

May 30, 2019

By Email: NPDES.Generalpermits@epa.gov

Shauna Little
EPA – Region 1, Office of Ecosystem Protection
5 Post Office Square, Suite 100
Mail Code OEP06-1
Boston, MA 02109-3912

Subject: Notice of Intent (NOI)
Remediation General Permit
236-240 Salem Street Medford, Massachusetts

Dear Ms. Little,

On behalf of the property owner, HHC One Salem LLC, and in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) in Massachusetts, MAG910000, **Cooperstown Environmental LLC** (Cooperstown) hereby submits information in support of a Notice of Intent (NOI) and supporting documentation, as required by the U.S. Environmental Protection Agency (EPA) for those discharges seeking a determination of coverage under this general permit. This notice has been updated based on EPA comments received on May 20, 2019 and changed site conditions which include the completion of a rainwater re-infiltration system at the site.

For the purposes of this general permit, HHC One Salem LLC of Salem, MA is considered the “Owner” and “Operator” of a planned discharge. This NOI was prepared in accordance with the general requirements of the NPDES and related guidance documentation provided by EPA. The effluent flow will not exceed 1 million gallons a day (MGD).

BACKGROUND

This site was granted a prior authorization to discharge (MAG910814) and a Notice of Termination was filed on March 8, 2019. The prior authorization to discharge was granted for dewatering during the excavation of petroleum contaminated soil and the construction of a foundation at the site. During the discharge, monitoring was conducted for contaminants known or believed to be present due to a prior release of gasoline at the site as well as inorganic and general chemistry parameters. Monitoring conducted during the foundation construction dewatering showed that influent concentrations of all site contaminants were below discharge limits following the completion of the removal of the petroleum contaminated soil on October 4, 2019. Dewatering and associated sampling continued until the foundation was completed in February 2019 and a Notice of Termination was filed on March 8, 2019. The sampling results from the prior discharge are attached as are the laboratory data reports.

At this time, the foundation spanning 236 and 240 Salem Street is completed but the long-term foundation dewatering system has not yet been constructed. We are seeking coverage under the RGP to dewater the foundation (via the sump pump currently installed) into the City of Medford catch basin at Court Street. The catch basin on Court Street ultimately discharges to the Mystic River along stretch MA71-02 via the City of Medford storm water system.

DEWATERING PLAN

The recently completed foundation includes a sump and pump placed on the 240 side of the foundation. The installed sump pump is a Liberty LE70 series sewage pump with an estimated pumping rate of 110 gallons per minute (gpm). Pump specifications are included in **Appendix A**. Construction plans for the site will ultimately include an on-site dry-well for re-infiltration via the sump pump. The dry well is not yet completed. While the construction of the building and additional site work continues, groundwater is entering the existing foundation and currently being discharged on-site into the recently completed rainwater collection system that has been constructed in the future parking area at the property. Rainwater is also entering the foundation during precipitation events as the building is not yet closed in. The sump pump is operating nearly continuously to prevent standing water from accumulating in the foundation.

Therefore, HHC One Salem LLC is seeking coverage under the RGP for temporary construction dewatering of the foundation via the installed sump pump until the required site work is completed and the building is closed in. The construction dewatering discharge will enter a City of Medford catch basin along Court Street which ultimately reaches the Mystic River along stretch MA71-02 as shown in **Figure 2, Appendix A**. It is anticipated that this discharge will be required throughout the spring high water table and as necessary during the construction of the building until it is closed in and/or the site dry well is completed. The location of the foundation and sump pump (which are completed) as well as the proposed dry-well and other site features are shown on **Figure 3, Appendix A**.

SAMPLING CONSIDERATIONS

Influent Concentrations

In support of the prior NOI, Cooperstown collected influent grab samples from a de-watering pit located at the bottom of the building foundation excavation in August 2018. The dewatering pit collected surface run-off and groundwater from across the footprint of the project area. Samples were submitted to New England Testing Laboratory (NetLab) of West Warwick, Rhode Island for analysis of NPDES RGP Activity Category III-G Contaminated Site Dewatering Parameters, using EPA-designated Sufficiently Sensitive Test Methods when possible. The laboratory reports are included in **Appendix B**. These sampling results demonstrated the contaminants that were present in groundwater at the site prior to excavation of contaminated soil.

The RGP dewatering discharge which included bag filtration and carbon adsorption was initiated in September 2019 and terminated in February 2019. Influent and effluent monitoring were conducted as required during the RGP. The removal of petroleum contaminated soil was completed on October 4, 2019. Monthly monitoring from mid-October through the final monitoring in January 2019 showed that influent (pre-treatment) concentrations were below RGP effluent limitations in all samples following the removal of the contaminated soil. All prior monitoring results are included in **Table 1, Appendix A**. The monitoring results from Mid-October through February are considered to be representative of expected concentrations of groundwater entering the foundation sump pump. Initial sampling of the source water and the Mystic River upgradient of the outfall are also included in **Table 1**. All laboratory reports are included in **Appendix B**.

Water had previously collected in the foundation, but with the recent completion of the rainwater collection system on-site, groundwater is no-longer accumulating in the foundation, and instead being recirculated into the rainwater collection system. The pH of the discharge from the sump pump was measured on May 28, 2019 at 7.33 Standard Units which is consistent with the pH measured during the

prior RGP monitoring. Therefore, no pH adjustment is anticipated to be necessary. The updated pH measurement is included on the NOI form.

Receiving Water

Receiving water, which is the Mystic River, was grab-sampled during at a location immediately “upstream” of the Medford Water and Sewer Municipal Separate Storm Sewer System outfall in August 2018 in support of the prior Notice of Intent. A schematic showing the location of the outfall is included in **Appendix A**. Samples were submitted to NetLab and analyzed for pH, Group A inorganic parameters, and hardness per the requirements of the RGP. Temperature of the river was measured in-situ at that time and was measured at 78 degrees F. Laboratory analytical data is included in **Appendix B**.

In accordance with requirements of the RGP for fresh water discharges, an evaluation of whether specific Water Quality Based Effluent Limitations (WQBELs) apply to this project was made. The documentation for this determination is included in **Appendix C**. In accordance with the receiving water sampling information and 7Q10 low flow estimations for the Mystic River at the discharge location, there are no WQBELs that apply and discharge limitations for the project are Technology Based Effluent Limitations (TBELs). Permission received from MADEP for the use of a dilution factor is also included in **Appendix C**. An excel copy of the calculation worksheet is also included with this NOI.

TREATMENT

As shown in **Table 1, Appendix A**, influent concentrations were below the TBELs for prior RGP sampling conducted from mid-October 2018 to January 2019 and no filtration or carbon adsorption is anticipated to be required during this discharge. Additionally, the average pH during the prior discharge was 6.8 standard units and the current in-situ pH measured on May 28, 2019 of the sump pump effluent is 7.33 standard units. Therefore, no pH adjustment is anticipated to be required.

If needed, as indicated by effluent sampling results, treatment processes will be included to meet the effluent limitations specified in EPA’s written discharge authorization. Appropriate administrative actions following Corrective Actions, including submission of a Notice of Change and Best Management Practices Plan (BMPP) modifications, will be conducted as required by the permit. The discharge subject to this NOI is expected to be of a duration of less than a year however, annual BMPP certifications will be completed and kept onsite in accordance with RGP requirements if needed.

Since the discharge to the Mystic River is indirect, the Owner has sought authorization to discharge to the Medford Water and Sewer Commission. The Medford requirements for construction discharge through the municipal storm water system are included in **Appendix F**.

RGP NOTICE OF INTENT FORM

A 2017 RGP NOI Form has been prepared and updated in support of this submittal and is provided in **Appendix A**. **Appendix A** figures detail the receiving water and discharge information, as required by Appendix IV Part I.B and I.D. The certification requirements specified in Appendix IV Part I.J have been completed in the NOI Form itself, and the form as been signed by a representative of the Owner, HHC One Salem LLC.

SUPPORTING INFORMATION

In addition to the above-mentioned documentation, the following information has also been included in this submittal:

- Special Eligibility Determination for endangered species are included in **Appendix D**;
- Special Eligibility Determination for historic preservations is included in **Appendix E**;
- The Medford Water and Sewer Commission Discharge Requirements are included in **Appendix F**.

The NOI and appendices are attached. If you have any questions or require additional information, please contact me at 978-470-4755, or by email at jeanne@cooperstownenv.com.

Very sincerely yours,
Cooperstown Environmental LLC



Jeanne Westervelt, PG, LSP
Technical Services Director

Attachments

- Appendix A — RGP Notice of Intent with Figures, Table, Pump Specifications**
- Appendix B — Laboratory Analytical Reports**
- Appendix C — WQBEL Applicability Determination from DEP with spreadsheet**
- Appendix D — Endangered Species Act Documentation**
- Appendix E — National Historic Preservation Act Documentation**
- Appendix F — Medford Water and Sewer Commission Construction Discharge Requirements**

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

A. General site information:

1. Name of site:	Site address: Street: <table border="1" data-bbox="888 475 1950 557"> <tr> <td data-bbox="888 475 1591 557">City:</td><td data-bbox="1591 475 1722 557">State:</td><td data-bbox="1722 475 1950 557">Zip:</td></tr> </table>	City:	State:	Zip:									
City:	State:	Zip:											
2. Site owner Owner is (check one): <input type="checkbox"/> Federal <input type="checkbox"/> State/Tribal <input type="checkbox"/> Private <input type="checkbox"/> Other; if so, specify:	<table border="1"> <tr> <td colspan="3" data-bbox="888 557 1950 626">Contact Person:</td></tr> <tr> <td data-bbox="888 626 1461 696">Telephone:</td><td colspan="2" data-bbox="1461 626 1950 696">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 696 1950 797">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 797 1591 875">City:</td><td data-bbox="1591 797 1722 875">State:</td><td data-bbox="1722 797 1950 875">Zip:</td></tr> </table>	Contact Person:			Telephone:	Email:		Mailing address: Street:			City:	State:	Zip:
Contact Person:													
Telephone:	Email:												
Mailing address: Street:													
City:	State:	Zip:											
3. Site operator, if different than owner	<table border="1"> <tr> <td colspan="3" data-bbox="888 875 1950 935">Contact Person:</td></tr> <tr> <td data-bbox="888 935 1461 995">Telephone:</td><td colspan="2" data-bbox="1461 935 1950 995">Email:</td></tr> <tr> <td colspan="3" data-bbox="888 995 1950 1096">Mailing address: Street:</td></tr> <tr> <td data-bbox="888 1096 1591 1151">City:</td><td data-bbox="1591 1096 1722 1151">State:</td><td data-bbox="1722 1096 1950 1151">Zip:</td></tr> </table>	Contact Person:			Telephone:	Email:		Mailing address: Street:			City:	State:	Zip:
Contact Person:													
Telephone:	Email:												
Mailing address: Street:													
City:	State:	Zip:											
4. NPDES permit number assigned by EPA: NPDES permit is (check all that apply): <input type="checkbox"/> RGP <input type="checkbox"/> DGP <input type="checkbox"/> CGP <input type="checkbox"/> MSGP <input type="checkbox"/> Individual NPDES permit <input type="checkbox"/> Other; if so, specify:	5. Other regulatory program(s) that apply to the site (check all that apply): <table border="0"> <tr> <td data-bbox="888 1211 1461 1271"><input type="checkbox"/> MA Chapter 21e; list RTN(s):</td><td data-bbox="1461 1211 1950 1271"><input type="checkbox"/> CERCLA</td></tr> <tr> <td data-bbox="888 1271 1461 1331"><input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit:</td><td data-bbox="1461 1271 1950 1331"><input type="checkbox"/> UIC Program</td></tr> <tr> <td></td><td data-bbox="1461 1331 1950 1391"><input type="checkbox"/> POTW Pretreatment</td></tr> <tr> <td></td><td data-bbox="1461 1391 1950 1451"><input type="checkbox"/> CWA Section 404</td></tr> </table>	<input type="checkbox"/> MA Chapter 21e; list RTN(s):	<input type="checkbox"/> CERCLA	<input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit:	<input type="checkbox"/> UIC Program		<input type="checkbox"/> POTW Pretreatment		<input type="checkbox"/> CWA Section 404				
<input type="checkbox"/> MA Chapter 21e; list RTN(s):	<input type="checkbox"/> CERCLA												
<input type="checkbox"/> NH Groundwater Management Permit or Groundwater Release Detection Permit:	<input type="checkbox"/> UIC Program												
	<input type="checkbox"/> POTW Pretreatment												
	<input type="checkbox"/> CWA Section 404												

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Receiving water is (check any that apply): <input type="checkbox"/> Outstanding Resource Water <input type="checkbox"/> Ocean Sanctuary <input type="checkbox"/> territorial sea <input type="checkbox"/> Wild and Scenic River		
2. Has the operator attached a location map in accordance with the instructions in B, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No Are sensitive receptors present near the site? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, specify:		
3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.		
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.		
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.		
6. Has the operator received confirmation from the appropriate State for the 7Q10 and dilution factor indicated? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, indicate date confirmation received:		
7. Has the operator attached a summary of receiving water sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No		

C. Source water information:

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

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

D. Discharge information

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia								Report mg/L	---
Chloride								Report µg/l	---
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	---
Antimony								206 µg/L	
Arsenic								104 µg/L	
Cadmium								10.2 µg/L	
Chromium III								323 µg/L	
Chromium VI								323 µg/L	
Copper								242 µg/L	
Iron								5,000 µg/L	
Lead								160 µg/L	
Mercury								0.739 µg/L	
Nickel								1,450 µg/L	
Selenium								235.8 µg/L	
Silver								35.1 µg/L	
Zinc								420 µg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX								100 µg/L	---
Benzene								5.0 µg/L	---
1,4 Dioxane								200 µg/L	---
Acetone								7.97 mg/L	---
Phenol								1,080 µg/L	

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								4.4 µg/L	
1,2 Dichlorobenzene								600 µg/L	---
1,3 Dichlorobenzene								320 µg/L	---
1,4 Dichlorobenzene								5.0 µg/L	---
Total dichlorobenzene								763 µg/L in NH	---
1,1 Dichloroethane								70 µg/L	---
1,2 Dichloroethane								5.0 µg/L	---
1,1 Dichloroethylene								3.2 µg/L	---
Ethylene Dibromide								0.05 µg/L	---
Methylene Chloride								4.6 µg/L	---
1,1,1 Trichloroethane								200 µg/L	---
1,1,2 Trichloroethane								5.0 µg/L	---
Trichloroethylene								5.0 µg/L	---
Tetrachloroethylene								5.0 µg/L	
cis-1,2 Dichloroethylene								70 µg/L	---
Vinyl Chloride								2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates								190 µg/L	
Diethylhexyl phthalate								101 µg/L	
Total Group I PAHs								1.0 µg/L	---
Benzo(a)anthracene								As Total PAHs	
Benzo(a)pyrene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									

[illegible]

E. Treatment system information

<p>1. Indicate the type(s) of treatment that will be applied to effluent prior to discharge: (check all that apply)</p> <p><input type="checkbox"/> Adsorption/Absorption <input type="checkbox"/> Advanced Oxidation Processes <input type="checkbox"/> Air Stripping <input type="checkbox"/> Granulated Activated Carbon (“GAC”)/Liquid Phase Carbon Adsorption</p> <p><input type="checkbox"/> Ion Exchange <input type="checkbox"/> Precipitation/Coagulation/Flocculation <input type="checkbox"/> Separation/Filtration <input type="checkbox"/> Other; if so, specify:</p>	
<p>2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.</p> <p>Identify each major treatment component (check any that apply):</p> <p><input type="checkbox"/> Fractionation tanks <input type="checkbox"/> Equalization tank <input type="checkbox"/> Oil/water separator <input type="checkbox"/> Mechanical filter <input type="checkbox"/> Media filter</p> <p><input type="checkbox"/> Chemical feed tank <input type="checkbox"/> Air stripping unit <input type="checkbox"/> Bag filter <input type="checkbox"/> Other; if so, specify:</p> <p>Indicate if either of the following will occur (check any that apply):</p> <p><input type="checkbox"/> Chlorination <input type="checkbox"/> De-chlorination</p>	
<p>3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component.</p> <p>Indicate the most limiting component:</p> <p>Is use of a flow meter feasible? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No, if so, provide justification:</p>	
<p>Provide the proposed maximum effluent flow in gpm.</p>	
<p>Provide the average effluent flow in gpm.</p>	
<p>If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:</p>	
<p>4. Has the operator attached a schematic of flow in accordance with the instructions in E, above? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	

F. Chemical and additive information

<p>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)</p> <p><input type="checkbox"/> Algaecides/biocides <input type="checkbox"/> Antifoams <input type="checkbox"/> Coagulants <input type="checkbox"/> Corrosion/scale inhibitors <input type="checkbox"/> Disinfectants <input type="checkbox"/> Flocculants <input type="checkbox"/> Neutralizing agents <input type="checkbox"/> Oxidants <input type="checkbox"/> Oxygen <input type="checkbox"/> scavengers <input type="checkbox"/> pH conditioners <input type="checkbox"/> Bioremedial agents, including microbes <input type="checkbox"/> Chlorine or chemicals containing chlorine <input type="checkbox"/> Other; if so, specify:</p>
<p>2. Provide the following information for each chemical/additive, using attachments, if necessary:</p> <p>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)).</p>
<p>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): <input type="checkbox"/> Yes <input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No</p>

G. Endangered Species Act eligibility determination

<p>1. Indicate under which criterion the discharge(s) is eligible for coverage under this general permit:</p> <p><input type="checkbox"/> 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”.</p> <p><input type="checkbox"/> 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): <input type="checkbox"/> Yes <input type="checkbox"/> No; if no, is consultation underway? (check one): <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p><input type="checkbox"/> 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) <input type="checkbox"/> the operator <input type="checkbox"/> EPA <input type="checkbox"/> Other; if so, specify:</p>

- ☐ **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: I certify under the penalty of law that a Best Management Practices Plan (BMPP) meeting the requirements of this general permit has been developed and implemented for the existing discharge. Should the terms set forth in USEPA's written authorization to discharge under this general permit result in the need for BMPP modification, said revisions will be made and implemented upon receipt of EPA's written authorization.

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: 5/28/2019

Print Name and Title: **Milan Patel, HHC One Salem**

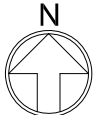


Site Locus

236 Salem Street
Medford, Massachusetts

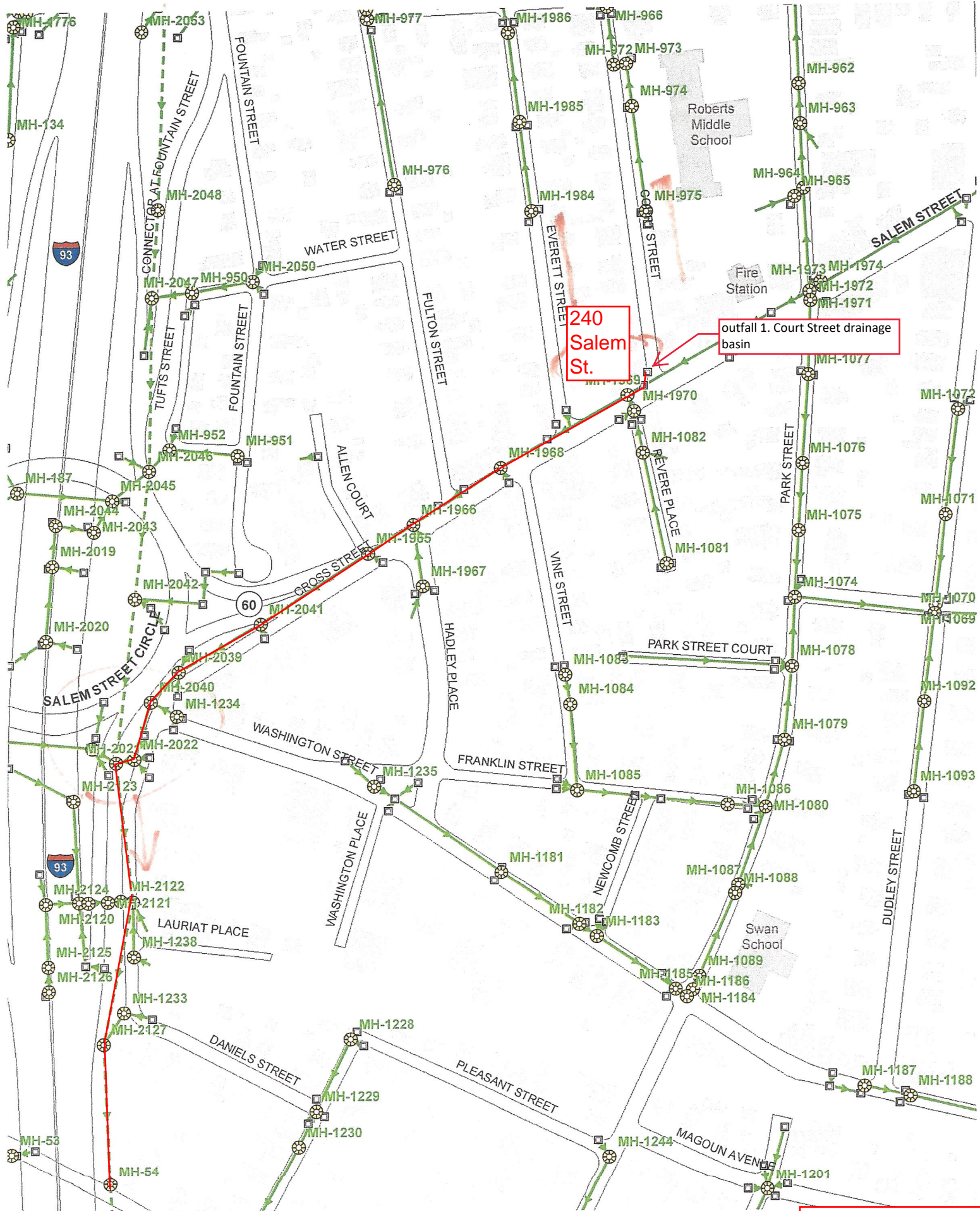
COOPERSTOWN
environmental
23 Main Street • Andover, MA • 01810
Phone (978) 470-4755 • Fax (978) 470-4756
www.cooperstownenv.com

