		30-130			
LCS (B202466-BS1)				Prepared: 05/03/18 Analyzed: 05/04/18							
Acenaphthene	34.4	5.0	µg/L	50.0		68.9		47-145			
Acenaphthylene	35.2	5.0	µg/L	50.0		70.3		33-145			
Anthracene	39.1	5.0	µg/L	50.0		78.1		27-133			
Benzidine	16.4	20	µg/L	50.0		**32.7**	*	40-140			V-04, V-05, L-07
Benzo(g,h,i)perylene	35.3	5.0	µg/L	50.0		70.7		10-219			
4-Bromophenylphenylether	39.2	10	µg/L	50.0		78.5		53-127			
Butylbenzylphthalate	42.7	10	µg/L	50.0		85.4		10-152			
4-Chloro-3-methylphenol	42.7	10	µg/L	50.0		85.4		22-147			
Bis(2-chloroethyl)ether	42.7	10	µg/L	50.0		85.4		12-158			
Bis(2-chloroisopropyl)ether	46.3	10	µg/L	50.0		92.7		36-166			
2-Chloronaphthalene	33.3	10	µg/L	50.0		66.5		60-120			
2-Chlorophenol	40.3	10	µg/L	50.0		80.5		23-134			
4-Chlorophenylphenylether	36.7	10	µg/L	50.0		73.4		25-158			
Di-n-butylphthalate	40.6	10	µg/L	50.0		81.3		10-120			
1,3-Dichlorobenzene	35.6	5.0	µg/L	50.0		71.3		10-172			
1,4-Dichlorobenzene	35.6	5.0	µg/L	50.0		71.1		20-124			
1,2-Dichlorobenzene	36.8	5.0	µg/L	50.0		73.6		32-129			
3,3-Dichlorobenzidine	44.9	10	µg/L	50.0		89.8		10-262			
2,4-Dichlorophenol	41.3	10	µg/L	50.0		82.6		39-135			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202466 - SW-846 3510C										
LCS (B202466-BS1)				Prepared: 05/03/18 Analyzed: 05/04/18						
Diethylphthalate	37.4	10	µg/L	50.0		74.8	10-120			
2,4-Dimethylphenol	38.4	10	µg/L	50.0		76.8	32-120			
Dimethylphthalate	39.6	10	µg/L	50.0		79.2	10-120			
4,6-Dinitro-2-methylphenol	34.5	10	µg/L	50.0		69.1	10-181			
2,4-Dinitrophenol	32.9	10	µg/L	50.0		65.8	10-191			V-19
2,4-Dinitrotoluene	36.9	10	µg/L	50.0		73.8	39-139			
2,6-Dinitrotoluene	39.6	10	µg/L	50.0		79.3	50-158			
Di-n-octylphthalate	43.6	10	µg/L	50.0		87.3	4-146			
1,2-Diphenylhydrazine (as Azobenzene)	43.1	10	µg/L	50.0		86.2	40-140			
Bis(2-Ethylhexyl)phthalate	41.9	10	µg/L	50.0		83.7	8-158			
Fluoranthene	39.7	5.0	µg/L	50.0		79.3	26-137			
Fluorene	36.3	5.0	µg/L	50.0		72.6	59-121			
Hexachlorobenzene	38.1	10	µg/L	50.0		76.2	10-152			
Hexachlorobutadiene	37.5	10	µg/L	50.0		75.0	24-120			
Hexachlorocyclopentadiene	21.2	10	µg/L	50.0		42.3	40-140			V-05
Hexachloroethane	37.5	10	µg/L	50.0		75.1	40-120			
Isophorone	43.4	10	µg/L	50.0		86.7	21-196			
Naphthalene	40.2	5.0	µg/L	50.0		80.4	21-133			
Nitrobenzene	41.9	10	µg/L	50.0		83.8	35-180			
2-Nitrophenol	41.1	10	µg/L	50.0		82.2	29-182			
4-Nitrophenol	28.3	10	µg/L	50.0		56.6	10-132			
N-Nitrosodimethylamine	37.5	10	µg/L	50.0		75.0	40-140			
N-Nitrosodiphenylamine	46.0	10	µg/L	50.0		91.9	40-140			
N-Nitrosodi-n-propylamine	43.2	10	µg/L	50.0		86.4	10-230			
Pentachlorophenol	31.7	10	µg/L	50.0		63.4	14-176			
2-Methylnaphthalene	42.6	5.0	µg/L	50.0		85.1	40-140			
Phenanthrene	39.9	5.0	µg/L	50.0		79.7	54-120			
2-Methylphenol	36.7	10	µg/L	50.0		73.4	40-140			
Phenol	28.6	10	µg/L	50.0		57.2	5-120			
3/4-Methylphenol	42.8	10	µg/L	50.0		85.5	40-140			
Pyrene	39.6	5.0	µg/L	50.0		79.1	52-120			
1,2,4-Trichlorobenzene	37.6	5.0	µg/L	50.0		75.2	44-142			
2,4,6-Trichlorophenol	38.5	10	µg/L	50.0		76.9	37-144			
Surrogate: 2-Fluorophenol	*145*		µg/L	200		72.5	15-110			
Surrogate: Phenol-d6	*118*		µg/L	200		58.9	15-110			
Surrogate: Nitrobenzene-d5	*86.6*		µg/L	100		86.6	30-130			
Surrogate: 2-Fluorobiphenyl	*70.8*		µg/L	101		70.1	30-130			
Surrogate: 2,4,6-Tribromophenol	*156*		µg/L	200		77.8	15-110			
Surrogate: p-Terphenyl-d14	*93.7*		µg/L	101		92.7	30-130			
LCS Dup (B202466-BSD1)				Prepared: 05/03/18 Analyzed: 05/04/18						
Acenaphthene	32.9	5.0	µg/L	50.0		65.8	47-145	4.57	48	
Acenaphthylene	33.7	5.0	µg/L	50.0		67.4	33-145	4.18	74	
Anthracene	37.8	5.0	µg/L	50.0		75.6	27-133	3.28	66	
Benzidine	26.4	20	µg/L	50.0		52.9	40-140	47.1		V-04, V-05
Benzo(g,h,i)perylene	34.3	5.0	µg/L	50.0		68.5	10-219	3.07	97	
4-Bromophenylphenylether	38.1	10	µg/L	50.0		76.3	53-127	2.84	43	
Butylbenzylphthalate	41.9	10	µg/L	50.0		83.8	10-152	1.89	60	
4-Chloro-3-methylphenol	41.5	10	µg/L	50.0		83.0	22-147	2.95	73	
Bis(2-chloroethyl)ether	43.1	10	µg/L	50.0		86.2	12-158	0.932	108	
Bis(2-chloroisopropyl)ether	47.2	10	µg/L	50.0		94.4	36-166	1.82	76	
2-Chloronaphthalene	31.2	10	µg/L	50.0		62.3	60-120	6.49	24	