FIGURE 1



SCALE: 1"=2000'

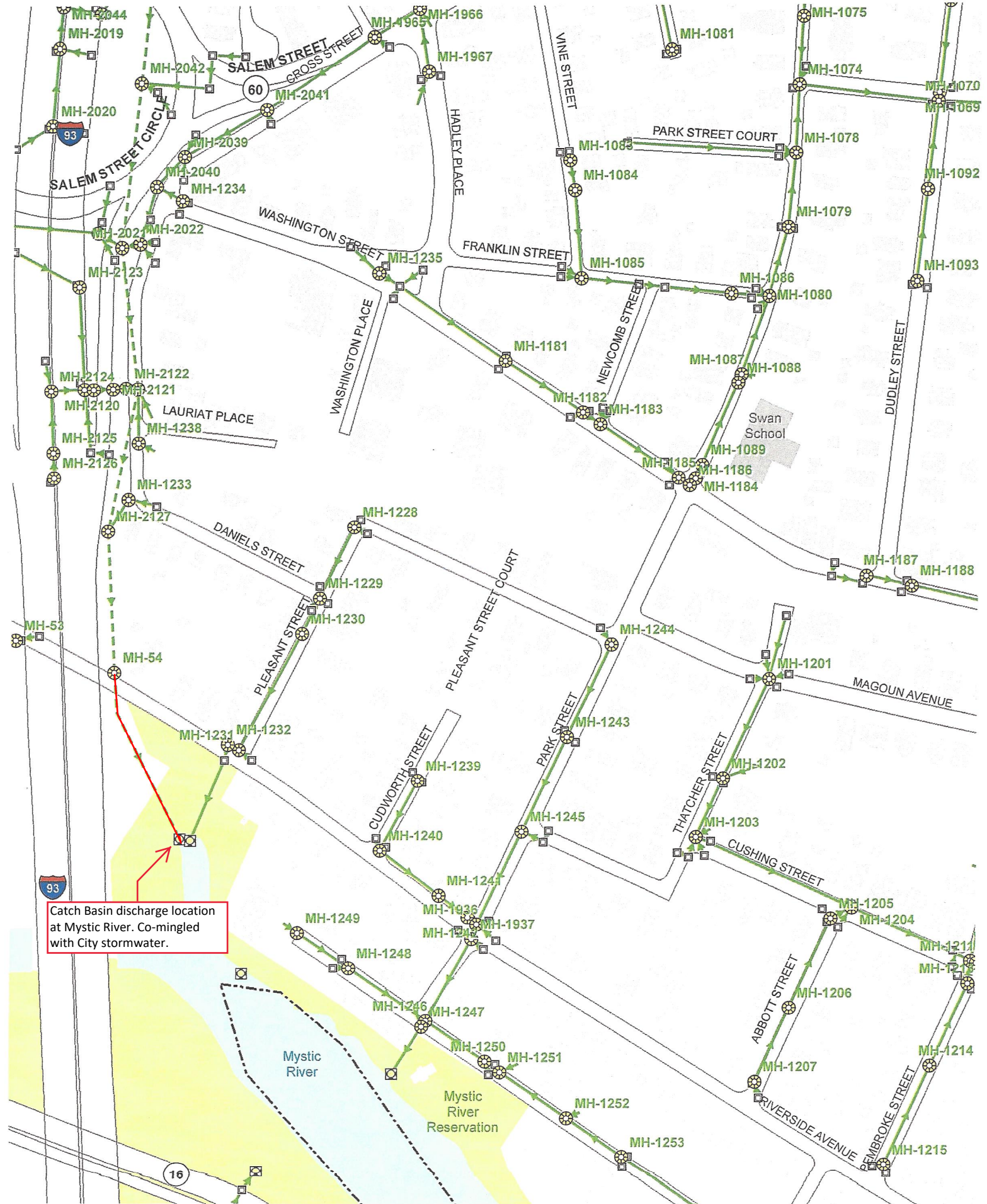
SOURCE: USGS



Continued



Figure 2
Drainage Schematic
From Site to
Discharge Outfall



Catch Basin discharge location at Mystic River. Co-mingled with City stormwater.

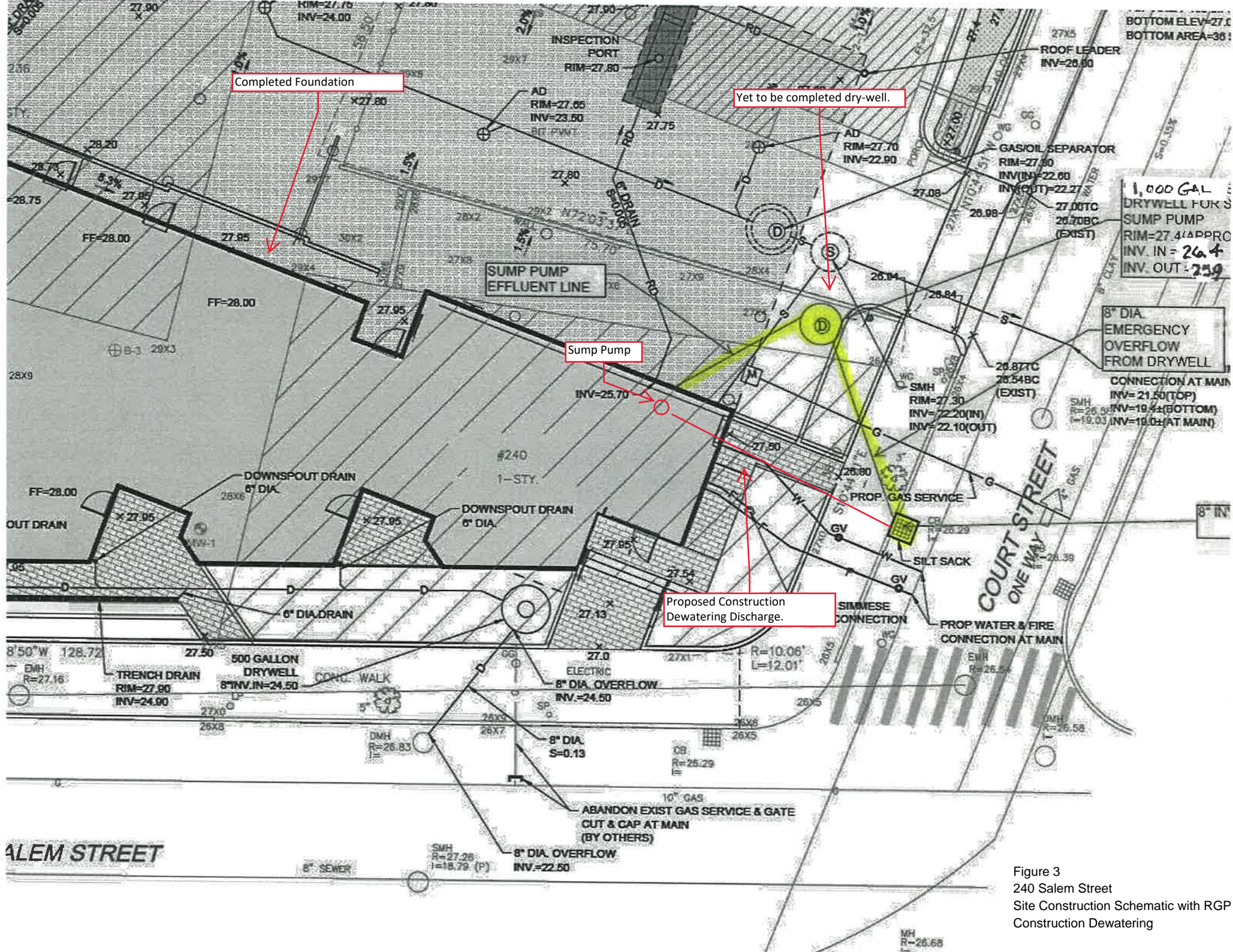


Figure 3
240 Salem Street
Site Construction Schematic with RGP
Construction Dewatering

Table 1

HHC One Salem LLC, Huntaton Development 27 Congress Street, Salem, MA

[illegible]

Notes:

ND= Not Detected, < value
NA=Not Applied

effluent highlighted in blue

Bold values exceed a limitation

Liberty Pumps®

LE70-Series

Sewage Pumps

**3/4 hp
2" Solids-Handling**

Features:

- Rugged 2 vane, semi-open cast iron impellers
- Cast iron housings and volute with all stainless and brass fasteners
- 416 stainless steel rotor shaft
 - Oil-filled, hermetically sealed motors
- Built-in thermal protection on single phase models
- 2" or 3" flanged discharge
- Permanently lubricated upper and lower ball bearings
 - Unitized shaft seals
- Single float mechanical level control with series plug for manual bypass operation—standard on single-phase automatic models
- Adjustable pumping range
- Quick-disconnect 10' standard power cord allows replacement of cord in seconds without breaking seals to motor. (25' length optional)



Models:

SINGLE PHASE

LE71M 115V, 12a, manual
LE71A 115V, 12a, automatic
LE72M 208-230V, 6a, manual
LE72A 208-230V, 6a, automatic

3-PHASE

LE73M 208-230V, 4.1a, manual*
LE74M 440-480V, 2.1a, manual*

*NOTE: 3-phase models require control panel for automatic operation. See sewage accessories literature for complete information on all Simplex and Duplex controls.

innovate. evolve.

LE70-SERIES TECHNICAL SPECIFICATIONS

ALL MODELS: 3/4 HP, 1725 RPM

PUMP

The pump(s) shall be model _____ as manufactured by Liberty Pumps, Bergen, N.Y. or equal. The pump(s) shall have a capacity of 110± GPM at a total dynamic head of 12± feet. Motor size shall be 3/4 horsepower, _____ phase, 60 hz. and _____ volt operation.

MOTOR

The pump motor shall be of the submersible type, oil filled, and hermetically sealed. Single phase motors shall have thermal overload protection embedded in the windings, and shall automatically reset when motor cools. Three-phase motors shall have heat breakers incorporated into the control panel, properly sized for the horsepower and amperage of the pump(s).

The rotor shaft shall be made of 416 stainless steel and shall be supported by upper and lower ball bearings.

The power cord shall be of the quick-disconnect design.

IMPELLER

The pump impeller shall be cast iron, 2 vane, semi-open, and shall be capable of passing a 2" spherical solid.

SEAL

The shaft seal shall be of the carbon/ceramic unitized design, with BUNA N elastomers and stainless housings.

EXTERNAL CONSTRUCTION

The pump volute, legs and motor housing shall be heavy gray iron castings, class 25 or better. All castings shall be powder coated before assembly.

All fasteners shall be of 300-series stainless steel.

LEVEL CONTROL

The pump shall be controlled by an adjustable mechanical switch sealed in a PVC float, and shall have a series plug for manual bypass operation.

	MODELS	VOLTS	PHASE	AMPS	DISCHARGE	AUTOMATIC
SINGLE PHASE	LE71M2	115	1	12	2" FLANGED	NO
	LE71A2	115	1	12	2" FLANGED	YES
	LE72M2	208-230	1	6	2" FLANGED	NO
	LE72A2	208-230	1	6	2" FLANGED	YES
	LE71M3	115	1	12	3" FLANGED	NO
	LE71A3	115	1	12	3" FLANGED	YES
	LE72M3	208-230	1	6	3" FLANGED	NO
	LE72A3	208-230	1	6	3" FLANGED	YES
3-PHASE	LE73M2	208-230	3	4.1	2" FLANGED	NO
	LE74M2	440-480	3	2.1	2" FLANGED	NO
	LE73M3	208-230	3	4.1	3" FLANGED	NO
	LE74M3	440-480	3	2.1	3" FLANGED	NO

10' cord standard on single phase models. For 25' cord option, add a "-2" suffix to model number.

Example: LE71A2-2 for Model LE71A2 with 25' cord. 25' cord is standard on 3-phase models.

NOTE: 3-Phase models require panel for automatic operation. See sewage accessories literature for complete information on all simplex and duplex controls.

DIMENSIONAL DATA:

Weight: LE71M: 60 LBS.

Height: 14.1"

Major Width: 12.5"

Maximum fluid temperature 140° F.

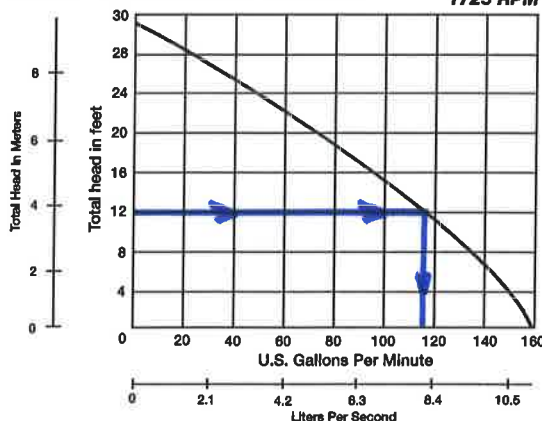
Dual Safety certification for the United States and Canada.



Specifications are subject to change without notice.

PERFORMANCE CURVE

1725 RPM





New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8H27034
Client Project: 236 Salem St, Medford, MA

Report Date: 28-August-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 08/27/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8H27034. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8H27034-01	Source Water	Water	08/27/2018	08/27/2018
8H27034-02	Receiving Water	Water	08/27/2018	08/27/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Receiving Water (Lab Number: 8H27034-02)**Analysis**

Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Nickel
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Zinc

Method

SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA 200.7
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 200.7

Source Water (Lab Number: 8H27034-01)**Analysis**

Acid Base/Neutral Extractables
Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Methanol and Ethanol
Nickel
Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine

Method

EPA 625.1
SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA-8100-mod
EPA 200.7
EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G

Request for Analysis (continued)

Source Water (Lab Number: 8H27034-01) (continued)

Analysis

Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Sample was reported with elevated detection limits due to the foaming nature of the sample.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Source Water
Lab Number: 8H27034-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	08/28/18 7:44	08/28/18 13:43

Results: Calculation

Sample: Receiving Water
Lab Number: 8H27034-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	08/28/18 7:44	08/28/18 13:46

Results: General Chemistry**Sample: Source Water****Lab Number: 8H27034-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.2		0.1	mg/L	08/27/18	08/27/18
Chloride	368		20	mg/L	08/27/18	08/27/18
Cyanide	ND		0.005	mg/L	08/28/18	08/28/18
Hexavalent chromium	ND		0.01	mg/L	08/27/18 16:30	08/27/18 16:30
pH	7.9		0.1	SU	08/27/18 17:00	08/27/18 17:00
Oil & Grease SGT	2		2	mg/L	08/27/18	08/27/18
Total Residual Chlorine	0.04		0.01	mg/L	08/27/18 17:45	08/27/18 17:45
Total Suspended Solids	28		2	mg/L	08/27/18	08/27/18

Results: General Chemistry

Sample: Receiving Water
Lab Number: 8H27034-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	ND		0.1	mg/L	08/27/18	08/27/18
Chloride	255		10	mg/L	08/27/18	08/27/18
Cyanide	ND		0.005	mg/L	08/28/18	08/28/18
Hexavalent chromium	ND		0.01	mg/L	08/27/18 16:30	08/27/18 16:30
pH	7.5		0.1	SU	08/27/18 17:00	08/27/18 17:00
Total Residual Chlorine	ND		0.01	mg/L	08/27/18 17:45	08/27/18 17:45
Total Suspended Solids	8		2	mg/L	08/27/18	08/27/18

Results: Total Metals**Sample: Source Water****Lab Number: 8H27034-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	367		0.125	mg/L	08/28/18	08/28/18
Antimony	ND		0.005	mg/L	08/28/18	08/28/18
Arsenic	ND		0.010	mg/L	08/28/18	08/28/18
Cadmium	ND		0.004	mg/L	08/28/18	08/28/18
Calcium	135		0.05	mg/L	08/28/18	08/28/18
Chromium	ND		0.005	mg/L	08/28/18	08/28/18
Copper	0.009		0.005	mg/L	08/28/18	08/28/18
Iron	1.74		0.050	mg/L	08/28/18	08/28/18
Lead	0.009		0.005	mg/L	08/28/18	08/28/18
Magnesium	7.29		0.05	mg/L	08/28/18	08/28/18
Mercury	ND		0.0002	mg/L	08/28/18	08/28/18
Nickel	ND		0.005	mg/L	08/28/18	08/28/18
Selenium	ND		0.010	mg/L	08/28/18	08/28/18
Silver	ND		0.005	mg/L	08/28/18	08/28/18
Zinc	0.026		0.020	mg/L	08/28/18	08/28/18

Results: Total Metals

Sample: Receiving Water
Lab Number: 8H27034-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	144		0.125	mg/L	08/28/18	08/28/18
Antimony	ND		0.005	mg/L	08/28/18	08/28/18
Arsenic	ND		0.010	mg/L	08/28/18	08/28/18
Cadmium	ND		0.004	mg/L	08/28/18	08/28/18
Calcium	42.5		0.05	mg/L	08/28/18	08/28/18
Chromium	ND		0.005	mg/L	08/28/18	08/28/18
Copper	0.007		0.005	mg/L	08/28/18	08/28/18
Iron	0.558		0.050	mg/L	08/28/18	08/28/18
Lead	ND		0.005	mg/L	08/28/18	08/28/18
Magnesium	9.11		0.05	mg/L	08/28/18	08/28/18
Mercury	ND		0.0002	mg/L	08/28/18	08/28/18
Nickel	ND		0.005	mg/L	08/28/18	08/28/18
Selenium	ND		0.010	mg/L	08/28/18	08/28/18
Silver	ND		0.005	mg/L	08/28/18	08/28/18
Zinc	0.033		0.020	mg/L	08/28/18	08/28/18

Results: Volatile Organic Compounds

Sample: Source Water

Lab Number: 8H27034-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		2.5	ug/l	08/27/18	08/27/18
Benzene	ND		5	ug/l	08/27/18	08/27/18
Toluene	ND		5	ug/l	08/27/18	08/27/18
tert-Butyl alcohol	ND		25	ug/l	08/27/18	08/27/18
Total xylenes	ND		5	ug/l	08/27/18	08/27/18
o-Xylene	ND		5	ug/l	08/27/18	08/27/18
m&p-Xylene	ND		10	ug/l	08/27/18	08/27/18
tert-Amyl methyl ether	ND		5	ug/l	08/27/18	08/27/18
Ethylbenzene	ND		5	ug/l	08/27/18	08/27/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>97.0%</i>		<i>70-130</i>		08/27/18	08/27/18
<i>1,2-Dichloroethane-d4</i>	<i>111%</i>		<i>70-130</i>		08/27/18	08/27/18
<i>Toluene-d8</i>	<i>99.9%</i>		<i>70-130</i>		08/27/18	08/27/18

Results: Semivolatile organic compounds

Sample: Source Water
Lab Number: 8H27034-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		50	mg/L	08/28/18	08/28/18

Results: Base/Neutral & Acid Extractables

Sample: Source Water

Lab Number: 8H27034-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acenaphthene	ND		0.5	ug/l	08/28/18	08/28/18
Acenaphthylene	ND		0.5	ug/l	08/28/18	08/28/18
Anthracene	ND		0.5	ug/l	08/28/18	08/28/18
Benzo(a)anthracene	ND		0.5	ug/l	08/28/18	08/28/18
Benzo(a)pyrene	ND		0.5	ug/l	08/28/18	08/28/18
Benzo(b)fluoranthene	ND		0.5	ug/l	08/28/18	08/28/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	08/28/18	08/28/18
Benzo(k)fluoranthene	ND		0.5	ug/l	08/28/18	08/28/18
Chrysene	ND		0.5	ug/l	08/28/18	08/28/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	08/28/18	08/28/18
Fluoranthene	ND		0.5	ug/l	08/28/18	08/28/18
Fluorene	ND		0.5	ug/l	08/28/18	08/28/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	08/28/18	08/28/18
Naphthalene	ND		0.5	ug/l	08/28/18	08/28/18
Phenanthrene	ND		0.5	ug/l	08/28/18	08/28/18
Pyrene	ND		0.5	ug/l	08/28/18	08/28/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	69.9%		15-130		08/28/18	08/28/18
<i>p-Terphenyl-d14</i>	88.2%		50-130		08/28/18	08/28/18
<i>2-Fluorobiphenyl</i>	74.8%		35-130		08/28/18	08/28/18
<i>Phenol-d6</i>	18.5%		10-83		08/28/18	08/28/18
<i>2,4,6-Tribromophenol</i>	109%		44-120		08/28/18	08/28/18
<i>2-Fluorophenol</i>	27.4%		10-81		08/28/18	08/28/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1040 - Oil & Grease										
Blank (B8H1040-BLK1)					Prepared & Analyzed: 08/27/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8H1040-BS1)					Prepared & Analyzed: 08/27/18					
Oil & Grease SGT	19		2	mg/L	20.0		95.0	64-132		
Batch: B8H1049 - Ammonia										
Blank (B8H1049-BLK1)					Prepared & Analyzed: 08/27/18					
Ammonia	ND		0.1	mg/L						
Blank (B8H1049-BLK2)					Prepared & Analyzed: 08/27/18					
Ammonia	ND		0.1	mg/L						
LCS (B8H1049-BS1)					Prepared & Analyzed: 08/27/18					
Ammonia	0.9		0.1	mg/L	1.00		90.4	90-110		
LCS (B8H1049-BS2)					Prepared & Analyzed: 08/27/18					
Ammonia	1.0		0.1	mg/L	1.00		99.4	90-110		
Duplicate (B8H1049-DUP1)					Prepared & Analyzed: 08/27/18					
Ammonia	ND		0.1	mg/L		ND				20
Matrix Spike (B8H1049-MS1)					Prepared & Analyzed: 08/27/18					
Ammonia	0.9		0.1	mg/L	1.00	ND	87.1	80-120		
Batch: B8H1050 - Hexavalent Chrome										
Blank (B8H1050-BLK1)					Prepared & Analyzed: 08/27/18					
Hexavalent chromium	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1050 - Hexavalent Chrome (Continued)										
Blank (B8H1050-BLK2)										
Hexavalent chromium	ND		0.01	mg/L	Prepared & Analyzed: 08/27/18					
LCS (B8H1050-BS1)										
Hexavalent chromium	0.48		0.01	mg/L	0.500		95.4	90-110		
LCS (B8H1050-BS2)										
Hexavalent chromium	0.10		0.01	mg/L	0.100		96.0	90-110		
LCS (B8H1050-BS3)										
Hexavalent chromium	0.48		0.01	mg/L	0.500		96.2	90-110		
Duplicate (B8H1050-DUP1)										
Hexavalent chromium	ND		0.01	mg/L	Source: 8H27025-01		Prepared & Analyzed: 08/27/18		ND	20
Matrix Spike (B8H1050-MS1)										
Hexavalent chromium	0.40		0.01	mg/L	0.500	ND	81.0	80-120		
Batch: B8H1061 - TSS										
Blank (B8H1061-BLK1)										
Total Suspended Solids	ND		2	mg/L	Prepared & Analyzed: 08/27/18					
LCS (B8H1061-BS1)										
Total Suspended Solids	902		10	mg/L	1000		90.2	90-110		
Duplicate (B8H1061-DUP1)										
Total Suspended Solids	136		4	mg/L	Source: 8H27046-01		Prepared & Analyzed: 08/27/18		137	0.587 20