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202466 - SW-846 3510C										
LCS Dup (B202466-BSD1)				Prepared: 05/03/18 Analyzed: 05/04/18						
2-Chlorophenol	40.4	10	µg/L	50.0		80.9	23-134	0.446	61	
4-Chlorophenylphenylether	35.2	10	µg/L	50.0		70.4	25-158	4.09	61	
Di-n-butylphthalate	39.5	10	µg/L	50.0		79.1	10-120	2.77	47	
1,3-Dichlorobenzene	36.1	5.0	µg/L	50.0		72.2	10-172	1.25		
1,4-Dichlorobenzene	35.6	5.0	µg/L	50.0		71.2	20-124	0.0562		
1,2-Dichlorobenzene	37.0	5.0	µg/L	50.0		73.9	32-129	0.407		
3,3-Dichlorobenzidine	42.3	10	µg/L	50.0		84.6	10-262	6.03	108	
2,4-Dichlorophenol	40.3	10	µg/L	50.0		80.5	39-135	2.57	50	
Diethylphthalate	36.2	10	µg/L	50.0		72.3	10-120	3.34	100	
2,4-Dimethylphenol	41.2	10	µg/L	50.0		82.3	32-120	6.91	58	
Dimethylphthalate	37.9	10	µg/L	50.0		75.9	10-120	4.23	183	
4,6-Dinitro-2-methylphenol	34.0	10	µg/L	50.0		68.1	10-181	1.43	203	
2,4-Dinitrophenol	32.3	10	µg/L	50.0		64.5	10-191	1.93	132	V-19
2,4-Dinitrotoluene	35.4	10	µg/L	50.0		70.9	39-139	4.04	42	
2,6-Dinitrotoluene	37.8	10	µg/L	50.0		75.6	50-158	4.75	48	
Di-n-octylphthalate	42.2	10	µg/L	50.0		84.3	4-146	3.45	69	
1,2-Diphenylhydrazine (as Azobenzene)	41.9	10	µg/L	50.0		83.8	40-140	2.89		
Bis(2-Ethylhexyl)phthalate	40.6	10	µg/L	50.0		81.2	8-158	3.13	82	
Fluoranthene	38.0	5.0	µg/L	50.0		76.1	26-137	4.22	66	
Fluorene	34.7	5.0	µg/L	50.0		69.4	59-121	4.39	38	
Hexachlorobenzene	37.4	10	µg/L	50.0		74.8	10-152	1.83	55	
Hexachlorobutadiene	36.6	10	µg/L	50.0		73.2	24-120	2.54	62	
Hexachlorocyclopentadiene	21.6	10	µg/L	50.0		43.2	40-140	1.97		V-05
Hexachloroethane	38.0	10	µg/L	50.0		76.0	40-120	1.27	52	
Isophorone	42.2	10	µg/L	50.0		84.3	21-196	2.81	93	
Naphthalene	39.6	5.0	µg/L	50.0		79.2	21-133	1.50	65	
Nitrobenzene	40.8	10	µg/L	50.0		81.7	35-180	2.61	62	
2-Nitrophenol	39.8	10	µg/L	50.0		79.6	29-182	3.29	55	
4-Nitrophenol	27.2	10	µg/L	50.0		54.4	10-132	4.11	131	
N-Nitrosodimethylamine	37.8	10	µg/L	50.0		75.6	40-140	0.824		
N-Nitrosodiphenylamine	45.2	10	µg/L	50.0		90.3	40-140	1.80		
N-Nitrosodi-n-propylamine	43.2	10	µg/L	50.0		86.3	10-230	0.0232	87	
Pentachlorophenol	31.8	10	µg/L	50.0		63.7	14-176	0.504	86	
2-Methylnaphthalene	40.7	5.0	µg/L	50.0		81.5	40-140	4.37	30	
Phenanthrene	38.2	5.0	µg/L	50.0		76.4	54-120	4.30	39	
2-Methylphenol	36.3	10	µg/L	50.0		72.6	40-140	1.15	30	
Phenol	28.4	10	µg/L	50.0		56.8	5-120	0.631	64	
3/4-Methylphenol	41.5	10	µg/L	50.0		83.0	40-140	2.94	30	
Pyrene	38.8	5.0	µg/L	50.0		77.5	52-120	1.99	49	
1,2,4-Trichlorobenzene	36.5	5.0	µg/L	50.0		73.0	44-142	2.89	50	
2,4,6-Trichlorophenol	36.4	10	µg/L	50.0		72.8	37-144	5.56	58	
Surrogate: 2-Fluorophenol	*144*		µg/L	200		72.2	15-110			
Surrogate: Phenol-d6	*116*		µg/L	200		57.9	15-110			
Surrogate: Nitrobenzene-d5	*84.5*		µg/L	100		84.5	30-130			
Surrogate: 2-Fluorobiphenyl	*67.0*		µg/L	101		66.3	30-130			
Surrogate: 2,4,6-Tribromophenol	*149*		µg/L	200		74.6	15-110			
Surrogate: p-Terphenyl-d14	*89.6*		µg/L	101		88.8	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202327 - SW-846 3510C										
Blank (B202327-BLK1)				Prepared & Analyzed: 05/02/18						
Aroclor-1016	ND	0.10	µg/L							
Aroclor-1016 [2C]	ND	0.10	µg/L							
Aroclor-1221	ND	0.10	µg/L							
Aroclor-1221 [2C]	ND	0.10	µg/L							
Aroclor-1232	ND	0.10	µg/L							
Aroclor-1232 [2C]	ND	0.10	µg/L							
Aroclor-1242	ND	0.10	µg/L							
Aroclor-1242 [2C]	ND	0.10	µg/L							
Aroclor-1248	ND	0.10	µg/L							
Aroclor-1248 [2C]	ND	0.10	µg/L							
Aroclor-1254	ND	0.10	µg/L							
Aroclor-1254 [2C]	ND	0.10	µg/L							
Aroclor-1260	ND	0.10	µg/L							
Aroclor-1260 [2C]	ND	0.10	µg/L							
Surrogate: Decachlorobiphenyl	*1.99*		µg/L	2.00		99.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.08*		µg/L	2.00		104	30-150			
Surrogate: Tetrachloro-m-xylene	*1.64*		µg/L	2.00		81.9	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.75*		µg/L	2.00		87.3	30-150			
LCS (B202327-BS1)				Prepared & Analyzed: 05/02/18						
Aroclor-1016	0.46	0.20	µg/L	0.500		91.9	50-140			
Aroclor-1016 [2C]	0.47	0.20	µg/L	0.500		95.0	50-140			
Aroclor-1260	0.43	0.20	µg/L	0.500		86.3	8-140			
Aroclor-1260 [2C]	0.45	0.20	µg/L	0.500		89.7	8-140			
Surrogate: Decachlorobiphenyl	*1.93*		µg/L	2.00		96.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.99*		µg/L	2.00		99.5	30-150			
Surrogate: Tetrachloro-m-xylene	*1.57*		µg/L	2.00		78.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.66*		µg/L	2.00		83.0	30-150			
LCS Dup (B202327-BSD1)				Prepared & Analyzed: 05/02/18						
Aroclor-1016	0.45	0.20	µg/L	0.500		89.5	50-140	2.63		
Aroclor-1016 [2C]	0.48	0.20	µg/L	0.500		96.2	50-140	1.23		
Aroclor-1260	0.43	0.20	µg/L	0.500		86.0	8-140	0.251		
Aroclor-1260 [2C]	0.45	0.20	µg/L	0.500		89.8	8-140	0.0802		
Surrogate: Decachlorobiphenyl	*1.92*		µg/L	2.00		96.0	30-150			
Surrogate: Decachlorobiphenyl [2C]	*2.00*		µg/L	2.00		99.9	30-150			
Surrogate: Tetrachloro-m-xylene	*1.58*		µg/L	2.00		79.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.68*		µg/L	2.00		84.0	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202350 - EPA 200.7										