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1063 - Chloride										
Blank (B8H1063-BLK1)					Prepared & Analyzed: 08/27/18					
Chloride	ND		1	mg/L						
LCS (B8H1063-BS1)					Prepared & Analyzed: 08/27/18					
Chloride	59		1	mg/L	60.6		98.0	90-110		
Duplicate (B8H1063-DUP1)					Prepared & Analyzed: 08/27/18					
Chloride	358		20	mg/L		368			2.60	20
Matrix Spike (B8H1063-MS1)					Prepared & Analyzed: 08/27/18					
Chloride	453		20	mg/L	60.6	368	140	80-120		
Batch: B8H1066 - Residual chlorine										
Blank (B8H1066-BLK1)					Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8H1066-BLK2)					Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8H1066-BS1)					Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	0.50		0.01	mg/L	0.500		99.4	90-110		
LCS (B8H1066-BS2)					Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	0.50		0.01	mg/L	0.500		101	90-110		
Duplicate (B8H1066-DUP1)					Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	ND		0.01	mg/L		ND				20

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1066 - Residual chlorine (Continued)										
Matrix Spike (B8H1066-MS1)		Source: 8H27034-02			Prepared & Analyzed: 08/27/18					
Total Residual Chlorine	0.46		0.01	mg/L	0.500	ND	91.4	80-120		
Batch: B8H1077 - pH										
LCS (B8H1077-BS1)					Prepared & Analyzed: 08/27/18					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B8H1077-BS2)					Prepared & Analyzed: 08/27/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8H1077-DUP1)		Source: 8H27039-01			Prepared & Analyzed: 08/27/18					
pH	7.0		0.1	SU		7.1			0.852	20
Batch: B8H1093 - Cyanide										
Blank (B8H1093-BLK1)					Prepared & Analyzed: 08/28/18					
Cyanide	ND		0.01	mg/L						
Blank (B8H1093-BLK2)					Prepared & Analyzed: 08/28/18					
Cyanide	ND		0.01	mg/L						
LCS (B8H1093-BS1)					Prepared & Analyzed: 08/28/18					
Cyanide	0.10		0.01	mg/L	0.100		104	90-110		
LCS (B8H1093-BS2)					Prepared & Analyzed: 08/28/18					
Cyanide	0.11		0.01	mg/L	0.100		106	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1093 - Cyanide (Continued)										
LCS (B8H1093-BS3)										
Cyanide	0.10		0.01	mg/L	0.100		104	90-110		
Duplicate (B8H1093-DUP1)										
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8H1093-MS1)										
Cyanide	0.11		0.01	mg/L	0.100	ND	114	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1055 - Hot plate acid digestion waters										
Blank (B8H1055-BLK1)					Prepared & Analyzed: 08/28/18					
Chromium	ND		0.001	mg/L						
Nickel	ND		0.001	mg/L						
Lead	ND		0.001	mg/L						
Iron	ND		0.012	mg/L						
Copper	ND	J	0.005	mg/L						
Arsenic	ND		0.002	mg/L						
Magnesium	ND		0.01	mg/L						
Calcium	ND		0.01	mg/L						
Antimony	ND		0.001	mg/L						
Silver	ND		0.001	mg/L						
Cadmium	ND		0.001	mg/L						
Selenium	ND		0.002	mg/L						
Zinc	ND		0.005	mg/L						
LCS (B8H1055-BS1)					Prepared & Analyzed: 08/28/18					
Calcium	11.0		0.05	mg/L	10.0		110	85-115		
Arsenic	0.217		0.010	mg/L	0.200		109	85-115		
Cadmium	1.04		0.004	mg/L	1.00		104	85-114		
Chromium	1.07		0.005	mg/L	1.00		107	85-115		
Magnesium	11.1		0.05	mg/L	10.0		111	85-115		
Iron	11.1		0.050	mg/L	10.0		111	85-115		
Silver	0.399		0.005	mg/L	0.400		99.8	85-115		
Zinc	1.08		0.020	mg/L	1.00		108	85-115		
Nickel	1.05		0.005	mg/L	1.00		105	85-112		
Lead	1.14		0.005	mg/L	1.00		114	85-115		
Selenium	0.202		0.010	mg/L	0.200		101	85-115		
Antimony	1.13		0.005	mg/L	1.00		113	85-115		
Copper	1.02		0.020	mg/L	1.00		102	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: B8H1103 - Hot plate acid digestion waters										
Blank (B8H1103-BLK1)					Prepared & Analyzed: 08/28/18					
Mercury	ND		0.0002	mg/L						
LCS (B8H1103-BS1)					Prepared & Analyzed: 08/28/18					
Mercury	1.02			ug/l	1.00		102	85-115		

Quality Control (Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1073 - Purge-Trap										
Blank (B8H1073-BLK1)					Prepared & Analyzed: 08/27/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<hr/>										
<i>Surrogate: 4-Bromofluorobenzene</i>			47.5	ug/l	50.0		95.0	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			48.0	ug/l	50.0		96.0	70-130		
<i>Surrogate: Toluene-d8</i>			55.2	ug/l	50.0		110	70-130		
<hr/>										
LCS (B8H1073-BS1)					Prepared & Analyzed: 08/27/18					
Benzene	19			ug/l	20.0		96.5	65-135		
Toluene	19			ug/l	20.0		95.8	70-130		
tert-Butyl alcohol	23			ug/l	20.0		116	70-130		
Total xylenes	50		1	ug/l				70-130		
o-Xylene	16			ug/l	20.0		77.8	70-130		
m&p-Xylene	34			ug/l	40.0		86.2	70-130		
tert-Amyl methyl ether	25			ug/l	20.0		127	70-130		
Ethylbenzene	14			ug/l	20.0		72.0	60-140		
<hr/>										
<i>Surrogate: 4-Bromofluorobenzene</i>			51.4	ug/l	50.0		103	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			49.0	ug/l	50.0		98.0	70-130		
<i>Surrogate: Toluene-d8</i>			54.5	ug/l	50.0		109	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1097 - EPA 3580A										
Blank (B8H1097-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 08/28/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8H1053 - Sep-Funnel-extraction										
Blank (B8H1053-BLK1)					Prepared & Analyzed: 08/28/18					
Acenaphthene	ND		0.5	ug/l						
Acenaphthylene	ND		0.5	ug/l						
Anthracene	ND		0.5	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		0.5	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		0.5	ug/l						
Fluorene	ND		0.5	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		0.5	ug/l						
Pyrene	ND		0.5	ug/l						
<hr/>										
Surrogate: Nitrobenzene-d5			50.0	ug/l	50.0		100	15-130		
Surrogate: p-Terphenyl-d14			44.6	ug/l	50.0		89.1	50-130		
Surrogate: 2-Fluorobiphenyl			48.0	ug/l	50.0		96.0	35-130		
Surrogate: Phenol-d6			11.2	ug/l	50.0		22.4	10-83		
Surrogate: 2,4,6-Tribromophenol			55.9	ug/l	50.0		112	44-120		
Surrogate: 2-Fluorophenol			19.3	ug/l	50.0		38.6	10-81		
<hr/>										
LCS (B8H1053-BS1)					Prepared & Analyzed: 08/28/18					
Acenaphthene	46		2	ug/l	50.0		91.3	60-132		
Acenaphthylene	47		2	ug/l	50.0		93.6	54-126		
Anthracene	44		2	ug/l	50.0		89.0	43-120		
Benzo(a)anthracene	43		2	ug/l	50.0		86.1	42-133		
Benzo(a)pyrene	45		2	ug/l	50.0		90.4	32-148		
Benzo(b)fluoranthene	45		2	ug/l	50.0		89.3	42-140		
Benzo(g,h,i)perylene	48		2	ug/l	50.0		96.4	5-195		
Benzo(k)fluoranthene	46		2	ug/l	50.0		91.3	25-146		
Chrysene	43		2	ug/l	50.0		86.7	44-140		
Dibenz(a,h)anthracene	46		2	ug/l	50.0		92.2	5-200		
Fluoranthene	45		2	ug/l	50.0		90.7	43-121		
Fluorene	50		2	ug/l	50.0		100	70-120		
Indeno(1,2,3-cd)pyrene	47		2	ug/l	50.0		93.1	5-151		
Naphthalene	46		2	ug/l	50.0		91.5	36-120		
Phenanthrene	45		2	ug/l	50.0		89.8	65-120		
Pyrene	41		2	ug/l	50.0		82.6	70-120		
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Surrogate: Nitrobenzene-d5			53.0	ug/l	50.0		106	15-130		
Surrogate: p-Terphenyl-d14			45.2	ug/l	50.0		90.4	50-130		
Surrogate: 2-Fluorobiphenyl			50.0	ug/l	50.0		100	35-130		
Surrogate: Phenol-d6			14.0	ug/l	50.0		28.0	10-83		
Surrogate: 2,4,6-Tribromophenol			59.6	ug/l	50.0		119	44-120		
Surrogate: 2-Fluorophenol			22.2	ug/l	50.0		44.5	10-81		

Notes and Definitions

Item	Definition
J	Below reporting limit
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

8 H 2 70340

	TESTS**	REMARKS
✓	NA, C, Cl, S, Pb, TSS, Sb, As, Cd, Cr III, Cr VI, Cu, Fe	
✓	Pb, Hg, Ni, Se, Ag, Zn, Co	
✓	Total BTEX, Benzene	
✓	Total Group PAH, Benzo(a) Fluoranthene, Benzo(b) Fluoranthene, Benzo(k) Fluoranthene, Chrysene, Indeno(1,2,3-cd) Pyrene	
✓	Dioxin(a,b) Fluoranthene, Dibenzo(a,h) Anthracene, Dibenz(a,h) Anthracene, Naphthalene	
✓	Total II Group PAHs, Naphthalene	
✓	TPH, Ethanol, MTBE, t-Butyl Butyl Alcohol, t-Butyl Methyl Ether	
✓	pH, Hardness	

Special Instructions:
List Specific Detection
Limit Requirements:
Please see attached
Table for methods
and required detection
limits.
Turnaround (Business Days) *24 hours*

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	280,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	
Ethanol	400	1666, 1671, D3695	
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8118046
Client Project: 236 Salem St, Medford, MA

Report Date: 25-September-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 09/18/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8I18046. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8I18046-01	Influent	Water	09/17/2018	09/18/2018
8I18046-02	Effluent	Water	09/17/2018	09/18/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8I18046-02)**Analysis**

Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Nickel
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Zinc

Method

SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA 200.7
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 200.7

Influent (Lab Number: 8I18046-01)**Analysis**

Acid Base/Neutral Extractables
Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Methanol and Ethanol
Nickel
Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine

Method

EPA 625.1
SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA-8100-mod
EPA 200.7
EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G

Request for Analysis (continued)

Influent (Lab Number: 8I18046-01) (continued)

Analysis

Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

The sample 'Influent' was reported with elevated detection limits due to the presence of solids in the sample.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	0.640		0.0350	mg/L	09/19/18 8:47	09/20/18 14:27

Results: Calculation

Sample: Effluent
Lab Number: 8I18046-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0112	mg/L	09/19/18 8:47	09/20/18 14:30

Results: General Chemistry**Sample: Influent****Lab Number: 8I18046-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.1	mg/L	09/20/18	09/20/18
Chloride	208		50	mg/L	09/24/18	09/24/18
Cyanide	ND		0.01	mg/L	09/21/18	09/21/18
Hexavalent chromium	ND		0.01	mg/L	09/18/18 16:45	09/18/18 16:45
pH	7.1		0.1	SU	09/18/18 17:00	09/18/18 17:00
Oil & Grease SGT	48		2	mg/L	09/24/18	09/24/18
Total Residual Chlorine	ND		0.05	mg/L	09/18/18 17:30	09/18/18 17:30
Total Suspended Solids	7370		10	mg/L	09/20/18	09/20/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8I18046-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	1.4		0.1	mg/L	09/20/18	09/20/18
Chloride	312		50	mg/L	09/24/18	09/24/18
Cyanide	ND		0.01	mg/L	09/21/18	09/21/18
Hexavalent chromium	ND		0.01	mg/L	09/18/18 16:45	09/18/18 16:45
pH	6.2		0.1	SU	09/18/18 17:00	09/18/18 17:00
Total Residual Chlorine	0.10		0.01	mg/L	09/18/18 17:30	09/18/18 17:30
Total Suspended Solids	ND		2	mg/L	09/20/18	09/20/18

Results: Total Metals

Sample: Influent

Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	1090		0.624	mg/L	09/19/18	09/20/18
Antimony	ND		0.025	mg/L	09/19/18	09/20/18
Arsenic	0.402		0.050	mg/L	09/19/18	09/20/18
Cadmium	0.096		0.020	mg/L	09/19/18	09/20/18
Calcium	202		0.25	mg/L	09/19/18	09/20/18
Chromium	0.640		0.025	mg/L	09/19/18	09/20/18
Copper	0.801		0.100	mg/L	09/19/18	09/20/18
Iron	671		0.250	mg/L	09/19/18	09/20/18
Lead	2.28		0.025	mg/L	09/19/18	09/20/18
Magnesium	143		0.25	mg/L	09/19/18	09/20/18
Mercury	0.0068		0.0010	mg/L	09/20/18	09/20/18
Nickel	0.513		0.025	mg/L	09/19/18	09/20/18
Selenium	ND		0.050	mg/L	09/19/18	09/20/18
Silver	ND		0.025	mg/L	09/19/18	09/20/18
Zinc	2.37		0.100	mg/L	09/19/18	09/20/18

Results: Total Metals

Sample: Effluent

Lab Number: 8I18046-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	351		0.0312	mg/L	09/19/18	09/20/18
Antimony	0.002		0.001	mg/L	09/19/18	09/20/18
Arsenic	0.009		0.002	mg/L	09/19/18	09/20/18
Cadmium	ND		0.001	mg/L	09/19/18	09/20/18
Calcium	115		0.01	mg/L	09/19/18	09/20/18
Chromium	ND		0.001	mg/L	09/19/18	09/20/18
Copper	ND		0.005	mg/L	09/19/18	09/20/18
Iron	0.140		0.012	mg/L	09/19/18	09/20/18
Lead	ND		0.001	mg/L	09/19/18	09/20/18
Magnesium	15.4		0.01	mg/L	09/19/18	09/20/18
Mercury	ND		0.0002	mg/L	09/20/18	09/20/18
Nickel	ND		0.001	mg/L	09/19/18	09/20/18
Selenium	ND		0.002	mg/L	09/19/18	09/20/18
Silver	0.002		0.001	mg/L	09/19/18	09/20/18
Zinc	0.020		0.005	mg/L	09/19/18	09/20/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
4-Isopropyltoluene	ND		0.5	ug/l	09/20/18	09/20/18
Acetone	ND		5.0	ug/l	09/20/18	09/20/18
tert-Amyl methyl ether	ND		0.5	ug/l	09/20/18	09/20/18
Benzene	ND		0.5	ug/l	09/20/18	09/20/18
Bromobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Bromochloromethane	ND		0.5	ug/l	09/20/18	09/20/18
Bromodichloromethane	ND		0.5	ug/l	09/20/18	09/20/18
Bromoform	ND		0.5	ug/l	09/20/18	09/20/18
Bromomethane	ND		0.5	ug/l	09/20/18	09/20/18
2-Butanone	ND		5.0	ug/l	09/20/18	09/20/18
tert-Butyl alcohol	ND		5.0	ug/l	09/20/18	09/20/18
tert-Butylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
n-Butylbenzene	49.9		0.5	ug/l	09/20/18	09/20/18
sec-Butylbenzene	5.1		0.5	ug/l	09/20/18	09/20/18
Carbon Disulfide	ND		0.5	ug/l	09/20/18	09/20/18
Carbon Tetrachloride	ND		0.5	ug/l	09/20/18	09/20/18
Chlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Chloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Chloroform	ND		0.5	ug/l	09/20/18	09/20/18
Chloromethane	ND		0.5	ug/l	09/20/18	09/20/18
2-Chlorotoluene	ND		0.5	ug/l	09/20/18	09/20/18
4-Chlorotoluene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.5	ug/l	09/20/18	09/20/18
Dibromochloromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dibromoethane (EDB)	ND		0.5	ug/l	09/20/18	09/20/18
Dibromomethane	ND		0.5	ug/l	09/20/18	09/20/18
1,4-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Dichlorodifluoromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
cis-1,2-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
trans-1,2-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
2,2-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
trans-1,3-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
cis-1,3-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichloropropene (cis + trans)	ND		1.0	ug/l	09/20/18	09/20/18
Diisopropyl ether	ND		0.5	ug/l	09/20/18	09/20/18
Ethylbenzene	28.6		0.5	ug/l	09/20/18	09/20/18
Ethyl tert-butyl ether	ND		0.5	ug/l	09/20/18	09/20/18

Results: Volatile Organic Compounds (Continued)

Sample: Influent (Continued)

Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Hexachlorobutadiene	ND		0.5	ug/l	09/20/18	09/20/18
2-Hexanone	ND		5.0	ug/l	09/20/18	09/20/18
Isopropylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
p-Isopropyltoluene	2.7		0.5	ug/l	09/20/18	09/20/18
Methylene Chloride	ND		0.5	ug/l	09/20/18	09/20/18
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	09/20/18	09/20/18
Naphthalene	32.2		0.5	ug/l	09/20/18	09/20/18
n-Propylbenzene	24.8		0.5	ug/l	09/20/18	09/20/18
Styrene	ND		0.5	ug/l	09/20/18	09/20/18
1,1,1,2-Tetrachloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1,2,2-Tetrachloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Tetrachloroethene	ND		0.5	ug/l	09/20/18	09/20/18
Tetrahydrofuran	ND		5.0	ug/l	09/20/18	09/20/18
Toluene	1.9		0.5	ug/l	09/20/18	09/20/18
1,2,4-Trichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,2,3-Trichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,1,1-Trichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1,2-Trichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Trichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
Trichlorofluoromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2,3-Trichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
1,2,4-Trimethylbenzene	155		2.5	ug/l	09/20/18	09/20/18
1,3,5-Trimethylbenzene	71.0		2.5	ug/l	09/20/18	09/20/18
Vinyl Chloride	ND		0.5	ug/l	09/20/18	09/20/18
m&p-Xylene	60.5		1.0	ug/l	09/20/18	09/20/18
o-Xylene	24.4		0.5	ug/l	09/20/18	09/20/18
Total xylenes	84.8		1.5	ug/l	09/20/18	09/20/18
4-Methyl-2-pentanone	ND		5.0	ug/l	09/20/18	09/20/18

Surrogate(s)	Recovery%	Limits			
<i>4-Bromofluorobenzene</i>	95.9%	70-130		09/20/18	09/20/18
<i>1,2-Dichlorobenzene-d4</i>	103%	70-130		09/20/18	09/20/18
Benzene	ND	5	ug/l	09/20/18	09/21/18
Toluene	ND	5	ug/l	09/20/18	09/21/18
Acetone	ND	25	ug/l	09/20/18	09/21/18
tert-Butyl alcohol	ND	25	ug/l	09/20/18	09/21/18
Total xylenes	125	5	ug/l	09/20/18	09/21/18
o-Xylene	37	5	ug/l	09/20/18	09/21/18
m&p-Xylene	88	10	ug/l	09/20/18	09/21/18
tert-Amyl methyl ether	ND	5	ug/l	09/20/18	09/21/18
Ethylbenzene	45	5	ug/l	09/20/18	09/21/18

Surrogate(s)	Recovery%	Limits			
<i>4-Bromofluorobenzene</i>	103%	70-130		09/20/18	09/21/18
<i>1,2-Dichloroethane-d4</i>	96.7%	70-130		09/20/18	09/21/18
<i>Toluene-d8</i>	102%	70-130		09/20/18	09/21/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		20	mg/L	09/24/18	09/24/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8I18046-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	09/19/18	09/24/18
Acenaphthene	ND		1	ug/l	09/19/18	09/24/18
Acenaphthylene	ND		1	ug/l	09/19/18	09/24/18
Anthracene	ND		1	ug/l	09/19/18	09/24/18
Benzo(a)anthracene	ND		0.5	ug/l	09/19/18	09/24/18
Benzo(a)pyrene	ND		0.5	ug/l	09/19/18	09/24/18
Benzo(b)fluoranthene	ND		0.5	ug/l	09/19/18	09/24/18
Benzo(g,h,i)perylene	ND		1	ug/l	09/19/18	09/24/18
Benzo(k)fluoranthene	ND		0.5	ug/l	09/19/18	09/24/18
Chrysene	ND		0.5	ug/l	09/19/18	09/24/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	09/19/18	09/24/18
Fluoranthene	ND		1	ug/l	09/19/18	09/24/18
Fluorene	ND		1	ug/l	09/19/18	09/24/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	09/19/18	09/24/18
Naphthalene	ND		0.5	ug/l	09/19/18	09/24/18
Phenanthrene	ND		1	ug/l	09/19/18	09/24/18
Pyrene	ND		1	ug/l	09/19/18	09/24/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	77.3%		15-130		09/19/18	09/24/18
<i>p-Terphenyl-d14</i>	91.7%		50-130		09/19/18	09/24/18
<i>2-Fluorobiphenyl</i>	73.4%		35-130		09/19/18	09/24/18
<i>Phenol-d6</i>	13.8%		10-83		09/19/18	09/24/18
<i>2,4,6-Tribromophenol</i>	93.8%		44-120		09/19/18	09/24/18
<i>2-Fluorophenol</i>	26.8%		10-81		09/19/18	09/24/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0691 - Hexavalent Chrome										
Blank (B8I0691-BLK1)					Prepared & Analyzed: 09/18/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0691-BLK2)					Prepared & Analyzed: 09/18/18					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B8I0691-BS1)					Prepared & Analyzed: 09/18/18					
Hexavalent chromium	0.54		0.01	mg/L	0.500		108	90-110		
LCS (B8I0691-BS2)					Prepared & Analyzed: 09/18/18					
Hexavalent chromium	0.10		0.01	mg/L	0.100		95.0	90-110		
LCS (B8I0691-BS3)					Prepared & Analyzed: 09/19/18					
Hexavalent chromium	0.49		0.01	mg/L	0.500		98.2	90-110		
Duplicate (B8I0691-DUP1)					Source: 8I17008-01		Prepared & Analyzed: 09/18/18			
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8I0691-MS1)					Source: 8I17008-01		Prepared & Analyzed: 09/18/18			
Hexavalent chromium	0.54		0.01	mg/L	0.500	ND	108	80-120		
Batch: B8I0781 - pH										
LCS (B8I0781-BS1)					Prepared & Analyzed: 09/18/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8I0781-DUP1)					Source: 8I18046-01		Prepared & Analyzed: 09/18/18			
pH	7.1		0.1	SU		7.1			0.281	20

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0797 - TSS										
Blank (B8I0797-BLK1)					Prepared & Analyzed: 09/20/18					
Total Suspended Solids	ND		2	mg/L						
LCS (B8I0797-BS1)					Prepared & Analyzed: 09/20/18					
Total Suspended Solids	994		10	mg/L	1000		99.4	90-110		
Duplicate (B8I0797-DUP1)					Prepared & Analyzed: 09/20/18					
Total Suspended Solids	8600		10	mg/L		7370			15.4	20
Batch: B8I0818 - Ammonia										
Blank (B8I0818-BLK1)					Prepared & Analyzed: 09/20/18					
Ammonia	ND		0.1	mg/L						
Blank (B8I0818-BLK2)					Prepared & Analyzed: 09/20/18					
Ammonia	ND		0.1	mg/L						
LCS (B8I0818-BS1)					Prepared & Analyzed: 09/20/18					
Ammonia	1.0		0.1	mg/L	1.00		95.1	90-110		
LCS (B8I0818-BS2)					Prepared & Analyzed: 09/20/18					
Ammonia	1.0		0.1	mg/L	1.00		98.5	90-110		
Duplicate (B8I0818-DUP1)					Prepared & Analyzed: 09/20/18					
Ammonia	0.1		0.1	mg/L		0.1			4.31	20
Matrix Spike (B8I0818-MS1)					Prepared & Analyzed: 09/20/18					
Ammonia	1.0		0.1	mg/L	1.00	0.1	86.6	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0855 - Cyanide										
Blank (B8I0855-BLK1)					Prepared & Analyzed: 09/21/18					
Cyanide	ND		0.01	mg/L						
Blank (B8I0855-BLK2)					Prepared & Analyzed: 09/21/18					
Cyanide	ND		0.01	mg/L						
LCS (B8I0855-BS1)					Prepared & Analyzed: 09/21/18					
Cyanide	0.10		0.01	mg/L	0.100		101	90-110		
LCS (B8I0855-BS2)					Prepared & Analyzed: 09/21/18					
Cyanide	0.09		0.01	mg/L	0.100		93.0	90-110		
LCS (B8I0855-BS3)					Prepared & Analyzed: 09/21/18					
Cyanide	0.11		0.01	mg/L	0.100		109	90-110		
Duplicate (B8I0855-DUP1)					Prepared & Analyzed: 09/21/18					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8I0855-MS1)					Prepared & Analyzed: 09/21/18					
Cyanide	0.10		0.01	mg/L	0.100	ND	102	80-120		
Batch: B8I0857 - Oil & Grease										
Blank (B8I0857-BLK1)					Prepared & Analyzed: 09/24/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8I0857-BS1)					Prepared & Analyzed: 09/24/18					
Oil & Grease SGT	20		2	mg/L	20.0		101	64-132		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0915 - Chloride										
Blank (B8I0915-BLK1)					Prepared & Analyzed: 09/24/18					
Chloride	ND		1	mg/L						
LCS (B8I0915-BS1)					Prepared & Analyzed: 09/24/18					
Chloride	65		1	mg/L				90-110		
Duplicate (B8I0915-DUP1)					Prepared & Analyzed: 09/24/18					
Chloride	286		50	mg/L		208			31.6	20
Batch: B8I0944 - Residual chlorine										
Blank (B8I0944-BLK1)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8I0944-BLK2)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8I0944-BS1)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	0.48		0.01	mg/L	0.500		95.2	90-110		
LCS (B8I0944-BS2)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	0.46		0.01	mg/L	0.500		92.0	90-110		
Duplicate (B8I0944-DUP1)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	0.10		0.01	mg/L		0.10			4.12	20
Matrix Spike (B8I0944-MS1)					Prepared & Analyzed: 09/18/18					
Total Residual Chlorine	0.51		0.01	mg/L	0.500	0.10	83.0	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0692 - Hot plate acid digestion waters										
Blank (B8I0692-BLK1)					Prepared: 09/19/18 Analyzed: 09/20/18					
Silver	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
Nickel	ND		0.005	mg/L						
Copper	ND		0.020	mg/L						
Iron	ND		0.050	mg/L						
Zinc	ND		0.020	mg/L						
Calcium	ND		0.05	mg/L						
Arsenic	ND		0.010	mg/L						
Chromium	ND		0.005	mg/L						
Antimony	ND		0.005	mg/L						
Cadmium	ND		0.004	mg/L						
Lead	ND		0.005	mg/L						
Selenium	ND		0.010	mg/L						
LCS (B8I0692-BS1)					Prepared: 09/19/18 Analyzed: 09/20/18					
Zinc	1.03		0.020	mg/L	1.00		103	85-115		
Arsenic	0.207		0.010	mg/L	0.200		103	85-115		
Cadmium	0.995		0.004	mg/L	1.00		99.5	85-114		
Copper	1.01		0.020	mg/L	1.00		101	85-115		
Iron	11.1		0.050	mg/L	10.0		111	85-115		
Nickel	0.994		0.005	mg/L	1.00		99.4	85-112		
Lead	0.999		0.005	mg/L	1.00		99.9	85-115		
Selenium	0.197		0.010	mg/L	0.200		98.5	85-115		
Magnesium	11.1		0.05	mg/L	10.0		111	85-115		
Chromium	1.01		0.005	mg/L	1.00		101	85-115		
Calcium	11.1		0.05	mg/L	10.0		111	85-115		
Silver	0.361		0.005	mg/L	0.400		90.3	85-115		
Antimony	1.08		0.005	mg/L	1.00		108	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: B8I0758 - Hot plate acid digestion waters										
Blank (B8I0758-BLK1)					Prepared & Analyzed: 09/20/18					
Mercury	ND		0.0002	mg/L						
LCS (B8I0758-BS1)					Prepared & Analyzed: 09/20/18					
Mercury	1.05			ug/l	1.00		105	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0826 - Purge-Trap										
Blank (B8I0826-BLK1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			50.2	ug/l	50.0		100	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			50.6	ug/l	50.0		101	70-130		
<i>Surrogate: Toluene-d8</i>			50.6	ug/l	50.0		101	70-130		
LCS (B8I0826-BS1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Benzene	25			ug/l	20.0		123	65-135		
Toluene	23			ug/l	20.0		116	70-130		
Acetone	20			ug/l	20.0		98.6	70-130		
tert-Butyl alcohol	25			ug/l	20.0		124	70-130		
Total xylenes	69		1	ug/l				70-130		
o-Xylene	23			ug/l	20.0		114	70-130		
m&p-Xylene	46			ug/l	40.0		116	70-130		
tert-Amyl methyl ether	22			ug/l	20.0		108	70-130		
Ethylbenzene	23			ug/l	20.0		114	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			51.9	ug/l	50.0		104	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			53.4	ug/l	50.0		107	70-130		
<i>Surrogate: Toluene-d8</i>			51.6	ug/l	50.0		103	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0890 - EPA 3580A										
Blank (B8I0890-BLK1)										
Ethanol	ND		20	mg/L						
Prepared & Analyzed: 09/24/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0697 - Sep-Funnel-extraction										
Blank (B8I0697-BLK1)					Prepared & Analyzed: 09/19/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			37.4	ug/l	50.0		74.8	15-130		
Surrogate: p-Terphenyl-d14			48.6	ug/l	50.0		97.3	50-130		
Surrogate: 2-Fluorobiphenyl			35.4	ug/l	50.0		70.7	35-130		
Surrogate: Phenol-d6			9.67	ug/l	50.0		19.3	10-83		
Surrogate: 2,4,6-Tribromophenol			44.4	ug/l	50.0		88.8	44-120		
Surrogate: 2-Fluorophenol			16.4	ug/l	50.0		32.7	10-81		
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LCS (B8I0697-BS1)					Prepared & Analyzed: 09/19/18					
Phenol	13		2	ug/l	50.0		25.1	17-120		
Acenaphthene	42		2	ug/l	50.0		84.5	60-132		
Acenaphthylene	44		2	ug/l	50.0		88.1	54-126		
Anthracene	43		2	ug/l	50.0		86.9	43-120		
Benzo(a)anthracene	44		2	ug/l	50.0		87.4	42-133		
Benzo(a)pyrene	47		2	ug/l	50.0		93.1	32-148		
Benzo(b)fluoranthene	47		2	ug/l	50.0		94.7	42-140		
Benzo(g,h,i)perylene	48		2	ug/l	50.0		96.3	5-195		
Benzo(k)fluoranthene	47		2	ug/l	50.0		95.0	25-146		
Chrysene	44		2	ug/l	50.0		87.3	44-140		
Dibenz(a,h)anthracene	47		2	ug/l	50.0		94.0	5-200		
Fluoranthene	45		2	ug/l	50.0		90.7	43-121		
Fluorene	50		2	ug/l	50.0		99.6	70-120		
Indeno(1,2,3-cd)pyrene	47		2	ug/l	50.0		93.2	5-151		
Naphthalene	39		2	ug/l	50.0		78.8	36-120		
Phenanthrene	44		2	ug/l	50.0		88.3	65-120		
Pyrene	42		2	ug/l	50.0		84.3	70-120		
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Surrogate: Nitrobenzene-d5			46.7	ug/l	50.0		93.4	15-130		
Surrogate: p-Terphenyl-d14			48.2	ug/l	50.0		96.3	50-130		
Surrogate: 2-Fluorobiphenyl			41.5	ug/l	50.0		83.1	35-130		
Surrogate: Phenol-d6			13.5	ug/l	50.0		27.0	10-83		
Surrogate: 2,4,6-Tribromophenol			54.2	ug/l	50.0		108	44-120		
Surrogate: 2-Fluorophenol			21.0	ug/l	50.0		42.0	10-81		

Quality Control (Continued)

Base/Neutral & Acid Extractables (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0697 - Sep-Funnel-extraction (Continued)										
Leach Fluid Blank (B8I0697-LBK1)					Prepared & Analyzed: 09/19/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		2	ug/l						
Benzo(a)pyrene	ND		2	ug/l						
Benzo(b)fluoranthene	ND		2	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		2	ug/l						
Chrysene	ND		2	ug/l						
Dibenz(a,h)anthracene	ND		2	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2	ug/l						
Naphthalene	ND		2	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
<hr/>										
Surrogate: Nitrobenzene-d5			ND	ug/l	50.0			15-130		
Surrogate: p-Terphenyl-d14			ND	ug/l	50.0			50-130		
Surrogate: 2-Fluorobiphenyl			ND	ug/l	50.0			35-130		
Surrogate: Phenol-d6			ND	ug/l	50.0			10-83		
Surrogate: 2,4,6-Tribromophenol			ND	ug/l	50.0			44-120		
Surrogate: 2-Fluorophenol			ND	ug/l	50.0			10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	1 L Amb. Nonpres
Ethanol	400	1666, 1671, D3695	1 L Amb. Nonpres
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8119020
Client Project: 236 Salem St, Medford, MA

Report Date: 26-September-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
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Andover, MA 01810

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New England Testing Laboratory, Inc.
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 09/19/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8I19020. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8I19020-01	Influent	Water	09/19/2018	09/19/2018
8I19020-02	Effluent	Water	09/19/2018	09/19/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8I19020-02)**Analysis**

Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Nickel
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Zinc

Method

SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA 200.7
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 200.7

Influent (Lab Number: 8I19020-01)**Analysis**

Acid Base/Neutral Extractables
Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Methanol and Ethanol
Nickel
Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine

Method

EPA 625.1
SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA-8100-mod
EPA 200.7
EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G

Request for Analysis (continued)

Influent (Lab Number: 8I19020-01) (continued)

Analysis

Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8I19020-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	09/20/18 10:04	09/24/18 14:35

Results: Calculation

Sample: Effluent
Lab Number: 8I19020-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	09/20/18 10:04	09/24/18 14:38

Results: General Chemistry**Sample: Influent****Lab Number: 8I19020-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.1	mg/L	09/20/18	09/20/18
Chloride	193		5	mg/L	09/24/18	09/24/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/20/18 8:15	09/20/18 8:15
pH	7.2		0.1	SU	09/19/18 16:50	09/19/18 16:50
Oil & Grease SGT	ND		2	mg/L	09/24/18	09/24/18
Total Residual Chlorine	0.02		0.01	mg/L	09/19/18 17:17	09/19/18 17:17
Total Suspended Solids	30		2	mg/L	09/20/18	09/20/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8I19020-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.2		0.1	mg/L	09/20/18	09/20/18
Chloride	187		5	mg/L	09/24/18	09/24/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/20/18 8:15	09/20/18 8:15
pH	6.9		0.1	SU	09/19/18 16:50	09/19/18 16:50
Total Residual Chlorine	0.02		0.01	mg/L	09/19/18 17:17	09/19/18 17:17
Total Suspended Solids	ND		2	mg/L	09/20/18	09/20/18

Results: Total Metals**Sample: Influent****Lab Number: 8I19020-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	611		0.125	mg/L	09/20/18	09/24/18
Antimony	0.018		0.005	mg/L	09/20/18	09/24/18
Arsenic	0.016		0.010	mg/L	09/20/18	09/24/18
Cadmium	ND		0.004	mg/L	09/20/18	09/24/18
Calcium	222		0.05	mg/L	09/20/18	09/24/18
Chromium	0.008		0.005	mg/L	09/20/18	09/24/18
Copper	0.037		0.020	mg/L	09/20/18	09/24/18
Iron	7.46		0.050	mg/L	09/20/18	09/24/18
Lead	0.062		0.005	mg/L	09/20/18	09/24/18
Magnesium	13.6		0.05	mg/L	09/20/18	09/24/18
Mercury	ND		0.0002	mg/L	09/20/18	09/20/18
Nickel	0.005		0.005	mg/L	09/20/18	09/24/18
Selenium	ND		0.010	mg/L	09/20/18	09/24/18
Silver	ND		0.005	mg/L	09/20/18	09/24/18
Zinc	0.041		0.020	mg/L	09/20/18	09/24/18

Results: Total Metals

Sample: Effluent

Lab Number: 8I19020-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	490		0.125	mg/L	09/20/18	09/24/18
Antimony	0.007		0.005	mg/L	09/20/18	09/24/18
Arsenic	ND		0.010	mg/L	09/20/18	09/24/18
Cadmium	ND		0.004	mg/L	09/20/18	09/24/18
Calcium	175		0.05	mg/L	09/20/18	09/24/18
Chromium	ND		0.005	mg/L	09/20/18	09/24/18
Copper	ND		0.020	mg/L	09/20/18	09/24/18
Iron	1.35		0.050	mg/L	09/20/18	09/24/18
Lead	0.006		0.005	mg/L	09/20/18	09/24/18
Magnesium	12.7		0.05	mg/L	09/20/18	09/24/18
Mercury	ND		0.0002	mg/L	09/20/18	09/20/18
Nickel	ND		0.005	mg/L	09/20/18	09/24/18
Selenium	ND		0.010	mg/L	09/20/18	09/24/18
Silver	ND		0.005	mg/L	09/20/18	09/24/18
Zinc	0.030		0.020	mg/L	09/20/18	09/24/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8I19020-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
4-Isopropyltoluene	ND		0.5	ug/l	09/20/18	09/20/18
Acetone	ND		5.0	ug/l	09/20/18	09/20/18
tert-Amyl methyl ether	ND		0.5	ug/l	09/20/18	09/20/18
Benzene	0.9		0.5	ug/l	09/20/18	09/20/18
Bromobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Bromochloromethane	ND		0.5	ug/l	09/20/18	09/20/18
Bromodichloromethane	ND		0.5	ug/l	09/20/18	09/20/18
Bromoform	ND		0.5	ug/l	09/20/18	09/20/18
Bromomethane	ND		0.5	ug/l	09/20/18	09/20/18
2-Butanone	ND		5.0	ug/l	09/20/18	09/20/18
tert-Butyl alcohol	ND		5.0	ug/l	09/20/18	09/20/18
tert-Butylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
n-Butylbenzene	3.1		0.5	ug/l	09/20/18	09/20/18
sec-Butylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
Carbon Disulfide	ND		0.5	ug/l	09/20/18	09/20/18
Carbon Tetrachloride	ND		0.5	ug/l	09/20/18	09/20/18
Chlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Chloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Chloroform	ND		0.5	ug/l	09/20/18	09/20/18
Chloromethane	ND		0.5	ug/l	09/20/18	09/20/18
2-Chlorotoluene	ND		0.5	ug/l	09/20/18	09/20/18
4-Chlorotoluene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.5	ug/l	09/20/18	09/20/18
Dibromochloromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dibromoethane (EDB)	ND		0.5	ug/l	09/20/18	09/20/18
Dibromomethane	ND		0.5	ug/l	09/20/18	09/20/18
1,4-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
Dichlorodifluoromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
cis-1,2-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
trans-1,2-Dichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
1,2-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
2,2-Dichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
trans-1,3-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
1,1-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
cis-1,3-Dichloropropene	ND		0.5	ug/l	09/20/18	09/20/18
1,3-Dichloropropene (cis + trans)	ND		1.0	ug/l	09/20/18	09/20/18
Diisopropyl ether	ND		0.5	ug/l	09/20/18	09/20/18
Ethylbenzene	4.7		0.5	ug/l	09/20/18	09/20/18
Ethyl tert-butyl ether	ND		0.5	ug/l	09/20/18	09/20/18

Results: Volatile Organic Compounds (Continued)

Sample: Influent (Continued)

Lab Number: 8I19020-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Hexachlorobutadiene	ND		0.5	ug/l	09/20/18	09/20/18
2-Hexanone	ND		5.0	ug/l	09/20/18	09/20/18
Isopropylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
p-Isopropyltoluene	0.6		0.5	ug/l	09/20/18	09/20/18
Methylene Chloride	ND		0.5	ug/l	09/20/18	09/20/18
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	09/20/18	09/20/18
Naphthalene	0.9		0.5	ug/l	09/20/18	09/20/18
n-Propylbenzene	ND		0.5	ug/l	09/20/18	09/20/18
Styrene	ND		0.5	ug/l	09/20/18	09/20/18
1,1,1,2-Tetrachloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1,2,2-Tetrachloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Tetrachloroethene	ND		0.5	ug/l	09/20/18	09/20/18
Tetrahydrofuran	ND		5.0	ug/l	09/20/18	09/20/18
Toluene	4.5		0.5	ug/l	09/20/18	09/20/18
1,2,4-Trichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,2,3-Trichlorobenzene	ND		0.5	ug/l	09/20/18	09/20/18
1,1,1-Trichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
1,1,2-Trichloroethane	ND		0.5	ug/l	09/20/18	09/20/18
Trichloroethene	ND		0.5	ug/l	09/20/18	09/20/18
Trichlorofluoromethane	ND		0.5	ug/l	09/20/18	09/20/18
1,2,3-Trichloropropane	ND		0.5	ug/l	09/20/18	09/20/18
1,2,4-Trimethylbenzene	10.9		0.5	ug/l	09/20/18	09/20/18
1,3,5-Trimethylbenzene	19.1		0.5	ug/l	09/20/18	09/20/18
Vinyl Chloride	ND		0.5	ug/l	09/20/18	09/20/18
m&p-Xylene	87.8		1.0	ug/l	09/20/18	09/20/18
o-Xylene	49.6		0.5	ug/l	09/20/18	09/20/18
Total xylenes	137		1.5	ug/l	09/20/18	09/20/18
4-Methyl-2-pentanone	ND		5.0	ug/l	09/20/18	09/20/18