Blank (B202350-BLK1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Iron	ND	0.050	mg/L							
LCS (B202350-BS1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Iron	4.22	0.050	mg/L	4.00		106	85-115			
LCS Dup (B202350-BSD1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Iron	4.07	0.050	mg/L	4.00		102	85-115	3.63	20	
Batch B202352 - EPA 200.8										
Blank (B202352-BLK1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	10	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	20	µg/L							
LCS (B202352-BS1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Antimony	515	10	µg/L	500		103	85-115			
Arsenic	507	10	µg/L	500		101	85-115			
Cadmium	516	2.0	µg/L	500		103	85-115			
Chromium	507	100	µg/L	500		101	85-115			
Copper	997	10	µg/L	1000		99.7	85-115			
Lead	505	5.0	µg/L	500		101	85-115			
Nickel	506	50	µg/L	500		101	85-115			
Selenium	499	50	µg/L	500		99.7	85-115			
Silver	495	2.0	µg/L	500		98.9	85-115			
Zinc	1030	200	µg/L	1000		103	85-115			
LCS Dup (B202352-BSD1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Antimony	524	10	µg/L	500		105	85-115	1.77	20	
Arsenic	521	10	µg/L	500		104	85-115	2.56	20	
Cadmium	525	2.0	µg/L	500		105	85-115	1.67	20	
Chromium	519	100	µg/L	500		104	85-115	2.34	20	
Copper	1020	10	µg/L	1000		102	85-115	2.51	20	
Lead	509	5.0	µg/L	500		102	85-115	0.815	20	
Nickel	518	50	µg/L	500		104	85-115	2.34	20	
Selenium	520	50	µg/L	500		104	85-115	4.25	20	
Silver	502	2.0	µg/L	500		100	85-115	1.53	20	
Zinc	1050	200	µg/L	1000		105	85-115	2.77	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202371 - EPA 245.1										
Blank (B202371-BLK1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Mercury	ND	0.00010	mg/L							
LCS (B202371-BS1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Mercury	0.00175	0.00010	mg/L	0.00200		87.4	85-115			
LCS Dup (B202371-BSD1)				Prepared: 05/02/18 Analyzed: 05/03/18						
Mercury	0.00178	0.00010	mg/L	0.00200		88.8	85-115	1.59	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B202315 - SM21-22 3500 Cr B										
Blank (B202315-BLK1)				Prepared & Analyzed: 05/01/18						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B202315-BS1)				Prepared & Analyzed: 05/01/18						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		110	83.2-114			
LCS Dup (B202315-BSD1)				Prepared & Analyzed: 05/01/18						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		109	83.2-114	1.45	7.51	
Duplicate (B202315-DUP1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/01/18						
Hexavalent Chromium	ND	0.0040	mg/L		ND			NC	56.3	
Matrix Spike (B202315-MS1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/01/18						
Hexavalent Chromium	0.099	0.0040	mg/L	0.100	ND	99.1	10.8-151			
Batch B202316 - SM21-22 4500 CL G										
Blank (B202316-BLK1)				Prepared & Analyzed: 05/01/18						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B202316-BS1)				Prepared & Analyzed: 05/01/18						
Chlorine, Residual	1.2	0.020	mg/L	1.34		86.4	76-135			
LCS Dup (B202316-BSD1)				Prepared & Analyzed: 05/01/18						
Chlorine, Residual	1.2	0.020	mg/L	1.34		87.3	76-135	1.03	7.41	
Duplicate (B202316-DUP1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/01/18						
Chlorine, Residual	ND	0.020	mg/L		ND			NC	35.9	
Matrix Spike (B202316-MS1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/01/18						
Chlorine, Residual	0.99	0.020	mg/L	1.00	ND	98.8	10-185			
Batch B202335 - EPA 1664B										
Blank (B202335-BLK1)				Prepared & Analyzed: 05/02/18						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B202335-BS1)				Prepared & Analyzed: 05/02/18						
Silica Gel Treated HEM (SGT-HEM)	8.4		mg/L	10.0		84.0	64-132			
Duplicate (B202335-DUP1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/02/18						
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L		ND			NC	18	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B202335 - EPA 1664B											
Matrix Spike (B202335-MS1)	**Source: 18E0051-01**			Prepared & Analyzed: 05/02/18							
Silica Gel Treated HEM (SGT-HEM)	67	14	mg/L	100	ND	67.0		64-132			
Batch B202337 - SM21-22 2540D											
Blank (B202337-BLK1)				Prepared & Analyzed: 05/02/18							
Total Suspended Solids	ND	2.5	mg/L								
LCS (B202337-BS1)				Prepared & Analyzed: 05/02/18							
Total Suspended Solids	174	10	mg/L	200		87.0		64.3-117			
Batch B202492 - EPA 300.0											
Blank (B202492-BLK1)				Prepared & Analyzed: 05/02/18							
Chloride	ND	1.0	mg/L								
LCS (B202492-BS1)				Prepared & Analyzed: 05/02/18							
Chloride	5.2	1.0	mg/L	5.00		104		90-110			
LCS Dup (B202492-BSD1)				Prepared & Analyzed: 05/02/18							
Chloride	5.3	1.0	mg/L	5.00		106		90-110	2.50	20	
Duplicate (B202492-DUP1)	**Source: 18E0051-01RE1**			Prepared & Analyzed: 05/02/18							
Chloride	16000	500	mg/L		16000				0.202	20	
Matrix Spike (B202492-MS1)	**Source: 18E0051-01RE1**			Prepared & Analyzed: 05/02/18							
Chloride	17000	500	mg/L	2500	16000	**31.7**	*	80-120			MS-07