Surrogate(s)	Recovery%	Limits			
4-Bromofluorobenzene	93.9%	70-130		09/20/18	09/20/18
1,2-Dichlorobenzene-d4	93.9%	70-130		09/20/18	09/20/18
Benzene	1	1	ug/l	09/20/18	09/21/18
Toluene	6	1	ug/l	09/20/18	09/21/18
Acetone	10	5	ug/l	09/20/18	09/21/18
tert-Butyl alcohol	ND	5	ug/l	09/20/18	09/21/18
Total xylenes	159	1	ug/l	09/20/18	09/21/18
o-Xylene	56	1	ug/l	09/20/18	09/21/18
m&p-Xylene	103	2	ug/l	09/20/18	09/21/18
tert-Amyl methyl ether	ND	1	ug/l	09/20/18	09/21/18
Ethylbenzene	7	1	ug/l	09/20/18	09/21/18

Surrogate(s)	Recovery%	Limits			
4-Bromofluorobenzene	105%	70-130		09/20/18	09/21/18
1,2-Dichloroethane-d4	102%	70-130		09/20/18	09/21/18
Toluene-d8	105%	70-130		09/20/18	09/21/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8I19020-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		20	mg/L	09/24/18	09/24/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8I19020-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	09/21/18	09/24/18
Acenaphthene	ND		1	ug/l	09/21/18	09/24/18
Acenaphthylene	ND		1	ug/l	09/21/18	09/24/18
Anthracene	ND		1	ug/l	09/21/18	09/24/18
Benzo(a)anthracene	ND		0.5	ug/l	09/21/18	09/24/18
Benzo(a)pyrene	ND		0.5	ug/l	09/21/18	09/24/18
Benzo(b)fluoranthene	ND		0.5	ug/l	09/21/18	09/24/18
Benzo(g,h,i)perylene	ND		1	ug/l	09/21/18	09/24/18
Benzo(k)fluoranthene	ND		0.5	ug/l	09/21/18	09/24/18
Chrysene	ND		0.5	ug/l	09/21/18	09/24/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	09/21/18	09/24/18
Fluoranthene	ND		1	ug/l	09/21/18	09/24/18
Fluorene	ND		1	ug/l	09/21/18	09/24/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	09/21/18	09/24/18
Naphthalene	ND		0.5	ug/l	09/21/18	09/24/18
Phenanthrene	ND		1	ug/l	09/21/18	09/24/18
Pyrene	ND		1	ug/l	09/21/18	09/24/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	94.5%		15-130		09/21/18	09/24/18
<i>p-Terphenyl-d14</i>	103%		50-130		09/21/18	09/24/18
<i>2-Fluorobiphenyl</i>	96.7%		35-130		09/21/18	09/24/18
<i>Phenol-d6</i>	16.2%		10-83		09/21/18	09/24/18
<i>2,4,6-Tribromophenol</i>	112%		44-120		09/21/18	09/24/18
<i>2-Fluorophenol</i>	29.2%		10-81		09/21/18	09/24/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0782 - pH										
LCS (B8I0782-BS1)										
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8I0782-DUP1)										
Source: 8I19002-01										
pH	6.7		0.1	SU		6.7			0.596	20
Batch: B8I0798 - TSS										
Blank (B8I0798-BLK1)										
Total Suspended Solids	ND		2	mg/L						
LCS (B8I0798-BS1)										
Total Suspended Solids	980		10	mg/L	1000		98.0	90-110		
Duplicate (B8I0798-DUP1)										
Source: 8I19014-01										
Total Suspended Solids	244		6	mg/L		218			11.5	20
Batch: B8I0818 - Ammonia										
Blank (B8I0818-BLK1)										
Ammonia	ND		0.1	mg/L						
Blank (B8I0818-BLK2)										
Ammonia	ND		0.1	mg/L						
LCS (B8I0818-BS1)										
Ammonia	1.0		0.1	mg/L	1.00		95.1	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0818 - Ammonia (Continued)										
LCS (B8I0818-BS2)					Prepared & Analyzed: 09/20/18					
Ammonia	1.0		0.1	mg/L	1.00		98.5	90-110		
Duplicate (B8I0818-DUP1)					Source: 8I18014-01 Prepared & Analyzed: 09/20/18					
Ammonia	0.1		0.1	mg/L		0.1			4.31	20
Matrix Spike (B8I0818-MS1)					Source: 8I18014-01 Prepared & Analyzed: 09/20/18					
Ammonia	1.0		0.1	mg/L	1.00	0.1	86.6	80-120		
Batch: B8I0852 - Hexavalent Chrome										
Blank (B8I0852-BLK1)					Prepared & Analyzed: 09/20/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0852-BLK2)					Prepared & Analyzed: 09/20/18					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B8I0852-BS1)					Prepared & Analyzed: 09/20/18					
Hexavalent chromium	0.49		0.01	mg/L	0.500		98.2	90-110		
LCS (B8I0852-BS2)					Prepared & Analyzed: 09/20/18					
Hexavalent chromium	0.10		0.01	mg/L	0.100		100	90-110		
LCS (B8I0852-BS3)					Prepared & Analyzed: 09/20/18					
Hexavalent chromium	0.53		0.01	mg/L	0.500		106	90-110		
Duplicate (B8I0852-DUP1)					Source: 8I19020-02 Prepared & Analyzed: 09/20/18					
Hexavalent chromium	ND		0.01	mg/L		ND				20

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0852 - Hexavalent Chrome (Continued)										
Matrix Spike (B8I0852-MS1)					Source: 8I19020-02					
Hexavalent chromium	0.45		0.01	mg/L	0.500	ND	90.2	80-120		
Batch: B8I0857 - Oil & Grease										
Blank (B8I0857-BLK1)					Prepared & Analyzed: 09/24/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8I0857-BS1)					Prepared & Analyzed: 09/24/18					
Oil & Grease SGT	20		2	mg/L	20.0		101	64-132		
Batch: B8I0915 - Chloride										
Blank (B8I0915-BLK1)					Prepared & Analyzed: 09/24/18					
Chloride	ND		1	mg/L						
LCS (B8I0915-BS1)					Prepared & Analyzed: 09/24/18					
Chloride	65		1	mg/L				90-110		
Duplicate (B8I0915-DUP1)					Source: 8I18046-01					
Chloride	286		50	mg/L		208			31.6	20
Batch: B8I0946 - Residual chlorine										
Blank (B8I0946-BLK1)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0946 - Residual chlorine (Continued)										
Blank (B8I0946-BLK2)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8I0946-BS1)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	0.50		0.01	mg/L	0.500		99.2	90-110		
LCS (B8I0946-BS2)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	0.50		0.01	mg/L	0.500		99.0	90-110		
Duplicate (B8I0946-DUP1)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	0.02		0.01	mg/L		0.02			10.5	20
Matrix Spike (B8I0946-MS1)					Prepared & Analyzed: 09/19/18					
Total Residual Chlorine	0.44		0.01	mg/L	0.500	0.02	85.0	80-120		
Batch: B8I1026 - Cyanide										
Blank (B8I1026-BLK1)					Prepared & Analyzed: 09/26/18					
Cyanide	ND		0.01	mg/L						
Blank (B8I1026-BLK2)					Prepared & Analyzed: 09/26/18					
Cyanide	ND		0.01	mg/L						
LCS (B8I1026-BS1)					Prepared & Analyzed: 09/26/18					
Cyanide	0.11		0.01	mg/L	0.100		110	90-110		
LCS (B8I1026-BS2)					Prepared & Analyzed: 09/26/18					
Cyanide	0.10		0.01	mg/L	0.100		96.0	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1026 - Cyanide (Continued)										
LCS (B8I1026-BS3)										
Cyanide	0.11		0.01	mg/L	0.100		108	90-110		
Duplicate (B8I1026-DUP1)										
			Source: 8I19020-01							
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8I1026-MS1)										
			Source: 8I19020-01							
Cyanide	0.11		0.01	mg/L	0.100	ND	113	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0747 - Hot plate acid digestion waters										
Blank (B8I0747-BLK1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Nickel	ND		0.005	mg/L						
Chromium	ND		0.005	mg/L						
Lead	ND		0.005	mg/L						
Silver	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
Zinc	ND		0.020	mg/L						
Antimony	ND		0.005	mg/L						
Calcium	ND		0.05	mg/L						
Cadmium	ND		0.004	mg/L						
Copper	ND		0.020	mg/L						
Selenium	ND		0.010	mg/L						
Iron	ND		0.050	mg/L						
Arsenic	ND		0.010	mg/L						
LCS (B8I0747-BS1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Magnesium	22.8		0.05	mg/L	20.0		114	85-115		
Chromium	2.30		0.005	mg/L	2.00		115	85-115		
Silver	0.765		0.005	mg/L	0.800		95.6	85-115		
Arsenic	0.446		0.010	mg/L	0.400		111	85-115		
Cadmium	2.12		0.004	mg/L	2.00		106	85-114		
Copper	2.21		0.020	mg/L	2.00		111	85-115		
Iron	22.8		0.050	mg/L	20.0		114	85-115		
Antimony	2.20		0.005	mg/L	2.00		110	85-115		
Zinc	2.19		0.020	mg/L	2.00		110	85-115		
Lead	2.12		0.005	mg/L	2.00		106	85-115		
Nickel	2.27		0.005	mg/L	2.00		113	85-112		
Selenium	0.454		0.010	mg/L	0.400		113	85-115		
Calcium	22.4		0.05	mg/L	20.0		112	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: B8I0758 - Hot plate acid digestion waters										
Blank (B8I0758-BLK1)					Prepared & Analyzed: 09/20/18					
Mercury	ND		0.0002	mg/L						
LCS (B8I0758-BS1)					Prepared & Analyzed: 09/20/18					
Mercury	1.05			ug/l	1.00		105	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0826 - Purge-Trap										
Blank (B8I0826-BLK1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			50.2	ug/l	50.0		100	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			50.6	ug/l	50.0		101	70-130		
<i>Surrogate: Toluene-d8</i>			50.6	ug/l	50.0		101	70-130		
LCS (B8I0826-BS1)					Prepared: 09/20/18 Analyzed: 09/21/18					
Benzene	25			ug/l	20.0		123	65-135		
Toluene	23			ug/l	20.0		116	70-130		
Acetone	20			ug/l	20.0		98.6	70-130		
tert-Butyl alcohol	25			ug/l	20.0		124	70-130		
Total xylenes	69		1	ug/l				70-130		
o-Xylene	23			ug/l	20.0		114	70-130		
m&p-Xylene	46			ug/l	40.0		116	70-130		
tert-Amyl methyl ether	22			ug/l	20.0		108	70-130		
Ethylbenzene	23			ug/l	20.0		114	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			51.9	ug/l	50.0		104	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			53.4	ug/l	50.0		107	70-130		
<i>Surrogate: Toluene-d8</i>			51.6	ug/l	50.0		103	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0890 - EPA 3580A										
Blank (B8I0890-BLK1)										
Ethanol	ND		20	mg/L						
Prepared & Analyzed: 09/24/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0795 - Sep-Funnel-extraction										
Blank (B8I0795-BLK1)					Prepared: 09/21/18 Analyzed: 09/24/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		1	ug/l						
Acenaphthylene	ND		1	ug/l						
Anthracene	ND		1	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		1	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		1	ug/l						
Fluorene	ND		1	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		1	ug/l						
Pyrene	ND		1	ug/l						
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Surrogate: Nitrobenzene-d5			48.7	ug/l	50.0		97.5	15-130		
Surrogate: p-Terphenyl-d14			55.4	ug/l	50.0		111	50-130		
Surrogate: 2-Fluorobiphenyl			44.6	ug/l	50.0		89.2	35-130		
Surrogate: Phenol-d6			10.6	ug/l	50.0		21.1	10-83		
Surrogate: 2,4,6-Tribromophenol			32.8	ug/l	50.0		65.6	44-120		
Surrogate: 2-Fluorophenol			18.1	ug/l	50.0		36.1	10-81		
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LCS (B8I0795-BS1)					Prepared: 09/21/18 Analyzed: 09/24/18					
Phenol	12		2	ug/l	50.0		24.5	17-120		
Acenaphthene	50		2	ug/l	50.0		100	60-132		
Acenaphthylene	52		2	ug/l	50.0		104	54-126		
Anthracene	49		2	ug/l	50.0		97.9	43-120		
Benzo(a)anthracene	49		2	ug/l	50.0		97.3	42-133		
Benzo(a)pyrene	51		2	ug/l	50.0		102	32-148		
Benzo(b)fluoranthene	51		2	ug/l	50.0		103	42-140		
Benzo(g,h,i)perylene	51		2	ug/l	50.0		102	5-195		
Benzo(k)fluoranthene	53		2	ug/l	50.0		105	25-146		
Chrysene	49		2	ug/l	50.0		97.5	44-140		
Dibenz(a,h)anthracene	52		2	ug/l	50.0		103	5-200		
Fluoranthene	50		2	ug/l	50.0		101	43-121		
Fluorene	59		2	ug/l	50.0		118	70-120		
Indeno(1,2,3-cd)pyrene	51		2	ug/l	50.0		102	5-151		
Naphthalene	47		2	ug/l	50.0		94.2	36-120		
Phenanthrene	49		2	ug/l	50.0		98.1	65-120		
Pyrene	46		2	ug/l	50.0		91.1	70-120		
<hr/>										
Surrogate: Nitrobenzene-d5			56.1	ug/l	50.0		112	15-130		
Surrogate: p-Terphenyl-d14			52.3	ug/l	50.0		105	50-130		
Surrogate: 2-Fluorobiphenyl			54.4	ug/l	50.0		109	35-130		
Surrogate: Phenol-d6			11.9	ug/l	50.0		23.8	10-83		
Surrogate: 2,4,6-Tribromophenol			45.0	ug/l	50.0		90.1	44-120		
Surrogate: 2-Fluorophenol			20.1	ug/l	50.0		40.2	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

1-888-863-8522



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[illegible]

****Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETP/H**

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	40 ml Vial HCL
Ethanol	400	1666, 1671, D3695	40 ml Vial HCL
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8125012
Client Project: 236 Salem St, Medford, MA

Report Date: 02-October-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 09/25/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8I25012. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8I25012-01	Influent	Water	09/24/2018	09/25/2018
8I25012-02	Effluent	Water	09/24/2018	09/25/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8I25012-02)**Analysis**

Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Nickel
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Zinc

Method

SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA 200.7
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 200.7

Influent (Lab Number: 8I25012-01)**Analysis**

Acid Base/Neutral Extractables
Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Methanol and Ethanol
Nickel
Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine

Method

EPA 625.1
SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA-8100-mod
EPA 200.7
EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G

Request for Analysis (continued)

Influent (Lab Number: 8I25012-01) (continued)

Analysis

Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

The sample 'Influent' was reported with elevated detection limits due to the foaming nature of the sample.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0112	mg/L	09/26/18 9:33	09/26/18 13:40

Results: Calculation

Sample: Effluent
Lab Number: 8I25012-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0112	mg/L	09/26/18 9:33	09/26/18 13:43

Results: General Chemistry**Sample: Influent****Lab Number: 8I25012-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.7		0.1	mg/L	09/28/18	09/28/18
Chloride	519		10	mg/L	09/26/18	09/26/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/25/18 14:50	09/25/18 14:50
pH	6.8		0.1	SU	09/25/18 18:00	09/25/18 18:00
Oil & Grease SGT	ND		2	mg/L	09/26/18	09/27/18
Total Residual Chlorine	0.06		0.01	mg/L	09/25/18 17:45	09/25/18 17:45
Total Suspended Solids	48		4	mg/L	09/27/18	09/28/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8I25012-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.6		0.1	mg/L	09/28/18	09/28/18
Chloride	441		50	mg/L	09/26/18	09/26/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/25/18 14:50	09/25/18 14:50
pH	6.7		0.1	SU	09/25/18 18:00	09/25/18 18:00
Total Residual Chlorine	ND		0.01	mg/L	09/25/18 17:45	09/25/18 17:45
Total Suspended Solids	ND		2	mg/L	09/27/18	09/28/18

Results: Total Metals**Sample: Influent****Lab Number: 8I25012-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	276		0.0312	mg/L	09/26/18	09/26/18
Antimony	ND		0.001	mg/L	09/26/18	09/26/18
Arsenic	0.004		0.002	mg/L	09/26/18	09/26/18
Cadmium	ND		0.001	mg/L	09/26/18	09/26/18
Calcium	98.8		0.01	mg/L	09/26/18	09/26/18
Chromium	0.004		0.001	mg/L	09/26/18	09/26/18
Copper	ND		0.005	mg/L	09/26/18	09/26/18
Iron	3.96		0.012	mg/L	09/26/18	09/26/18
Lead	0.012		0.001	mg/L	09/26/18	09/26/18
Magnesium	7.25		0.01	mg/L	09/26/18	09/26/18
Mercury	ND		0.0002	mg/L	09/26/18	09/26/18
Nickel	0.003		0.001	mg/L	09/26/18	09/26/18
Selenium	ND		0.002	mg/L	09/26/18	09/26/18
Silver	ND		0.001	mg/L	09/26/18	09/26/18
Zinc	0.202		0.005	mg/L	09/26/18	09/26/18

Results: Total Metals

Sample: Effluent

Lab Number: 8I25012-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	271		0.0312	mg/L	09/26/18	09/26/18
Antimony	ND		0.001	mg/L	09/26/18	09/26/18
Arsenic	ND		0.002	mg/L	09/26/18	09/26/18
Cadmium	ND		0.001	mg/L	09/26/18	09/26/18
Calcium	98.1		0.01	mg/L	09/26/18	09/26/18
Chromium	ND		0.001	mg/L	09/26/18	09/26/18
Copper	ND		0.005	mg/L	09/26/18	09/26/18
Iron	0.066		0.012	mg/L	09/26/18	09/26/18
Lead	ND		0.001	mg/L	09/26/18	09/26/18
Magnesium	6.33		0.01	mg/L	09/26/18	09/26/18
Mercury	ND		0.0002	mg/L	09/26/18	09/26/18
Nickel	ND		0.001	mg/L	09/26/18	09/26/18
Selenium	ND		0.002	mg/L	09/26/18	09/26/18
Silver	ND		0.001	mg/L	09/26/18	09/26/18
Zinc	0.014		0.005	mg/L	09/26/18	09/26/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	09/28/18	09/28/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>121%</i>		<i>70-130</i>		09/28/18	09/28/18
<i>1,2-Dichlorobenzene-d4</i>	<i>126%</i>		<i>70-130</i>		09/28/18	09/28/18
Benzene	ND		5	ug/l	09/25/18	09/26/18
Toluene	22		5	ug/l	09/25/18	09/26/18
Acetone	ND		25	ug/l	09/25/18	09/26/18
tert-Butyl alcohol	ND		25	ug/l	09/25/18	09/26/18
Total xylenes	214		5	ug/l	09/25/18	09/26/18
o-Xylene	90		5	ug/l	09/25/18	09/26/18
m&p-Xylene	124		10	ug/l	09/25/18	09/26/18
tert-Amyl methyl ether	ND		5	ug/l	09/25/18	09/26/18
Ethylbenzene	20		5	ug/l	09/25/18	09/26/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>100%</i>		<i>70-130</i>		09/25/18	09/26/18
<i>1,2-Dichloroethane-d4</i>	<i>100%</i>		<i>70-130</i>		09/25/18	09/26/18
<i>Toluene-d8</i>	<i>105%</i>		<i>70-130</i>		09/25/18	09/26/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		20	mg/L	10/01/18	10/01/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	09/27/18	09/28/18
Acenaphthene	ND		2	ug/l	09/27/18	09/28/18
Acenaphthylene	ND		2	ug/l	09/27/18	09/28/18
Anthracene	ND		2	ug/l	09/27/18	09/28/18
Benzo(a)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(a)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(b)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(g,h,i)perylene	ND		2	ug/l	09/27/18	09/28/18
Benzo(k)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Chrysene	ND		0.5	ug/l	09/27/18	09/28/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Fluoranthene	ND		2	ug/l	09/27/18	09/28/18
Fluorene	ND		2	ug/l	09/27/18	09/28/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Naphthalene	ND		0.5	ug/l	09/27/18	09/28/18
Phenanthrene	ND		2	ug/l	09/27/18	09/28/18
Pyrene	ND		2	ug/l	09/27/18	09/28/18

Surrogate(s)	Recovery%	Limits		
<i>Nitrobenzene-d5</i>	85.9%	15-130	09/27/18	09/28/18
<i>p-Terphenyl-d14</i>	87.1%	50-130	09/27/18	09/28/18
<i>2-Fluorobiphenyl</i>	84.5%	35-130	09/27/18	09/28/18
<i>Phenol-d6</i>	17.2%	10-83	09/27/18	09/28/18
<i>2,4,6-Tribromophenol</i>	88.4%	44-120	09/27/18	09/28/18
<i>2-Fluorophenol</i>	31.1%	10-81	09/27/18	09/28/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0990 - Residual chlorine										
Blank (B8I0990-BLK1)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8I0990-BLK2)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8I0990-BS1)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.6	90-110		
LCS (B8I0990-BS2)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.8	90-110		
Duplicate (B8I0990-DUP1)					Source: 8I25012-01		Prepared & Analyzed: 09/25/18			
Total Residual Chlorine	0.06		0.01	mg/L		0.06			1.65	20
Matrix Spike (B8I0990-MS1)					Source: 8I25012-01		Prepared & Analyzed: 09/25/18			
Total Residual Chlorine	0.27		0.01	mg/L	0.500	0.06	41.2	80-120		
Batch: B8I0991 - Hexavalent Chrome										
Blank (B8I0991-BLK1)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0991-BLK2)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0991-BLK3)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0991 - Hexavalent Chrome (Continued)										
LCS (B8I0991-BS1)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.8	90-110		
LCS (B8I0991-BS2)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	0.10		0.01	mg/L	0.100		97.0	90-110		
LCS (B8I0991-BS3)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.0	90-110		
LCS (B8I0991-BS4)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.0	90-110		
Duplicate (B8I0991-DUP1)					Source: 8I25012-02		Prepared & Analyzed: 09/25/18			
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8I0991-MS1)					Source: 8I25012-02		Prepared & Analyzed: 09/25/18			
Hexavalent chromium	0.38		0.01	mg/L	0.500	ND	75.0	80-120		
Batch: B8I0994 - Oil & Grease										
Blank (B8I0994-BLK1)					Prepared: 09/26/18 Analyzed: 09/27/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8I0994-BS1)					Prepared: 09/26/18 Analyzed: 09/27/18					
Oil & Grease SGT	14		2	mg/L	20.0		70.0	64-132		
Batch: B8I1026 - Cyanide										
Blank (B8I1026-BLK1)					Prepared & Analyzed: 09/26/18					
Cyanide	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1026 - Cyanide (Continued)										
Blank (B8I1026-BLK2)					Prepared & Analyzed: 09/26/18					
Cyanide	ND		0.01	mg/L						
LCS (B8I1026-BS1)					Prepared & Analyzed: 09/26/18					
Cyanide	0.11		0.01	mg/L	0.100		110	90-110		
LCS (B8I1026-BS2)					Prepared & Analyzed: 09/26/18					
Cyanide	0.10		0.01	mg/L	0.100		96.0	90-110		
LCS (B8I1026-BS3)					Prepared & Analyzed: 09/26/18					
Cyanide	0.11		0.01	mg/L	0.100		108	90-110		
Duplicate (B8I1026-DUP1)					Source: 8I19020-01		Prepared & Analyzed: 09/26/18			
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8I1026-MS1)					Source: 8I19020-01		Prepared & Analyzed: 09/26/18			
Cyanide	0.11		0.01	mg/L	0.100	ND	113	80-120		
Batch: B8I1031 - Chloride										
Blank (B8I1031-BLK1)					Prepared & Analyzed: 09/26/18					
Chloride	ND		1	mg/L						
LCS (B8I1031-BS1)					Prepared & Analyzed: 09/26/18					
Chloride	62		1	mg/L	60.6		102	90-110		
Duplicate (B8I1031-DUP1)					Source: 8I25012-01		Prepared & Analyzed: 09/26/18			
Chloride	519		10	mg/L		519			0.00	20

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1031 - Chloride (Continued)										
Matrix Spike (B8I1031-MS1)			Source: 8I25012-01		Prepared & Analyzed: 09/26/18					
Chloride	588		10	mg/L	60.6	519	113	80-120		
Batch: B8I1040 - pH										
LCS (B8I1040-BS1)					Prepared & Analyzed: 09/25/18					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B8I1040-BS2)					Prepared & Analyzed: 09/25/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8I1040-DUP1)			Source: 8I25010-01		Prepared & Analyzed: 09/25/18					
pH	7.5		0.1	SU		7.5			0.399	20
Batch: B8I1122 - TSS										
Blank (B8I1122-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	ND		2	mg/L						
LCS (B8I1122-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	964		10	mg/L	1000		96.4	90-110		
Duplicate (B8I1122-DUP1)			Source: 8I25012-01		Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	51		3	mg/L		48			7.00	20
Batch: B8I1153 - Ammonia										
Blank (B8I1153-BLK1)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1153 - Ammonia (Continued)										
Blank (B8I1153-BLK2)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L						
LCS (B8I1153-BS1)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00		90.8	90-110		
LCS (B8I1153-BS2)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00		94.7	90-110		
Duplicate (B8I1153-DUP1)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L		ND				20
Matrix Spike (B8I1153-MS1)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00	ND	88.5	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1001 - Hot plate acid digestion waters										
Blank (B8I1001-BLK1)					Prepared & Analyzed: 09/26/18					
Lead	ND		0.005	mg/L						
Antimony	ND		0.005	mg/L						
Zinc	ND		0.020	mg/L						
Selenium	ND		0.010	mg/L						
Silver	ND		0.005	mg/L						
Calcium	ND		0.05	mg/L						
Magnesium	ND		0.05	mg/L						
Chromium	ND		0.005	mg/L						
Nickel	ND		0.005	mg/L						
Arsenic	ND		0.010	mg/L						
Cadmium	ND		0.004	mg/L						
Copper	ND		0.020	mg/L						
Iron	ND		0.050	mg/L						
LCS (B8I1001-BS1)					Prepared & Analyzed: 09/26/18					
Iron	11.4		0.050	mg/L	10.0		114	85-115		
Nickel	1.04		0.005	mg/L	1.00		104	85-112		
Chromium	1.06		0.005	mg/L	1.00		106	85-115		
Calcium	11.6		0.05	mg/L	10.0		116	85-115		
Copper	1.05		0.020	mg/L	1.00		105	85-115		
Magnesium	11.3		0.05	mg/L	10.0		113	85-115		
Antimony	1.13		0.005	mg/L	1.00		113	85-115		
Lead	1.03		0.005	mg/L	1.00		103	85-115		
Zinc	1.07		0.020	mg/L	1.00		107	85-115		
Silver	0.442		0.005	mg/L	0.400		110	85-115		
Arsenic	0.216		0.010	mg/L	0.200		108	85-115		
Cadmium	1.03		0.004	mg/L	1.00		103	85-114		
Selenium	0.202		0.010	mg/L	0.200		101	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1017 - Purge-Trap										
Blank (B8I1017-BLK1)					Prepared & Analyzed: 09/25/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			47.3	ug/l	50.0		94.6	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			51.7	ug/l	50.0		103	70-130		
<i>Surrogate: Toluene-d8</i>			50.0	ug/l	50.0		100	70-130		
LCS (B8I1017-BS1)					Prepared & Analyzed: 09/25/18					
Benzene	21			ug/l	20.0		107	65-135		
Toluene	20			ug/l	20.0		98.4	70-130		
Acetone	26			ug/l	20.0		130	70-130		
tert-Butyl alcohol	19			ug/l	20.0		93.6	70-130		
Total xylenes	66		1	ug/l				70-130		
o-Xylene	23			ug/l	20.0		113	70-130		
m&p-Xylene	43			ug/l	40.0		108	70-130		
tert-Amyl methyl ether	22			ug/l	20.0		108	70-130		
Ethylbenzene	21			ug/l	20.0		104	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			53.2	ug/l	50.0		106	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			48.3	ug/l	50.0		96.6	70-130		
<i>Surrogate: Toluene-d8</i>			51.8	ug/l	50.0		104	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0043 - EPA 3580A										
Blank (B8J0043-BLK1)										
Ethanol	ND		20	mg/L						
Prepared & Analyzed: 10/01/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1073 - Sep-Funnel-extraction										
Blank (B8I1073-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			40.5	ug/l	50.0		81.0	15-130		
Surrogate: p-Terphenyl-d14			43.7	ug/l	50.0		87.5	50-130		
Surrogate: 2-Fluorobiphenyl			41.4	ug/l	50.0		82.8	35-130		
Surrogate: Phenol-d6			9.87	ug/l	50.0		19.7	10-83		
Surrogate: 2,4,6-Tribromophenol			39.2	ug/l	50.0		78.4	44-120		
Surrogate: 2-Fluorophenol			17.4	ug/l	50.0		34.7	10-81		
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LCS (B8I1073-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	13		2	ug/l	50.0		25.8	17-120		
Acenaphthene	48		2	ug/l	50.0		95.5	60-132		
Acenaphthylene	49		2	ug/l	50.0		98.4	54-126		
Anthracene	48		2	ug/l	50.0		95.2	43-120		
Benzo(a)anthracene	47		2	ug/l	50.0		94.9	42-133		
Benzo(a)pyrene	50		2	ug/l	50.0		100	32-148		
Benzo(b)fluoranthene	52		2	ug/l	50.0		104	42-140		
Benzo(g,h,i)perylene	49		2	ug/l	50.0		98.9	5-195		
Benzo(k)fluoranthene	50		2	ug/l	50.0		101	25-146		
Chrysene	47		2	ug/l	50.0		94.2	44-140		
Dibenz(a,h)anthracene	48		2	ug/l	50.0		97.0	5-200		
Fluoranthene	48		2	ug/l	50.0		96.4	43-121		
Fluorene	53		2	ug/l	50.0		106	70-120		
Indeno(1,2,3-cd)pyrene	49		2	ug/l	50.0		97.6	5-151		
Naphthalene	49		2	ug/l	50.0		98.9	36-120		
Phenanthrene	48		2	ug/l	50.0		96.3	65-120		
Pyrene	48		2	ug/l	50.0		96.1	70-120		
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Surrogate: Nitrobenzene-d5			49.1	ug/l	50.0		98.3	15-130		
Surrogate: p-Terphenyl-d14			44.2	ug/l	50.0		88.5	50-130		
Surrogate: 2-Fluorobiphenyl			50.1	ug/l	50.0		100	35-130		
Surrogate: Phenol-d6			11.0	ug/l	50.0		22.0	10-83		
Surrogate: 2,4,6-Tribromophenol			50.3	ug/l	50.0		101	44-120		
Surrogate: 2-Fluorophenol			20.0	ug/l	50.0		39.9	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

1-888-863-8522



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[illegible]

Netlab subcontracted the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

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Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	1 L Amb. Nonpres
Ethanol	400	1666, 1671, D3695	1 L Amb. Nonpres
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8125012
Client Project: 236 Salem St, Medford, MA

Report Date: 02-October-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 09/25/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8I25012. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8I25012-01	Influent	Water	09/24/2018	09/25/2018
8I25012-02	Effluent	Water	09/24/2018	09/25/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8I25012-02)**Analysis**

Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Nickel
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Zinc

Method

SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA 200.7
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 200.7

Influent (Lab Number: 8I25012-01)**Analysis**

Acid Base/Neutral Extractables
Ammonia
Antimony
Arsenic
Cadmium
Calcium
Chloride
Chromium
Copper
Cyanide
Hexavalent Chromium
Iron
Lead
Magnesium
Mercury
Methanol and Ethanol
Nickel
Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine

Method

EPA 625.1
SM4500-NH3-D
EPA 200.7
EPA 200.7
EPA 200.7
SM3120-B
SM4500CI-B
EPA 6010C
EPA 200.7
SM4500-CN-E
SM3500-Cr-B
EPA 200.7
EPA 200.7
SM3120-B
EPA 245.1
EPA-8100-mod
EPA 200.7
EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G

Request for Analysis (continued)

Influent (Lab Number: 8I25012-01) (continued)

Analysis

Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

The sample 'Influent' was reported with elevated detection limits due to the foaming nature of the sample.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0112	mg/L	09/26/18 9:33	09/26/18 13:40

Results: Calculation

Sample: Effluent
Lab Number: 8I25012-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0112	mg/L	09/26/18 9:33	09/26/18 13:43

Results: General Chemistry**Sample: Influent****Lab Number: 8I25012-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.7		0.1	mg/L	09/28/18	09/28/18
Chloride	519		10	mg/L	09/26/18	09/26/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/25/18 14:50	09/25/18 14:50
pH	6.8		0.1	SU	09/25/18 18:00	09/25/18 18:00
Oil & Grease SGT	ND		2	mg/L	09/26/18	09/27/18
Total Residual Chlorine	0.06		0.01	mg/L	09/25/18 17:45	09/25/18 17:45
Total Suspended Solids	48		4	mg/L	09/27/18	09/28/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8I25012-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.6		0.1	mg/L	09/28/18	09/28/18
Chloride	441		50	mg/L	09/26/18	09/26/18
Cyanide	ND		0.01	mg/L	09/26/18	09/26/18
Hexavalent chromium	ND		0.01	mg/L	09/25/18 14:50	09/25/18 14:50
pH	6.7		0.1	SU	09/25/18 18:00	09/25/18 18:00
Total Residual Chlorine	ND		0.01	mg/L	09/25/18 17:45	09/25/18 17:45
Total Suspended Solids	ND		2	mg/L	09/27/18	09/28/18

Results: Total Metals**Sample: Influent****Lab Number: 8I25012-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	276		0.0312	mg/L	09/26/18	09/26/18
Antimony	ND		0.001	mg/L	09/26/18	09/26/18
Arsenic	0.004		0.002	mg/L	09/26/18	09/26/18
Cadmium	ND		0.001	mg/L	09/26/18	09/26/18
Calcium	98.8		0.01	mg/L	09/26/18	09/26/18
Chromium	0.004		0.001	mg/L	09/26/18	09/26/18
Copper	ND		0.005	mg/L	09/26/18	09/26/18
Iron	3.96		0.012	mg/L	09/26/18	09/26/18
Lead	0.012		0.001	mg/L	09/26/18	09/26/18
Magnesium	7.25		0.01	mg/L	09/26/18	09/26/18
Mercury	ND		0.0002	mg/L	09/26/18	09/26/18
Nickel	0.003		0.001	mg/L	09/26/18	09/26/18
Selenium	ND		0.002	mg/L	09/26/18	09/26/18
Silver	ND		0.001	mg/L	09/26/18	09/26/18
Zinc	0.202		0.005	mg/L	09/26/18	09/26/18

Results: Total Metals

Sample: Effluent

Lab Number: 8I25012-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	271		0.0312	mg/L	09/26/18	09/26/18
Antimony	ND		0.001	mg/L	09/26/18	09/26/18
Arsenic	ND		0.002	mg/L	09/26/18	09/26/18
Cadmium	ND		0.001	mg/L	09/26/18	09/26/18
Calcium	98.1		0.01	mg/L	09/26/18	09/26/18
Chromium	ND		0.001	mg/L	09/26/18	09/26/18
Copper	ND		0.005	mg/L	09/26/18	09/26/18
Iron	0.066		0.012	mg/L	09/26/18	09/26/18
Lead	ND		0.001	mg/L	09/26/18	09/26/18
Magnesium	6.33		0.01	mg/L	09/26/18	09/26/18
Mercury	ND		0.0002	mg/L	09/26/18	09/26/18
Nickel	ND		0.001	mg/L	09/26/18	09/26/18
Selenium	ND		0.002	mg/L	09/26/18	09/26/18
Silver	ND		0.001	mg/L	09/26/18	09/26/18
Zinc	0.014		0.005	mg/L	09/26/18	09/26/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	09/28/18	09/28/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>121%</i>		<i>70-130</i>		09/28/18	09/28/18
<i>1,2-Dichlorobenzene-d4</i>	<i>126%</i>		<i>70-130</i>		09/28/18	09/28/18
Benzene	ND		5	ug/l	09/25/18	09/26/18
Toluene	22		5	ug/l	09/25/18	09/26/18
Acetone	ND		25	ug/l	09/25/18	09/26/18
tert-Butyl alcohol	ND		25	ug/l	09/25/18	09/26/18
Total xylenes	214		5	ug/l	09/25/18	09/26/18
o-Xylene	90		5	ug/l	09/25/18	09/26/18
m&p-Xylene	124		10	ug/l	09/25/18	09/26/18
tert-Amyl methyl ether	ND		5	ug/l	09/25/18	09/26/18
Ethylbenzene	20		5	ug/l	09/25/18	09/26/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>100%</i>		<i>70-130</i>		09/25/18	09/26/18
<i>1,2-Dichloroethane-d4</i>	<i>100%</i>		<i>70-130</i>		09/25/18	09/26/18
<i>Toluene-d8</i>	<i>105%</i>		<i>70-130</i>		09/25/18	09/26/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		20	mg/L	10/01/18	10/01/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8I25012-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	09/27/18	09/28/18
Acenaphthene	ND		2	ug/l	09/27/18	09/28/18
Acenaphthylene	ND		2	ug/l	09/27/18	09/28/18
Anthracene	ND		2	ug/l	09/27/18	09/28/18
Benzo(a)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(a)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(b)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(g,h,i)perylene	ND		2	ug/l	09/27/18	09/28/18
Benzo(k)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Chrysene	ND		0.5	ug/l	09/27/18	09/28/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Fluoranthene	ND		2	ug/l	09/27/18	09/28/18
Fluorene	ND		2	ug/l	09/27/18	09/28/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Naphthalene	ND		0.5	ug/l	09/27/18	09/28/18
Phenanthrene	ND		2	ug/l	09/27/18	09/28/18
Pyrene	ND		2	ug/l	09/27/18	09/28/18

Surrogate(s)	Recovery%	Limits		
<i>Nitrobenzene-d5</i>	85.9%	15-130	09/27/18	09/28/18
<i>p-Terphenyl-d14</i>	87.1%	50-130	09/27/18	09/28/18
<i>2-Fluorobiphenyl</i>	84.5%	35-130	09/27/18	09/28/18
<i>Phenol-d6</i>	17.2%	10-83	09/27/18	09/28/18
<i>2,4,6-Tribromophenol</i>	88.4%	44-120	09/27/18	09/28/18
<i>2-Fluorophenol</i>	31.1%	10-81	09/27/18	09/28/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0990 - Residual chlorine										
Blank (B8I0990-BLK1)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8I0990-BLK2)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8I0990-BS1)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.6	90-110		
LCS (B8I0990-BS2)					Prepared & Analyzed: 09/25/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.8	90-110		
Duplicate (B8I0990-DUP1)					Source: 8I25012-01		Prepared & Analyzed: 09/25/18			
Total Residual Chlorine	0.06		0.01	mg/L		0.06			1.65	20
Matrix Spike (B8I0990-MS1)					Source: 8I25012-01		Prepared & Analyzed: 09/25/18			
Total Residual Chlorine	0.27		0.01	mg/L	0.500	0.06	41.2	80-120		
Batch: B8I0991 - Hexavalent Chrome										
Blank (B8I0991-BLK1)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0991-BLK2)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8I0991-BLK3)					Prepared & Analyzed: 09/25/18					
Hexavalent chromium	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I0991 - Hexavalent Chrome (Continued)										
LCS (B8I0991-BS1)										
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.8	90-110		
LCS (B8I0991-BS2)										
Hexavalent chromium	0.10		0.01	mg/L	0.100		97.0	90-110		
LCS (B8I0991-BS3)										
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.0	90-110		
LCS (B8I0991-BS4)										
Hexavalent chromium	0.45		0.01	mg/L	0.500		90.0	90-110		
Duplicate (B8I0991-DUP1)										
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8I0991-MS1)										
Hexavalent chromium	0.38		0.01	mg/L	0.500	ND	75.0	80-120		
Batch: B8I0994 - Oil & Grease										
Blank (B8I0994-BLK1)										
Oil & Grease SGT	ND		2	mg/L						
LCS (B8I0994-BS1)										
Oil & Grease SGT	14		2	mg/L	20.0		70.0	64-132		
Batch: B8I1026 - Cyanide										
Blank (B8I1026-BLK1)										
Cyanide	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1026 - Cyanide (Continued)										
Blank (B8I1026-BLK2)					Prepared & Analyzed: 09/26/18					
Cyanide	ND		0.01	mg/L						
LCS (B8I1026-BS1)					Prepared & Analyzed: 09/26/18					
Cyanide	0.11		0.01	mg/L	0.100		110	90-110		
LCS (B8I1026-BS2)					Prepared & Analyzed: 09/26/18					
Cyanide	0.10		0.01	mg/L	0.100		96.0	90-110		
LCS (B8I1026-BS3)					Prepared & Analyzed: 09/26/18					
Cyanide	0.11		0.01	mg/L	0.100		108	90-110		
Duplicate (B8I1026-DUP1)					Source: 8I19020-01					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8I1026-MS1)					Source: 8I19020-01					
Cyanide	0.11		0.01	mg/L	0.100	ND	113	80-120		
Batch: B8I1031 - Chloride										
Blank (B8I1031-BLK1)					Prepared & Analyzed: 09/26/18					
Chloride	ND		1	mg/L						
LCS (B8I1031-BS1)					Prepared & Analyzed: 09/26/18					
Chloride	62		1	mg/L	60.6		102	90-110		
Duplicate (B8I1031-DUP1)					Source: 8I25012-01					
Chloride	519		10	mg/L		519			0.00	20