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 608.3

LCS

Lab Sample ID: B202327-BS1 Date(s) Analyzed: 05/02/2018 05/02/2018

Instrument ID (1): ECD10 Instrument ID (2): ECD10

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.46	
	2	0.000	0.000	0.000	0.47	2.2
Aroclor-1260	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.45	4.6

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 608.3

LCS Dup

Lab Sample ID: B202327-BSD1 Date(s) Analyzed: 05/02/2018 05/02/2018

Instrument ID (1): ECD10 Instrument ID (2): ECD10

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.45	
	2	0.000	0.000	0.000	0.48	6.5
Aroclor-1260	1	0.000	0.000	0.000	0.43	
	2	0.000	0.000	0.000	0.45	4.6

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
B	Analyte is found in the associated laboratory blank as well as in the sample.
DL-15	Sample required a dilution due to low internal standard recovery of the lesser diluted digestion, reporting limit is elevated.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
MS-07	Matrix spike recovery is outside of control limits. Analysis is in control based on laboratory fortified blank recovery.Possibility of sample matrix effects that lead to low bias for reported result or non-homogeneous sample aliquot cannot be eliminated.
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Reported result is estimated.
V-06	Continuing calibration did not meet method specifications and was biased on the high side for this compound. Reported result is estimated.
V-19	Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reported result is estimated.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 608.3 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
EPA 624 in Water	
Benzene	MA,ME,VA
Carbon Tetrachloride	MA,ME,VA
1,2-Dichlorobenzene	MA,ME,VA
1,3-Dichlorobenzene	MA,ME,VA
1,4-Dichlorobenzene	MA,ME,VA
1,2-Dichloroethane	MA,ME,VA
1,1-Dichloroethane	MA,ME,VA
1,1-Dichloroethylene	MA,ME,VA
Ethylbenzene	MA,ME,VA
Methylene Chloride	MA,ME,VA
Tetrachloroethylene	MA,ME,VA
Toluene	MA,ME,VA
1,1,1-Trichloroethane	MA,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 624 in Water	
1,1,2-Trichloroethane	MA,ME,VA
Trichloroethylene	MA,ME,VA
Vinyl Chloride	MA,ME,VA
m+p Xylene	MA,VA
o-Xylene	MA,VA
EPA 625 in Water	
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 625.1 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine (as Azobenzene)	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA

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39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 625.1 in Water	
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	
Cyanide	CT,MA,NH,NY,RI,NC,ME,VA
SW-846 8015C in Water	
Ethanol	NY

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The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2018
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018
NC-DW	North Carolina Department of Health	25703	07/31/2018

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

18E0051

http://www.contestlabs.com

Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name:	Lightship Engineering
Address:	39 Industrial Park Road
Phone:	508-830-3344
Project Name:	500.98.12
Project Location:	Winthrop
Project Number:	500.98.12
Project Manager:	Kevin Paradise
Con-Test Quote Name/Number:	PO 64454 Release 1
Invoice Recipient:	Eversource Attn: Matt Waldrip
Sampled By:	Xuan Hu

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date:

Rush-Approval Required
1-Day ☐ 3-Day ☐
2-Day ☒ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: KParadise@lightship
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	NPDES-PGP (Methanol)	TPH, Total Metals,	Chloride, Ethylene Dibromide	PCBs, VOCs, SVOCs,	Ammonia, TSS, Cyanide	Hexavalent Chromium	Residual Chlorine,	PAH				# of Containers
								22											[2] Preservation Code
								H/N/S/X/I/I/O											[3] Container Code
								P/A/V											
1	LE-TMW6	5/1/18	1245			GW		X	X	X	X	X	X	X	X				

ANALYSIS REQUESTED

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Comments:
Bill to Eversource Attn: Matt Waldrip
PO 64454 Release 1

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	5/1/18	Date/Time: 1424
Received by: (signature)	5/1/18	Date/Time: 1424
Relinquished by: (signature)	5/1/18	Date/Time: 1845
Received by: (signature)	5-1-18	Date/Time: 18:45
Relinquished by: (signature)		Date/Time:
Received by: (signature)		Date/Time:

Detection Limit Requirements
MA
RI
Other

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP, LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Lightsn. P Engineering

Received By ESD Date 5-1-18 Time 18:45

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____ Direct from Sampling ____ Ambient ____ Melted Ice ____

Were samples within Temperature? 2-6°C F By Gun # 577 Actual Temp - 7.8 By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? NA Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? ____

Are there Rushes? T Who was notified? Brie, Luke

Are there Short Holds? T Who was notified? Luke

Is there enough Volume? F

Is there Headspace where applicable? T MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? T On COC? F

Do all samples have the proper pH? T Acid HCl Base pH>12

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	8	1 Liter Plastic	1	16 oz Amb.	
HCL-	11	500 mL Amb.		500 mL Plastic	2	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	2	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

con-test® ANALYTICAL LABORATORY
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August 6, 2018

Kevin Paradise
Lightship Engineering, LLC
39 Industrial Park Road
Plymouth, MA 02360

Project Location: 500.98.12
Client Job Number:
Project Number: 500.98.12
Laboratory Work Order Number: 18H0054

Enclosed are results of analyses for samples received by the laboratory on August 1, 2018. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Emily E. Snyder
Project Manager

Table of Contents

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Lightship Engineering, LLC
39 Industrial Park Road
Plymouth, MA 02360
ATTN: Kevin Paradise

REPORT DATE: 8/6/2018

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 500.98.12

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 18H0054

The results of analyses performed on the following samples submitted to the CON-TEST Analytical Laboratory are found in this report.

PROJECT LOCATION: 500.98.12

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
LE-SW-1	18H0054-01	Surface Water		SM19-22 4500 NH3 C	
				SM2520B	NY11393/MA-MAI138/MA1110
				SW-846 6010D	
				SW-846 6020B	
				SW-846 7470A	

con-test® ANALYTICAL LABORATORY
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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

REVISON: 8/6/18 Results have been updated to include 6020 analysis.

SW-846 6010D

Qualifications:

B

Analyte is found in the associated laboratory blank as well as in the sample.

Analyte & Samples(s) Qualified:

Iron
18H0054-01[LE-SW-1], B209351-BS1, B209351-BSD1

B-07

Data is not affected by elevated level in laboratory blank since sample result is >10x level found in the blank.

Analyte & Samples(s) Qualified:

Iron
18H0054-01[LE-SW-1], B209351-BLK1

The results of analyses reported only relate to samples submitted to the Con-Test Analytical Laboratory for testing.
I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Tod E. Kopyscinski
Laboratory Director

con-test® ANALYTICAL LABORATORY
39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 500.98.12 Sample Description: Work Order: 18H0054

Date Received: 8/1/2018

Field Sample #: LE-SW-1 Sampled: 8/1/2018 09:10

Sample ID: 18H0054-01

Sample Matrix: Surface Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	5.0	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Arsenic	61	2.0	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Cadmium	ND	2.5	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Chromium	17	5.0	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Copper	110	25	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Iron	4.5	0.050	mg/L	1	B-07, B	SW-846 6010D	8/2/18	8/3/18 14:43	WSD
Lead	11	5.0	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Mercury	ND	0.00010	mg/L	1		SW-846 7470A	8/2/18	8/3/18 10:42	EJB
Nickel	ND	25	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Selenium	210	25	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Silver	ND	2.5	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD
Zinc	ND	50	µg/L	5		SW-846 6020B	8/2/18	8/3/18 12:11	WSD

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: 500.98.12 Sample Description: Work Order: 18H0054

Date Received: 8/1/2018

Field Sample #: LE-SW-1 Sampled: 8/1/2018 09:10

Sample ID: 18H0054-01

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	mg/L	1		SM19-22 4500 NH3 C	8/1/18	8/2/18 13:49	EC

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Project Location: 500.98.12 Sample Description: Work Order: 18H0054

Date Received: 8/1/2018

Field Sample #: LE-SW-1 Sampled: 8/1/2018 09:10

Sample ID: 18H0054-01

Sample Matrix: Surface Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Salinity	29.7	1	ppt (1000)	1		SM2520B		8/2/18 0:00	Eurfi

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Sample Extraction Data

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H0054-01 [LE-SW-1]	B209219	100	100	08/01/18

Prep Method: SW-846 3005A-SW-846 6010D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H0054-01 [LE-SW-1]	B209351	50.0	50.0	08/02/18

Prep Method: SW-846 3005A-SW-846 6020B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H0054-01 [LE-SW-1]	B209352	50.0	50.0	08/02/18

Prep Method: SW-846 7470A Prep-SW-846 7470A

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
18H0054-01 [LE-SW-1]	B209362	6.00	6.00	08/02/18