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1031 - Chloride (Continued)										
Matrix Spike (B8I1031-MS1)			Source: 8I25012-01		Prepared & Analyzed: 09/26/18					
Chloride	588		10	mg/L	60.6	519	113	80-120		
Batch: B8I1040 - pH										
LCS (B8I1040-BS1)					Prepared & Analyzed: 09/25/18					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B8I1040-BS2)					Prepared & Analyzed: 09/25/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8I1040-DUP1)			Source: 8I25010-01		Prepared & Analyzed: 09/25/18					
pH	7.5		0.1	SU		7.5			0.399	20
Batch: B8I1122 - TSS										
Blank (B8I1122-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	ND		2	mg/L						
LCS (B8I1122-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	964		10	mg/L	1000		96.4	90-110		
Duplicate (B8I1122-DUP1)			Source: 8I25012-01		Prepared: 09/27/18 Analyzed: 09/28/18					
Total Suspended Solids	51		3	mg/L		48			7.00	20
Batch: B8I1153 - Ammonia										
Blank (B8I1153-BLK1)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1153 - Ammonia (Continued)										
Blank (B8I1153-BLK2)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L						
LCS (B8I1153-BS1)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00		90.8	90-110		
LCS (B8I1153-BS2)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00		94.7	90-110		
Duplicate (B8I1153-DUP1)					Prepared & Analyzed: 09/28/18					
Ammonia	ND		0.1	mg/L		ND				20
Matrix Spike (B8I1153-MS1)					Prepared & Analyzed: 09/28/18					
Ammonia	0.9		0.1	mg/L	1.00	ND	88.5	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1001 - Hot plate acid digestion waters										
Blank (B8I1001-BLK1)					Prepared & Analyzed: 09/26/18					
Lead	ND		0.005	mg/L						
Antimony	ND		0.005	mg/L						
Zinc	ND		0.020	mg/L						
Selenium	ND		0.010	mg/L						
Silver	ND		0.005	mg/L						
Calcium	ND		0.05	mg/L						
Magnesium	ND		0.05	mg/L						
Chromium	ND		0.005	mg/L						
Nickel	ND		0.005	mg/L						
Arsenic	ND		0.010	mg/L						
Cadmium	ND		0.004	mg/L						
Copper	ND		0.020	mg/L						
Iron	ND		0.050	mg/L						
LCS (B8I1001-BS1)					Prepared & Analyzed: 09/26/18					
Iron	11.4		0.050	mg/L	10.0		114	85-115		
Nickel	1.04		0.005	mg/L	1.00		104	85-112		
Chromium	1.06		0.005	mg/L	1.00		106	85-115		
Calcium	11.6		0.05	mg/L	10.0		116	85-115		
Copper	1.05		0.020	mg/L	1.00		105	85-115		
Magnesium	11.3		0.05	mg/L	10.0		113	85-115		
Antimony	1.13		0.005	mg/L	1.00		113	85-115		
Lead	1.03		0.005	mg/L	1.00		103	85-115		
Zinc	1.07		0.020	mg/L	1.00		107	85-115		
Silver	0.442		0.005	mg/L	0.400		110	85-115		
Arsenic	0.216		0.010	mg/L	0.200		108	85-115		
Cadmium	1.03		0.004	mg/L	1.00		103	85-114		
Selenium	0.202		0.010	mg/L	0.200		101	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1017 - Purge-Trap										
Blank (B8I1017-BLK1)					Prepared & Analyzed: 09/25/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
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Surrogate: 4-Bromofluorobenzene			47.3	ug/l	50.0		94.6	70-130		
Surrogate: 1,2-Dichloroethane-d4			51.7	ug/l	50.0		103	70-130		
Surrogate: Toluene-d8			50.0	ug/l	50.0		100	70-130		
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LCS (B8I1017-BS1)					Prepared & Analyzed: 09/25/18					
Benzene	21			ug/l	20.0		107	65-135		
Toluene	20			ug/l	20.0		98.4	70-130		
Acetone	26			ug/l	20.0		130	70-130		
tert-Butyl alcohol	19			ug/l	20.0		93.6	70-130		
Total xylenes	66		1	ug/l				70-130		
o-Xylene	23			ug/l	20.0		113	70-130		
m&p-Xylene	43			ug/l	40.0		108	70-130		
tert-Amyl methyl ether	22			ug/l	20.0		108	70-130		
Ethylbenzene	21			ug/l	20.0		104	60-140		
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Surrogate: 4-Bromofluorobenzene			53.2	ug/l	50.0		106	70-130		
Surrogate: 1,2-Dichloroethane-d4			48.3	ug/l	50.0		96.6	70-130		
Surrogate: Toluene-d8			51.8	ug/l	50.0		104	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0043 - EPA 3580A										
Blank (B8J0043-BLK1)										
Ethanol	ND		20	mg/L						
Prepared & Analyzed: 10/01/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1073 - Sep-Funnel-extraction										
Blank (B8I1073-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			40.5	ug/l	50.0		81.0	15-130		
Surrogate: p-Terphenyl-d14			43.7	ug/l	50.0		87.5	50-130		
Surrogate: 2-Fluorobiphenyl			41.4	ug/l	50.0		82.8	35-130		
Surrogate: Phenol-d6			9.87	ug/l	50.0		19.7	10-83		
Surrogate: 2,4,6-Tribromophenol			39.2	ug/l	50.0		78.4	44-120		
Surrogate: 2-Fluorophenol			17.4	ug/l	50.0		34.7	10-81		
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LCS (B8I1073-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	13		2	ug/l	50.0		25.8	17-120		
Acenaphthene	48		2	ug/l	50.0		95.5	60-132		
Acenaphthylene	49		2	ug/l	50.0		98.4	54-126		
Anthracene	48		2	ug/l	50.0		95.2	43-120		
Benzo(a)anthracene	47		2	ug/l	50.0		94.9	42-133		
Benzo(a)pyrene	50		2	ug/l	50.0		100	32-148		
Benzo(b)fluoranthene	52		2	ug/l	50.0		104	42-140		
Benzo(g,h,i)perylene	49		2	ug/l	50.0		98.9	5-195		
Benzo(k)fluoranthene	50		2	ug/l	50.0		101	25-146		
Chrysene	47		2	ug/l	50.0		94.2	44-140		
Dibenz(a,h)anthracene	48		2	ug/l	50.0		97.0	5-200		
Fluoranthene	48		2	ug/l	50.0		96.4	43-121		
Fluorene	53		2	ug/l	50.0		106	70-120		
Indeno(1,2,3-cd)pyrene	49		2	ug/l	50.0		97.6	5-151		
Naphthalene	49		2	ug/l	50.0		98.9	36-120		
Phenanthrene	48		2	ug/l	50.0		96.3	65-120		
Pyrene	48		2	ug/l	50.0		96.1	70-120		
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Surrogate: Nitrobenzene-d5			49.1	ug/l	50.0		98.3	15-130		
Surrogate: p-Terphenyl-d14			44.2	ug/l	50.0		88.5	50-130		
Surrogate: 2-Fluorobiphenyl			50.1	ug/l	50.0		100	35-130		
Surrogate: Phenol-d6			11.0	ug/l	50.0		22.0	10-83		
Surrogate: 2,4,6-Tribromophenol			50.3	ug/l	50.0		101	44-120		
Surrogate: 2-Fluorophenol			20.0	ug/l	50.0		39.9	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

1-888-863-8522



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[illegible]

Netlab subcontracted the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

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Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	1 L Amb. Nonpres
Ethanol	400	1666, 1671, D3695	1 L Amb. Nonpres
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8127016
Client Project: 236 Salem St, Medford, MA

Report Date: 04-October-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 09/27/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8I27016. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8I27016-01	Effluent	Water	09/27/2018	09/27/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8I27016-01)

Analysis

Acid Base/Neutral Extractables
Methanol and Ethanol
Oil & Grease, SGT
Volatile Organic Compounds
Volatile Organic Compounds

Method

EPA 625.1
EPA-8100-mod
EPA 1664A
EPA 524.2
EPA 624.1

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar, USEPA, 1999

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Results: General Chemistry

Sample: Effluent
Lab Number: 8I27016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Oil & Grease SGT	ND		2	mg/L	10/03/18	10/03/18

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 8I27016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	10/02/18	10/02/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>110%</i>		<i>70-130</i>		10/02/18	10/02/18
<i>1,2-Dichlorobenzene-d4</i>	<i>117%</i>		<i>70-130</i>		10/02/18	10/02/18
Benzene	ND		1	ug/l	09/27/18	09/28/18
Toluene	ND		1	ug/l	09/27/18	09/28/18
Acetone	ND		5	ug/l	09/27/18	09/28/18
tert-Butyl alcohol	ND		5	ug/l	09/27/18	09/28/18
Total xylenes	ND		1	ug/l	09/27/18	09/28/18
o-Xylene	ND		1	ug/l	09/27/18	09/28/18
m&p-Xylene	ND		2	ug/l	09/27/18	09/28/18
tert-Amyl methyl ether	ND		1	ug/l	09/27/18	09/28/18
Ethylbenzene	ND		1	ug/l	09/27/18	09/28/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>92.1%</i>		<i>70-130</i>		09/27/18	09/28/18
<i>1,2-Dichloroethane-d4</i>	<i>106%</i>		<i>70-130</i>		09/27/18	09/28/18
<i>Toluene-d8</i>	<i>97.5%</i>		<i>70-130</i>		09/27/18	09/28/18

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 8I27016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		20	mg/L	10/01/18	10/01/18

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 8I27016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	09/27/18	09/28/18
Acenaphthene	ND		2	ug/l	09/27/18	09/28/18
Acenaphthylene	ND		2	ug/l	09/27/18	09/28/18
Anthracene	ND		2	ug/l	09/27/18	09/28/18
Benzo(a)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(a)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(b)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Benzo(g,h,i)perylene	ND		2	ug/l	09/27/18	09/28/18
Benzo(k)fluoranthene	ND		0.5	ug/l	09/27/18	09/28/18
Chrysene	ND		0.5	ug/l	09/27/18	09/28/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	09/27/18	09/28/18
Fluoranthene	ND		2	ug/l	09/27/18	09/28/18
Fluorene	ND		2	ug/l	09/27/18	09/28/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	09/27/18	09/28/18
Naphthalene	ND		0.5	ug/l	09/27/18	09/28/18
Phenanthrene	ND		2	ug/l	09/27/18	09/28/18
Pyrene	ND		2	ug/l	09/27/18	09/28/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	81.6%		15-130		09/27/18	09/28/18
<i>p-Terphenyl-d14</i>	95.5%		50-130		09/27/18	09/28/18
<i>2-Fluorobiphenyl</i>	74.6%		35-130		09/27/18	09/28/18
<i>Phenol-d6</i>	15.2%		10-83		09/27/18	09/28/18
<i>2,4,6-Tribromophenol</i>	88.2%		44-120		09/27/18	09/28/18
<i>2-Fluorophenol</i>	27.8%		10-81		09/27/18	09/28/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: B8J0183 - Oil & Grease										
Blank (B8J0183-BLK1)					Prepared & Analyzed: 10/03/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8J0183-BS1)					Prepared & Analyzed: 10/03/18					
Oil & Grease SGT	17		2	mg/L	20.0		83.0	64-132		

Quality Control (Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0027 - Purge-Trap										
Blank (B8J0027-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>43.1</i>	<i>ug/l</i>	<i>50.0</i>		<i>86.3</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>50.2</i>	<i>ug/l</i>	<i>50.0</i>		<i>100</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>			<i>48.0</i>	<i>ug/l</i>	<i>50.0</i>		<i>96.1</i>	<i>70-130</i>		
LCS (B8J0027-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Benzene	25			ug/l	20.0		127	65-135		
Toluene	26			ug/l	20.0		128	70-130		
Acetone	15			ug/l	20.0		73.2	70-130		
tert-Butyl alcohol	21			ug/l	20.0		103	70-130		
Total xylenes	72		1	ug/l				70-130		
o-Xylene	24			ug/l	20.0		120	70-130		
m&p-Xylene	48			ug/l	40.0		120	70-130		
tert-Amyl methyl ether	24			ug/l	20.0		118	70-130		
Ethylbenzene	25			ug/l	20.0		125	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>44.6</i>	<i>ug/l</i>	<i>50.0</i>		<i>89.2</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>53.4</i>	<i>ug/l</i>	<i>50.0</i>		<i>107</i>	<i>70-130</i>		
<i>Surrogate: Toluene-d8</i>			<i>49.4</i>	<i>ug/l</i>	<i>50.0</i>		<i>98.8</i>	<i>70-130</i>		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0043 - EPA 3580A										
Blank (B8J0043-BLK1)										
Ethanol	ND		20	mg/L						
Prepared & Analyzed: 10/01/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8I1073 - Sep-Funnel-extraction										
Blank (B8I1073-BLK1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		0.1	ug/l						
Benzo(a)pyrene	ND		0.1	ug/l						
Benzo(b)fluoranthene	ND		0.1	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		0.1	ug/l						
Chrysene	ND		0.1	ug/l						
Dibenz(a,h)anthracene	ND		0.1	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.1	ug/l						
Naphthalene	ND		0.1	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			40.5	ug/l	50.0		81.0	15-130		
Surrogate: p-Terphenyl-d14			43.7	ug/l	50.0		87.5	50-130		
Surrogate: 2-Fluorobiphenyl			41.4	ug/l	50.0		82.8	35-130		
Surrogate: Phenol-d6			9.87	ug/l	50.0		19.7	10-83		
Surrogate: 2,4,6-Tribromophenol			39.2	ug/l	50.0		78.4	44-120		
Surrogate: 2-Fluorophenol			17.4	ug/l	50.0		34.7	10-81		
<hr/>										
LCS (B8I1073-BS1)					Prepared: 09/27/18 Analyzed: 09/28/18					
Phenol	13		2	ug/l	50.0		25.8	17-120		
Acenaphthene	48		2	ug/l	50.0		95.5	60-132		
Acenaphthylene	49		2	ug/l	50.0		98.4	54-126		
Anthracene	48		2	ug/l	50.0		95.2	43-120		
Benzo(a)anthracene	47		2	ug/l	50.0		94.9	42-133		
Benzo(a)pyrene	50		2	ug/l	50.0		100	32-148		
Benzo(b)fluoranthene	52		2	ug/l	50.0		104	42-140		
Benzo(g,h,i)perylene	49		2	ug/l	50.0		98.9	5-195		
Benzo(k)fluoranthene	50		2	ug/l	50.0		101	25-146		
Chrysene	47		2	ug/l	50.0		94.2	44-140		
Dibenz(a,h)anthracene	48		2	ug/l	50.0		97.0	5-200		
Fluoranthene	48		2	ug/l	50.0		96.4	43-121		
Fluorene	53		2	ug/l	50.0		106	70-120		
Indeno(1,2,3-cd)pyrene	49		2	ug/l	50.0		97.6	5-151		
Naphthalene	49		2	ug/l	50.0		98.9	36-120		
Phenanthrene	48		2	ug/l	50.0		96.3	65-120		
Pyrene	48		2	ug/l	50.0		96.1	70-120		
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Surrogate: Nitrobenzene-d5			49.1	ug/l	50.0		98.3	15-130		
Surrogate: p-Terphenyl-d14			44.2	ug/l	50.0		88.5	50-130		
Surrogate: 2-Fluorobiphenyl			50.1	ug/l	50.0		100	35-130		
Surrogate: Phenol-d6			11.0	ug/l	50.0		22.0	10-83		
Surrogate: 2,4,6-Tribromophenol			50.3	ug/l	50.0		101	44-120		
Surrogate: 2-Fluorophenol			20.0	ug/l	50.0		39.9	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

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— IN THE FRIDGE —

CHAIN OF CUSTODY RECORD

[illegible]

***Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, VCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CTETPH



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8J03019
Client Project: 236 Salem St, Medford, MA

Report Date: 10-October-2018

Prepared for:

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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 10/03/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8J03019. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8J03019-01	PE-SW-1	Soil	10/02/2018	10/03/2018
8J03019-02	PE-SW-2	Soil	10/02/2018	10/03/2018
8J03019-03	PE-SW-3	Soil	10/02/2018	10/03/2018
8J03019-04	PE-SP-1	Soil	10/02/2018	10/03/2018
8J03019-05	PE-SP-2	Soil	10/02/2018	10/03/2018
8J03019-06	PE-SP-3	Soil	10/02/2018	10/03/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

PE-SP-1 (Lab Number: 8J03019-04)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

PE-SP-2 (Lab Number: 8J03019-05)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

PE-SP-3 (Lab Number: 8J03019-06)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

PE-SW-1 (Lab Number: 8J03019-01)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

PE-SW-2 (Lab Number: 8J03019-02)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

PE-SW-3 (Lab Number: 8J03019-03)

Analysis

MADEP EPH
MADEP VPH

Method

MADEP EPH
MADEP VPH

Method References

Method for the Determination of Extractable Petroleum Hydrocarbons, Rev. 1.1, Massachusetts Department of Environmental Protection, 2004

Method for the Determination of Volatile Petroleum Hydrocarbons, Rev. 2.1, Massachusetts Department of Environmental Protection, 2018

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

EPH

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

VPH

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Petroleum Hydrocarbons
Sample: PE-SW-1 (8J03019-01)

SAMPLE INFORMATION

SAMPLE INFORMATION				
Matrix	Soil			
Containers	Satisfactory			
Sample Preservation	Aqueous	NA		
	Soil or Sediment	Preserved with methanol and/or in an air-tight container		ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)		
		Received in air-tight container		
Temperature	Received on Ice	Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SW-1		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-01		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			6.90		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	2.9	mg/kg	3.4	10/09/18 15:32
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	2.9	mg/kg	317	10/09/18 15:32
Benzene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 15:32
Ethylbenzene	C9-C2	50X	0.3	mg/kg	<0.3	10/09/18 15:32
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.06	mg/kg	<0.06	10/09/18 15:32
Naphthalene	NA	50X	0.6	mg/kg	3.4	10/09/18 15:32
Toluene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 15:32
m&p-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/09/18 15:32
o-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/09/18 15:32
Total xylenes		50X	0.6	mg/kg	<0.6	10/09/18 15:32
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	2.9	mg/kg	3.4	10/09/18 15:32
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	2.9	mg/kg	153	10/09/18 15:32
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	2.9	mg/kg	164	10/09/18 15:32
2,5-Dibromotoluene-PID					85.0	10/09/18 15:32
2,5-Dibromotoluene-FID					101	10/09/18 15:32
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: PE-SW-2 (8J03019-02)

SAMPLE INFORMATION

SAMPLE INFORMATION				
Matrix	Soil			
Containers	Satisfactory			
Sample Preservation	Aqueous	NA		
	Soil or Sediment	Preserved with methanol and/or in an air-tight container		ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)		
		Received in air-tight container		
Temperature	Received on Ice	Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SW-2		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-02		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			21.50		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	3.8	mg/kg	<3.8	10/10/18 12:20
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	3.8	mg/kg	<3.8	10/10/18 12:20
Benzene	C5-C8	50X	0.4	mg/kg	<0.4	10/10/18 12:20
Ethylbenzene	C9-C2	50X	0.4	mg/kg	<0.4	10/10/18 12:20
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.08	mg/kg	<0.08	10/10/18 12:20
Naphthalene	NA	50X	0.8	mg/kg	<0.8	10/10/18 12:20
Toluene	C5-C8	50X	0.4	mg/kg	<0.4	10/10/18 12:20
m&p-Xylene	C9-C12	50X	0.8	mg/kg	<0.8	10/10/18 12:20
o-Xylene	C9-C12	50X	0.8	mg/kg	<0.8	10/10/18 12:20
Total xylenes		50X	0.8	mg/kg	<0.8	10/10/18 12:20
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	3.8	mg/kg	<3.8	10/10/18 12:20
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	3.8	mg/kg	<3.8	10/10/18 12:20
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	3.8	mg/kg	<3.8	10/10/18 12:20
2,5-Dibromotoluene-PID					90.9	10/10/18 12:20
2,5-Dibromotoluene-FID					102	10/10/18 12:20
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: PE-SW-3 (8J03019-03)

SAMPLE INFORMATION

SAMPLE INFORMATION				
Matrix	Soil			
Containers	Satisfactory			
Sample Preservation	Aqueous	NA		
	Soil or Sediment	Preserved with methanol and/or in an air-tight container		ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)		
		Received in air-tight container		
Temperature	Received on Ice	Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SW-3		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-03		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			12.10		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	3.2	mg/kg	<3.2	10/10/18 11:40
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	3.2	mg/kg	<3.2	10/10/18 11:40
Benzene	C5-C8	50X	0.3	mg/kg	<0.3	10/10/18 11:40
Ethylbenzene	C9-C2	50X	0.3	mg/kg	<0.3	10/10/18 11:40
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.06	mg/kg	<0.06	10/10/18 11:40
Naphthalene	NA	50X	0.6	mg/kg	<0.6	10/10/18 11:40
Toluene	C5-C8	50X	0.3	mg/kg	<0.3	10/10/18 11:40
m&p-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/10/18 11:40
o-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/10/18 11:40
Total xylenes		50X	0.6	mg/kg	<0.6	10/10/18 11:40
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	3.2	mg/kg	<3.2	10/10/18 11:40
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	3.2	mg/kg	<3.2	10/10/18 11:40
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	3.2	mg/kg	<3.2	10/10/18 11:40
2,5-Dibromotoluene-PID					90.2	10/10/18 11:40
2,5-Dibromotoluene-FID					103	10/10/18 11:40
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: PE-SP-1 (8J03019-04)

SAMPLE INFORMATION

SAMPLE INFORMATION				
Matrix	Soil			
Containers	Satisfactory			
Sample Preservation	Aqueous	NA		
	Soil or Sediment	Preserved with methanol and/or in an air-tight container		ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)		
		Received in air-tight container		
Temperature	Received on Ice	Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SP-1		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-04		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			11.30		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	7.8	10/09/18 17:32
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	140	10/09/18 17:32
Benzene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 17:32
Ethylbenzene	C9-C2	50X	0.3	mg/kg	<0.3	10/09/18 17:32
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.06	mg/kg	<0.06	10/09/18 17:32
Naphthalene	NA	50X	0.6	mg/kg	<0.6	10/09/18 17:32
Toluene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 17:32
m&p-Xylene	C9-C12	50X	0.6	mg/kg	0.8	10/09/18 17:32
o-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/09/18 17:32
Total xylenes		50X	0.6	mg/kg	1.4	10/09/18 17:32
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	3.1	mg/kg	7.8	10/09/18 17:32
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	3.1	mg/kg	59.1	10/09/18 17:32
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	79.7	10/09/18 17:32
2,5-Dibromotoluene-PID					83.7	10/09/18 17:32
2,5-Dibromotoluene-FID					99.7	10/09/18 17:32
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: PE-SP-2 (8J03019-05)

SAMPLE INFORMATION

Matrix	Soil		
Containers	Satisfactory		
Sample Preservation	Aqueous	NA	
	Soil or Sediment	Preserved with methanol and/or in an air-tight container	ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)	
		Received in air-tight container	
Temperature	Received on Ice Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SP-2		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-05		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			13.30		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	3.3	mg/kg	<3.3	10/10/18 11:00
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	3.3	mg/kg	<3.3	10/10/18 11:00
Benzene	C5-C8	50X	0.3	mg/kg	<0.3	10/10/18 11:00
Ethylbenzene	C9-C2	50X	0.3	mg/kg	<0.3	10/10/18 11:00
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.07	mg/kg	<0.07	10/10/18 11:00
Naphthalene	NA	50X	0.7	mg/kg	<0.7	10/10/18 11:00
Toluene	C5-C8	50X	0.3	mg/kg	<0.3	10/10/18 11:00
m&p-Xylene	C9-C12	50X	0.7	mg/kg	<0.7	10/10/18 11:00
o-Xylene	C9-C12	50X	0.7	mg/kg	<0.7	10/10/18 11:00
Total xylenes		50X	0.7	mg/kg	<0.7	10/10/18 11:00
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	3.3	mg/kg	<3.3	10/10/18 11:00
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	3.3	mg/kg	<3.3	10/10/18 11:00
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	3.3	mg/kg	<3.3	10/10/18 11:00
2,5-Dibromotoluene-PID					90.1	10/10/18 11:00
2,5-Dibromotoluene-FID					104	10/10/18 11:00
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Volatile Petroleum Hydrocarbons
Sample: PE-SP-3 (8J03019-06)