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B209351 - SW-846 3005A										
Blank (B209351-BLK1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Iron	0.069	0.050	mg/L							B-07
LCS (B209351-BS1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Iron	4.09	0.050	mg/L	4.00		102	80-120			B
LCS Dup (B209351-BSD1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Iron	4.06	0.050	mg/L	4.00		102	80-120	0.696	20	B
Batch B209352 - SW-846 3005A										
Blank (B209352-BLK1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Antimony	ND	5.0	µg/L							
Arsenic	ND	2.0	µg/L							
Cadmium	ND	2.5	µg/L							
Chromium	ND	5.0	µg/L							
Copper	ND	25	µg/L							
Lead	ND	5.0	µg/L							
Nickel	ND	25	µg/L							
Selenium	ND	25	µg/L							
Silver	ND	2.5	µg/L							
Zinc	ND	50	µg/L							
LCS (B209352-BS1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Antimony	497	10	µg/L	500		99.4	80-120			
Arsenic	517	4.0	µg/L	500		103	80-120			
Cadmium	517	5.0	µg/L	500		103	80-120			
Chromium	511	10	µg/L	500		102	80-120			
Copper	999	50	µg/L	1000		99.9	80-120			
Lead	507	10	µg/L	500		101	80-120			
Nickel	507	50	µg/L	500		101	80-120			
Selenium	526	50	µg/L	500		105	80-120			
Silver	475	5.0	µg/L	500		95.1	80-120			
Zinc	1060	100	µg/L	1000		106	80-120			
LCS Dup (B209352-BSD1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Antimony	500	10	µg/L	500		99.9	80-120	0.519	20	
Arsenic	518	4.0	µg/L	500		104	80-120	0.132	20	
Cadmium	520	5.0	µg/L	500		104	80-120	0.531	20	
Chromium	515	10	µg/L	500		103	80-120	0.666	20	
Copper	1010	50	µg/L	1000		101	80-120	0.924	20	
Lead	507	10	µg/L	500		101	80-120	0.0383	20	
Nickel	510	50	µg/L	500		102	80-120	0.454	20	
Selenium	524	50	µg/L	500		105	80-120	0.452	20	
Silver	483	5.0	µg/L	500		96.7	80-120	1.69	20	
Zinc	1070	100	µg/L	1000		107	80-120	0.850	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B209362 - SW-846 7470A Prep										
Blank (B209362-BLK1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Mercury	ND	0.00010	mg/L							
LCS (B209362-BS1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Mercury	0.00197	0.00010	mg/L	0.00200		98.5	80-120			
LCS Dup (B209362-BSD1)				Prepared: 08/02/18 Analyzed: 08/03/18						
Mercury	0.00196	0.00010	mg/L	0.00200		98.2	80-120	0.321	20	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B209219 - SM19-22 4500 NH3 C										
Blank (B209219-BLK1)				Prepared: 08/01/18 Analyzed: 08/02/18						
Ammonia as N	ND	0.30	mg/L							
LCS (B209219-BS1)				Prepared: 08/01/18 Analyzed: 08/02/18						
Ammonia as N	4.8	0.30	mg/L	5.00		95.2	81.5-113			
LCS Dup (B209219-BSD1)				Prepared: 08/01/18 Analyzed: 08/02/18						
Ammonia as N	5.0	0.30	mg/L	5.00		101	81.5-113	5.71	11.4	

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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch '[none]' - SM2520B										
BLK (BATCH-BLK1 (Water))				Prepared & Analyzed:						
Salinity	ND	0.1	ppt				0-0		0	
BS (BATCH-BS1 (Water))				Prepared & Analyzed:						
Salinity	ND	0.1	ppt				-			
DUP (BATCH-DUP1 (Water))				Prepared & Analyzed:						
Salinity	ND	0.1	ppt				0-0			
MS (BATCH-MS1 (Water))				Prepared & Analyzed:						
Salinity	ND	0.1	ppt				-			

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
B	Analyte is found in the associated laboratory blank as well as in the sample.
B-07	Data is not affected by elevated level in laboratory blank since sample result is >10x level found in the blank.

39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SW-846 6010D in Water	
Iron	CT,NH,NY,ME,VA,NC
SW-846 6020B in Water	
Antimony	CT,NH,NY,ME,VA,NC
Arsenic	CT,NH,NY,ME,VA,NC
Cadmium	CT,NH,NY,RI,ME,VA,NC
Chromium	CT,NH,NY,ME,VA,NC
Copper	CT,NH,NY,ME,VA,NC
Lead	CT,NH,NY,ME,VA,NC
Nickel	CT,NH,NY,ME,VA,NC
Selenium	CT,NH,NY,ME,VA,NC
Silver	CT,NH,NY,ME,VA,NC
Zinc	CT,NH,NY,ME,VA,NC
SW-846 7470A in Water	
Mercury	CT,NH,NY,NC,ME,VA
SW-846 7471B in Soil	
Mercury	CT,NH,NY,NC,ME,VA

The CON-TEST Environmental Laboratory operates under the following certifications and accreditations:

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	03/1/2020
MA	Massachusetts DEP	M-MA100	06/30/2019
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2019
NY	New York State Department of Health	10899 NELAP	04/1/2019
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2019
RI	Rhode Island Department of Health	LAO00112	12/30/2018
NC	North Carolina Div. of Water Quality	652	12/31/2018
NJ	New Jersey DEP	MA007 NELAP	06/30/2019
FL	Florida Department of Health	E871027 NELAP	06/30/2019
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2019
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2018
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2018
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2019
NC-DW	North Carolina Department of Health	25703	07/31/2019

con-test ANALYTICAL LABORATORY

18H0054

EES

Phone: 413-525-2332
Fax: 413-525-6405
Email: info@contestlabs.com

http://www.contestlabs.com

CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Page _____ of _____

Company Name:
Address: 39 Industrial Park Road, Plymouth MA
Phone: 508-830-833344

Project Name:
Project Location:
Project Number: 500.98.12
Project Manager: Kevin Paradise
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By: AP

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date:

Rush Approval Required
1-Day ☐ 3-Day ☐
2-Day ☒ 4-Day ☐

Data Delivery
Format: PDF ☒ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: Kparadise@lightshipp...
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code
01	LE-Sw 1	8/1/18	0910			G	

Comments:

ANALYSIS REQUESTED

I	I	I	
H	S	N	# of Containers
P	P	P	[2] Preservation Code
			[3] Container Code

Salinity
Ammonia
Total cyanide, metals (Sb, As, Cd, Cr, Fe, Pb, Hg, Ni, Se, Ag, Zn)

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

[1] Matrix Codes:
GW = Ground Water
WW = Waste Water
DW = Drinking Water
A = Air
S = Soil
SL = Sludge
SOL = Solid
O = Other (please define)
Surface water

[2] Preservation Codes:
I = Iced
H = HCL
M = Methanol
N = Nitric Acid
S = Sulfuric Acid
B = Sodium Bisulfate
X = Sodium Hydroxide
T = Sodium Thiosulfate
O = Other (please define)

[3] Container Codes:
A = Amber Glass
G = Glass
P = Plastic
ST = Sterile
V = Vial
S = Summa Canister
T = Tedlar Bag
O = Other (please define)

Please use the following codes to indicate possible sample concentration within the Conc Code column above:
H - High; M - Medium; L - Low; C - Clean; U - Unknown

Relinquished by: (signature)	Date/Time: 8/1/18 1500	
Received by: (signature)	Date/Time: 8/1/18 1502	
Relinquished by: (signature)	Date/Time: 8/1/18 1820	
Received by: (signature)	Date/Time: 8/1/18 1820	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements
MA
CT
Other:

Special Requirements
☐ MA MCP Required
MCP Certification Form Required
☐ CT RCP Required
RCP Certification Form Required
☐ MA State DW Required
PWSID #

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NELAC and AIHA-LAP, LLC Accredited

Project Entity
☐ Government ☐ Municipality ☐ MWRA ☐ WRTA
☐ Federal ☐ 21 J ☐ School
☐ City ☐ Brownfield ☐ MBTA

Other
☐ Chromatogram
☐ AIHA-LAP, LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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Table of Contents

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

Login Sample Receipt Checklist - (Rejection Criteria Listing - Using Acceptance Policy) Any False Statement will be brought to the attention of the Client - State True or False

Client Light Ship

Received By ESD Date 8-1-18 Time 18:20

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____

Direct from Sampling ____ Ambient ____ Melted Ice ____

By Gun # 7 Actual Temp - 2.0

Were samples within Temperature? 2-6°C T By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? NP Were Samples Tampered with? NA

Was COC Relinquished ? T Does Chain Agree With Samples? T

Are there broken/leaking/loose caps on any samples? F

Is COC in ink/ Legible? T Were samples received within holding time? T

Did COC include all pertinent Information? Client T Analysis T Sampler Name T

Project T ID's T Collection Dates/Times T

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? ____

Are there Rushes? T Who was notified? Lore, Eric

Are there Short Holds? F Who was notified? ____

Is there enough Volume? T

Is there Headspace where applicable? F MS/MSD? F

Proper Media/Containers Used? T Is splitting samples required? F

Were trip blanks received? F On COC? F

Do all samples have the proper pH? T Acid pHC2 Base ____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic	1	16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic	1	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	1	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

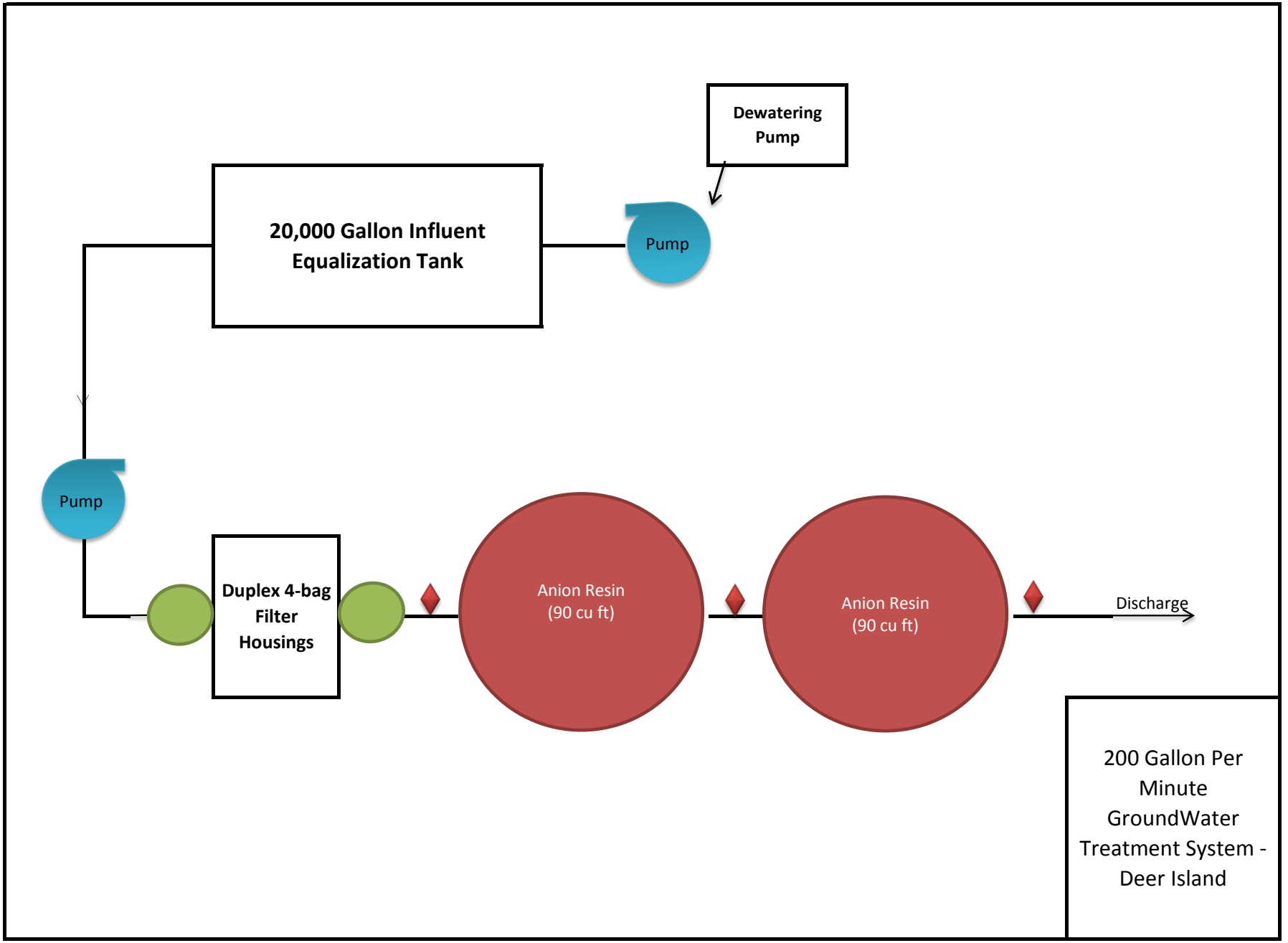
Unused Media

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic		4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Comments:

ATTACHMENT E

PROPOSED GROUNDWATER/SURFACE WATER TREATMENT SYSTEM


Dewatering Pump
20,000 Gallon Influent Equalization Tank
Pump
Pump
Duplex 4-bag Filter Housings
Anion Resin (90 cu ft)
Anion Resin (90 cu ft)
Discharge
200 Gallon Per Minute GroundWater Treatment System - Deer Island

ATTACHMENT F

UNITED STATES FISH AND WILDLIFE SERVICE INFORMATION, PLANNING, AND CONSERVATION ON LINE DATABASE

- **Listed Species or Critical Habitats**

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: 05E1NE00-2018-SLI-2681
Event Code: 05E1NE00-2018-E-06282
Project Name: Deer Island Dewatering

August 10, 2018

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: 05E1NE00-2018-SLI-2681

Event Code: 05E1NE00-2018-E-06282

Project Name: Deer Island Dewatering

Project Type: TRANSMISSION LINE

Project Description: Construction Dewatering associated with installation of new electrical conduit. Project expected to commence in September 2018 and last approximately one to two months.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.35308917733749N70.96452331620699W

Counties: Suffolk, MA

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot *Calidris canutus rufa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

ATTACHMENT G

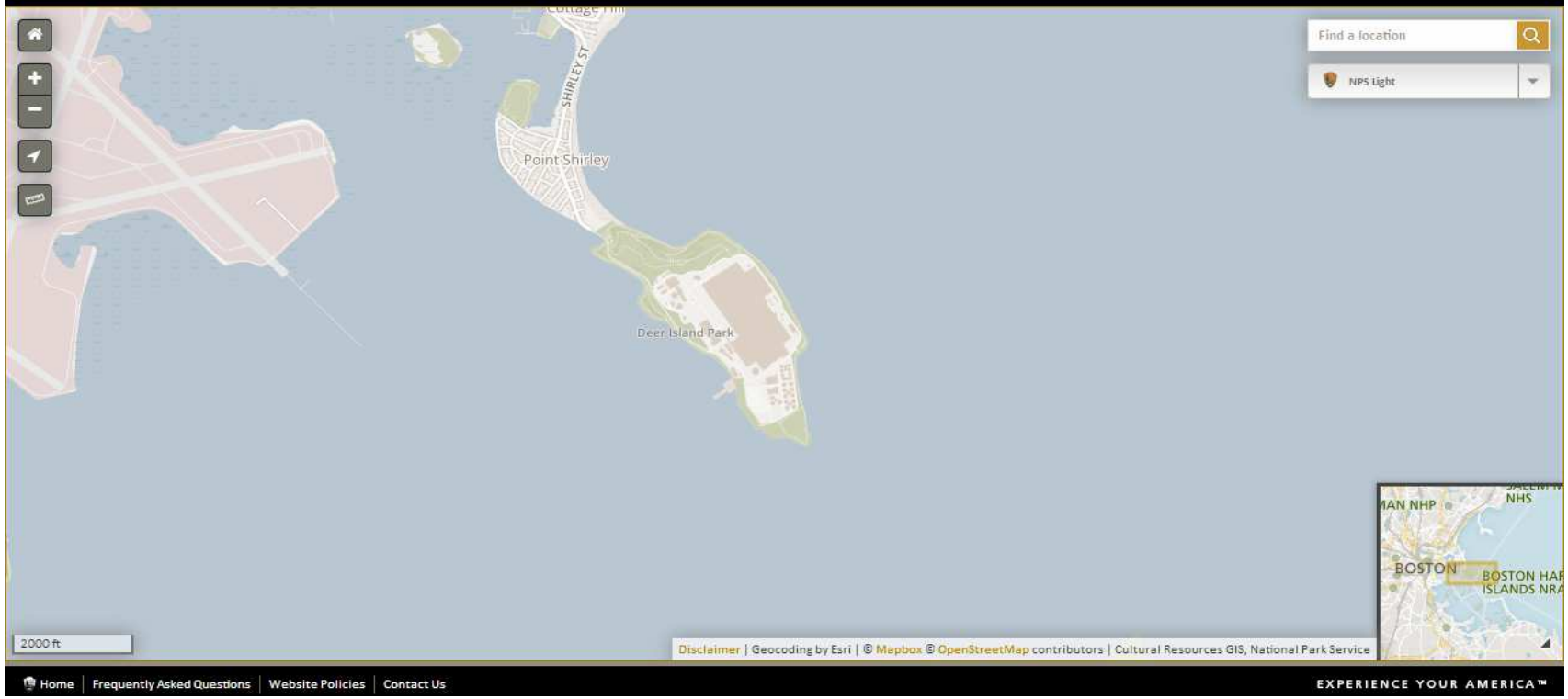
UNITED STATES NATIONAL REGISTER OF HISTORIC PLACES AND MASSACHUSETTS CULTURAL RESOURCE INFORMATION SYSTEM ONLINE DATABASE

- **National Historic Place**
- **Massachusetts Cultural Resource Information System Online Database**

National Register of Historic Places

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. Data last updated in April, 2014.

National Park Service
U.S. Department of the Interior



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Boston,Winthrop; Street Name: Taft; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
BOS.6319		6 Taft St	Boston	1908
BOS.6320		8 Taft St	Boston	1908
BOS.6321		10 Taft St	Boston	1908
BOS.6322		12 Taft St	Boston	1908
BOS.6323		14 Taft St	Boston	1908
BOS.6324		16 Taft St	Boston	1908
BOS.6325		18 Taft St	Boston	1908
BOS.6326		20 Taft St	Boston	1908
BOS.6327		22 Taft St	Boston	1908
BOS.6328		24 Taft St	Boston	1908
BOS.6329		26 Taft St	Boston	1908
BOS.6330		28 Taft St	Boston	1908
BOS.6331		30 Taft St	Boston	1908