SAMPLE INFORMATION

SAMPLE INFORMATION				
Matrix	Soil			
Containers	Satisfactory			
Sample Preservation	Aqueous	NA		
	Soil or Sediment	Preserved with methanol and/or in an air-tight container		ml methanol per gram soil: 1:1 +/- 25%
		Methanol preserved (covering sample)		
		Received in air-tight container		
Temperature	Received on Ice	Received at: 4+/-2 C°		

VPH ANALYTICAL RESULTS

Method for Ranges: MADEP VPH-18-2.1	Client ID			PE-SP-3		
Method for Target Analytes: MADEP VPH-18-2.1	Lab ID			8J03019-06		
VPH Surrogate Standards: PID: 2,5-Dibromotoluene FID: 2,5-Dibromotoluene	Date Collected			10/02/18		
	Date Received			10/03/18		
	% Moisture			10.70		
RANGE/TARGET ANALYTE	Elution Range	Dilution	RL	Units	Result	Analyzed
Unadjusted C5-C8 Aliphatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	<3.1	10/09/18 18:51
Unadjusted C9-C12 Aliphatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	<3.1	10/09/18 18:51
Benzene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 18:51
Ethylbenzene	C9-C2	50X	0.3	mg/kg	<0.3	10/09/18 18:51
Methyl t-butyl ether (MTBE)	C5-C8	50X	0.06	mg/kg	<0.06	10/09/18 18:51
Naphthalene	NA	50X	0.6	mg/kg	<0.6	10/09/18 18:51
Toluene	C5-C8	50X	0.3	mg/kg	<0.3	10/09/18 18:51
m&p-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/09/18 18:51
o-Xylene	C9-C12	50X	0.6	mg/kg	<0.6	10/09/18 18:51
Total xylenes		50X	0.6	mg/kg	<0.6	10/09/18 18:51
C5-C8 Aliphatic Hydrocarbons [1,2]	NA	50X	3.1	mg/kg	<3.1	10/09/18 18:51
C9-C12 Aliphatic Hydrocarbons [1,3]	NA	50X	3.1	mg/kg	<3.1	10/09/18 18:51
C9-C10 Aromatic Hydrocarbons [1]	NA	50X	3.1	mg/kg	<3.1	10/09/18 18:51
2,5-Dibromotoluene-PID					94.8	10/09/18 18:51
2,5-Dibromotoluene-FID					99.6	10/09/18 18:51
Surrogate Acceptance Range					70-130%	

[1] Hydrocarbon Range data excludes concentrations of any surrogate(s) and/or internal standards eluting in that range

[2] C5-C8 Aliphatic Hydrocarbons exclude the concentration of Target Analytes eluting in that range

[3] C9-C12 Aliphatic Hydrocarbons exclude conc of Target Analytes eluting in that range AND concentration of C9-C10 Aromatic Hydrocarbons

Extractable Petroleum Hydrocarbons
Sample: PE-SW-1 (8J03019-01)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SW-1	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-01	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			6.90	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	14.0	mg/kg	51.8	10/09/18 10:22
Diesel PAH Analytes	Naphthalene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	2-Methylnaphthalene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Phenanthrene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Acenaphthene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
Other Target PAH Analytes	Acenaphthylene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Fluorene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Anthracene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Fluoranthene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Pyrene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Benzo(a)anthracene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Chrysene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Benzo(b)fluoranthene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Benzo(k)fluoranthene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Benzo(a)pyrene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Indeno(1,2,3-cd)pyrene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Dibenz(a,h)anthracene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
	Benzo(g,h,i)perylene	1X	0.35	mg/kg	<0.35	10/09/18 10:22
C9-C18 Aliphatic Hydrocarbons [1]		1X	14.0	mg/kg	<14.0	10/09/18 11:00
C19-C36 Aliphatic Hydrocarbons [1]		1X	14.0	mg/kg	188	10/09/18 11:00
C11-C22 Aromatic Hydrocarbons [1,2]		1X	14.0	mg/kg	51.8	10/09/18 10:22
Chlorooctadecane (Sample Surrogate)				%	60.8	10/09/18 11:00
o-Terphenyl (Sample Surrogate)				%	69.6	10/09/18 10:22
2-Fluorobiphenyl (Fractionation Surrogate)				%	85.4	10/09/18 10:22
2-Bromonaphthalene (Fractionation Surrogate)				%	77.6	10/09/18 10:22
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Extractable Petroleum Hydrocarbons
Sample: PE-SW-2 (8J03019-02)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SW-2	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-02	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			21.50	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	16.5	mg/kg	<16.5	10/09/18 10:48
Diesel PAH Analytes	Naphthalene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	2-Methylnaphthalene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Phenanthrene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Acenaphthene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
Other Target PAH Analytes	Acenaphthylene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Fluorene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Anthracene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Fluoranthene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Pyrene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Benzo(a)anthracene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Chrysene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Benzo(b)fluoranthene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Benzo(k)fluoranthene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Benzo(a)pyrene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Indeno(1,2,3-cd)pyrene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Dibenz(a,h)anthracene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
	Benzo(g,h,i)perylene	1X	0.41	mg/kg	<0.41	10/09/18 10:48
C9-C18 Aliphatic Hydrocarbons [1]		1X	16.5	mg/kg	<16.5	10/09/18 11:24
C19-C36 Aliphatic Hydrocarbons [1]		1X	16.5	mg/kg	<16.5	10/09/18 11:24
C11-C22 Aromatic Hydrocarbons [1,2]		1X	16.5	mg/kg	<16.5	10/09/18 10:48
Chlorooctadecane (Sample Surrogate)				%	60.2	10/09/18 11:24
o-Terphenyl (Sample Surrogate)				%	67.9	10/09/18 10:48
2-Fluorobiphenyl (Fractionation Surrogate)				%	91.1	10/09/18 10:48
2-Bromonaphthalene (Fractionation Surrogate)				%	82.6	10/09/18 10:48
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Extractable Petroleum Hydrocarbons
Sample: PE-SW-3 (8J03019-03)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SW-3	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-03	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			12.10	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	15.0	mg/kg	<15.0	10/09/18 11:13
Diesel PAH Analytes	Naphthalene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	2-Methylnaphthalene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Phenanthrene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Acenaphthene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
Other Target PAH Analytes	Acenaphthylene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Fluorene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Benzo(a)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Chrysene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Benzo(b)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Benzo(k)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Benzo(a)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Indeno(1,2,3-cd)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Dibenz(a,h)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
	Benzo(g,h,i)perylene	1X	0.37	mg/kg	<0.37	10/09/18 11:13
C9-C18 Aliphatic Hydrocarbons [1]		1X	15.0	mg/kg	<15.0	10/09/18 11:47
C19-C36 Aliphatic Hydrocarbons [1]		1X	15.0	mg/kg	<15.0	10/09/18 11:47
C11-C22 Aromatic Hydrocarbons [1,2]		1X	15.0	mg/kg	<15.0	10/09/18 11:13
Chlorooctadecane (Sample Surrogate)				%	68.7	10/09/18 11:47
o-Terphenyl (Sample Surrogate)				%	65.7	10/09/18 11:13
2-Fluorobiphenyl (Fractionation Surrogate)				%	88.2	10/09/18 11:13
2-Bromonaphthalene (Fractionation Surrogate)				%	75.7	10/09/18 11:13
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Extractable Petroleum Hydrocarbons
Sample: PE-SP-1 (8J03019-04)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SP-1	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-04	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			11.30	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	14.9	mg/kg	1290	10/09/18 11:39
Diesel PAH Analytes	Naphthalene	1X	0.37	mg/kg	6.39	10/09/18 11:39
	2-Methylnaphthalene	1X	0.37	mg/kg	2.15	10/09/18 11:39
	Phenanthrene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Acenaphthene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
Other Target PAH Analytes	Acenaphthylene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Fluorene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Benzo(a)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Chrysene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Benzo(b)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Benzo(k)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Benzo(a)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Indeno(1,2,3-cd)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Dibenz(a,h)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
	Benzo(g,h,i)perylene	1X	0.37	mg/kg	<0.37	10/09/18 11:39
C9-C18 Aliphatic Hydrocarbons [1]		5X	74.7	mg/kg	140	10/09/18 13:32
C19-C36 Aliphatic Hydrocarbons [1]		5X	74.7	mg/kg	3230	10/09/18 13:32
C11-C22 Aromatic Hydrocarbons [1,2]		1X	14.9	mg/kg	1280	10/09/18 11:39
Chlorooctadecane (Sample Surrogate)				%	52.1	10/09/18 13:32
o-Terphenyl (Sample Surrogate)				%	64.6	10/09/18 11:39
2-Fluorobiphenyl (Fractionation Surrogate)				%	76.5	10/09/18 11:39
2-Bromonaphthalene (Fractionation Surrogate)				%	74.5	10/09/18 11:39
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Extractable Petroleum Hydrocarbons
Sample: PE-SP-2 (8J03019-05)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SP-2	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-05	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			13.30	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	15.3	mg/kg	21.6	10/09/18 12:04
Diesel PAH Analytes	Naphthalene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	2-Methylnaphthalene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Phenanthrene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Acenaphthene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
Other Target PAH Analytes	Acenaphthylene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Fluorene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Anthracene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Fluoranthene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Pyrene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Benzo(a)anthracene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Chrysene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Benzo(b)fluoranthene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Benzo(k)fluoranthene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Benzo(a)pyrene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Indeno(1,2,3-cd)pyrene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Dibenz(a,h)anthracene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
	Benzo(g,h,i)perylene	1X	0.38	mg/kg	<0.38	10/09/18 12:04
C9-C18 Aliphatic Hydrocarbons [1]		1X	15.3	mg/kg	<15.3	10/09/18 12:35
C19-C36 Aliphatic Hydrocarbons [1]		1X	15.3	mg/kg	29.8	10/09/18 12:35
C11-C22 Aromatic Hydrocarbons [1,2]		1X	15.3	mg/kg	21.6	10/09/18 12:04
Chlorooctadecane (Sample Surrogate)				%	69.4	10/09/18 12:35
o-Terphenyl (Sample Surrogate)				%	72.3	10/09/18 12:04
2-Fluorobiphenyl (Fractionation Surrogate)				%	94.2	10/09/18 12:04
2-Bromonaphthalene (Fractionation Surrogate)				%	86.9	10/09/18 12:04
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Extractable Petroleum Hydrocarbons
Sample: PE-SP-3 (8J03019-06)

SAMPLE INFORMATION

Matrix	Soil
Containers	Satisfactory
Aqueous Preservatives	NA
Temperature	Received on Ice Received at: 4+/-2 C°
Extraction Method	EPA Method 3546

EPH ANALYTICAL RESULTS

Method for Ranges: MADEP EPH 4-1.1		Client ID			PE-SP-3	
Method for Target Analytes: MADEP EPH 4-1.1		Lab ID			8J03019-06	
EPH Surrogate Standards: Aliphatic: Chlorooctadecane Aromatic: o-Terphenyl		Date Collected			10/02/18	
		Date Received			10/03/18	
		Date Thawed			NA	
		Date Extracted			10/05/18	
EPH Fractionation Surrogates: (1) 2-Fluorobiphenyl (2) 2-Bromonaphthalene		Percent Moisture			10.70	
RANGE/TARGET ANALYTE		Dilution	RL	Units	Result	Analyzed
Unadjusted C11-C22 Aromatic Hydrocarbons [1]		1X	14.9	mg/kg	23.5	10/09/18 12:30
Diesel PAH Analytes	Naphthalene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	2-Methylnaphthalene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Phenanthrene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Acenaphthene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
Other Target PAH Analytes	Acenaphthylene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Fluorene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Anthracene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Pyrene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Benzo(a)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Chrysene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Benzo(b)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Benzo(k)fluoranthene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Benzo(a)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Indeno(1,2,3-cd)pyrene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Dibenz(a,h)anthracene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
	Benzo(g,h,i)perylene	1X	0.37	mg/kg	<0.37	10/09/18 12:30
C9-C18 Aliphatic Hydrocarbons [1]		1X	14.9	mg/kg	<14.9	10/09/18 12:59
C19-C36 Aliphatic Hydrocarbons [1]		1X	14.9	mg/kg	53.1	10/09/18 12:59
C11-C22 Aromatic Hydrocarbons [1,2]		1X	14.9	mg/kg	23.5	10/09/18 12:30
Chlorooctadecane (Sample Surrogate)				%	74.8	10/09/18 12:59
o-Terphenyl (Sample Surrogate)				%	71.7	10/09/18 12:30
2-Fluorobiphenyl (Fractionation Surrogate)				%	89.2	10/09/18 12:30
2-Bromonaphthalene (Fractionation Surrogate)				%	80.8	10/09/18 12:30
Surrogate Acceptance Range [3]					40 - 140%	

[1] Hydrocarbon range data excludes area counts of any surrogate(s) and/or internal standards eluting in that range.

[2] C11-C22 Aromatic Hydrocarbons excludes the concentration of Target PAH Analytes.

[3] See the case narrative in cases where a dash (-) is entered in the surrogate recovery block.

Quality Control

Volatile Petroleum Hydrocarbons (MADEP-VPH)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0394 - MADEP VPH										
Blank (B8J0394-BLK1)					Prepared & Analyzed: 10/09/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
Unadjusted C9-C12 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
Benzene	ND		0.005	mg/kg						
Ethylbenzene	ND		0.005	mg/kg						
Methyl t-butyl ether (MTBE)	ND		0.001	mg/kg						
Naphthalene	ND		0.01	mg/kg						
Toluene	ND		0.005	mg/kg						
m&p-Xylene	ND		0.01	mg/kg						
o-Xylene	ND		0.01	mg/kg						
Total xylenes	ND		0.01	mg/kg						
C5-C8 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
C9-C12 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
C9-C10 Aromatic Hydrocarbons	ND		0.05	mg/kg						
<i>Surrogate: 2,5- Dibromotoluene-PID</i>			42.5	ug/l	50.0		85.0	70-130		
<i>Surrogate: 2,5- Dibromotoluene-FID</i>			50.4	ug/l	50.0		101	70-130		
LCS (B8J0394-BS1)										
					Prepared & Analyzed: 10/09/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	0.2		0.05	mg/kg				70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	0.08		0.05	mg/kg				70-130		
Benzene	46.0			ug/l	50.0		92.0	70-130		
Ethylbenzene	52.2			ug/l	50.0		104	70-130		
Methyl t-butyl ether (MTBE)	51.2			ug/l	50.0		102	70-130		
Naphthalene	43.8			ug/l	50.0		87.5	70-130		
Toluene	49.1			ug/l	50.0		98.3	70-130		
m&p-Xylene	106			ug/l	100		106	70-130		
o-Xylene	49.7			ug/l	50.0		99.5	70-130		
C9-C10 Aromatic Hydrocarbons	ND		0.05	mg/kg				70-130		
<i>Surrogate: 2,5- Dibromotoluene-PID</i>			48.3	ug/l	50.0		96.6	70-130		
<i>Surrogate: 2,5- Dibromotoluene-FID</i>			52.8	ug/l	50.0		106	70-130		

Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0394 - MADEP VPH (Continued)										
LCS Dup (B8J0394-BSD1)					Prepared & Analyzed: 10/09/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	0.2		0.05	mg/kg				70-130	3.58	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	0.09		0.05	mg/kg				70-130	11.6	25
Benzene	47.5			ug/l	50.0		95.0	70-130	3.21	25
Ethylbenzene	54.3			ug/l	50.0		109	70-130	3.85	25
Methyl t-butyl ether (MTBE)	52.7			ug/l	50.0		105	70-130	2.91	25
Naphthalene	45.2			ug/l	50.0		90.5	70-130	3.33	25
Toluene	52.1			ug/l	50.0		104	70-130	5.89	25
m&p-Xylene	110			ug/l	100		110	70-130	4.10	25
o-Xylene	52.4			ug/l	50.0		105	70-130	5.17	25
C9-C10 Aromatic Hydrocarbons	0.05		0.05	mg/kg				70-130	3.32	25
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Surrogate: 2,5- Dibromotoluene-PID			45.3	ug/l	50.0		90.6	70-130		
Surrogate: 2,5- Dibromotoluene-FID			50.3	ug/l	50.0		101	70-130		
<hr/>										
Batch: B8J0432 - MADEP VPH										
Blank (B8J0432-BLK1)					Prepared & Analyzed: 10/10/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
Unadjusted C9-C12 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
Benzene	ND		0.005	mg/kg						
Ethylbenzene	ND		0.005	mg/kg						
Methyl t-butyl ether (MTBE)	ND		0.001	mg/kg						
Naphthalene	ND		0.01	mg/kg						
Toluene	ND		0.005	mg/kg						
m&p-Xylene	ND		0.01	mg/kg						
o-Xylene	ND		0.01	mg/kg						
Total xylenes	ND		0.01	mg/kg						
C5-C8 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
C9-C12 Aliphatic Hydrocarbons	ND		0.05	mg/kg						
C9-C10 Aromatic Hydrocarbons	ND		0.05	mg/kg						
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Surrogate: 2,5- Dibromotoluene-PID			42.9	ug/l	50.0		85.8	70-130		
Surrogate: 2,5- Dibromotoluene-FID			49.7	ug/l	50.0		99.4	70-130		
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Quality Control
(Continued)

Volatile Petroleum Hydrocarbons (MADEP-VPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0432 - MADEP VPH (Continued)										
LCS (B8J0432-BS1)					Prepared & Analyzed: 10/10/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	0.2		0.05	mg/kg				70-130		
Unadjusted C9-C12 Aliphatic Hydrocarbons	0.09		0.05	mg/kg				70-130		
Benzene	46.4			ug/l	50.0		92.8	70-130		
Ethylbenzene	54.5			ug/l	50.0		109	70-130		
Methyl t-butyl ether (MTBE)	54.5			ug/l	50.0		109	70-130		
Naphthalene	43.8			ug/l	50.0		87.5	70-130		
Toluene	51.1			ug/l	50.0		102	70-130		
m&p-Xylene	107			ug/l	100		107	70-130		
o-Xylene	52.6			ug/l	50.0		105	70-130		
C9-C10 Aromatic Hydrocarbons	0.05		0.05	mg/kg				70-130		
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Surrogate: 2,5- Dibromotoluene-PID			46.2	ug/l	50.0		92.4	70-130		
Surrogate: 2,5- Dibromotoluene-FID			49.0	ug/l	50.0		98.0	70-130		
<hr/>										
LCS Dup (B8J0432-BSD1)					Prepared & Analyzed: 10/10/18					
Unadjusted C5-C8 Aliphatic Hydrocarbons	0.2		0.05	mg/kg				70-130	1.68	25
Unadjusted C9-C12 Aliphatic Hydrocarbons	0.09		0.05	mg/kg				70-130	6.69	25
Benzene	47.0			ug/l	50.0		93.9	70-130	1.26	25
Ethylbenzene	55.8			ug/l	50.0		112	70-130	2.29	25
Methyl t-butyl ether (MTBE)	55.6			ug/l	50.0		111	70-130	2.03	25
Naphthalene	45.3			ug/l	50.0		90.5	70-130	3.37	25
Toluene	53.0			ug/l	50.0		106	70-130	3.50	25
m&p-Xylene	110			ug/l	100		110	70-130	1.96	25
o-Xylene	54.1			ug/l	50.0		108	70-130	2.83	25
C9-C10 Aromatic Hydrocarbons	0.05		0.05	mg/kg				70-130	2.39	25
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Surrogate: 2,5- Dibromotoluene-PID			47.9	ug/l	50.0		95.7	70-130		
Surrogate: 2,5- Dibromotoluene-FID			50.8	ug/l	50.0		102	70-130		

Quality Control
(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0277 - EPA 3546										
Blank (B8J0277-BLK1)					Prepared: 10/05/18 Analyzed: 10/09/18					
Unadjusted C11-C22 Aromatic Hydrocarbons	ND		13.3	mg/kg						
Naphthalene	ND		0.33	mg/kg						
2-Methylnaphthalene	ND		0.33	mg/kg						
Phenanthrene	ND		0.33	mg/kg						
Acenaphthene	ND		0.33	mg/kg						
Acenaphthylene	ND		0.33	mg/kg						
Fluorene	ND		0.33	mg/kg						
Anthracene	ND		0.33	mg/kg						
Fluoranthene	ND		0.33	mg/kg						
Pyrene	ND		0.33	mg/kg						
Benzo(a)anthracene	ND		0.33	mg/kg						
Chrysene	ND		0.33	mg/kg						
Benzo(b)fluoranthene	ND		0.33	mg/kg						
Benzo(k)fluoranthene	ND		0.33	mg/kg						
Benzo(a)pyrene	ND		0.33	mg/kg						
Indeno(1,2,3-cd)pyrene	ND		0.33	mg/kg						
Dibenz(a,h)anthracene	ND		0.33	mg/kg						
Benzo(g,h,i)perylene	ND		0.33	mg/kg						
C9-C18 Aliphatic Hydrocarbons	ND		13.3	mg/kg						
C19-C36 Aliphatic Hydrocarbons	ND		13.3	mg/kg						
C11-C22 Aromatic Hydrocarbons	ND		13.3	mg/kg						
Surrogate: Chlorooctadecane			6.11	mg/kg	8.33		73.3	40-140		
Surrogate: o-Terphenyl			5.56	mg/kg	8.33		66.7	40-140		
Surrogate: 2-Fluorobiphenyl			2.67	mg/kg	3.33		80.1	40-140		
Surrogate: 2-Bromonaphthalene			2.34	mg/kg	3.33		70.1	40-140		
LCS (B8J0277-BS1)										
					Prepared: 10/05/18 Analyzed: 10/09/18					
Naphthalene	1.96		0.33	mg/kg	2.67		73.4	40-140		
2-Methylnaphthalene	1.95		0.33	mg/kg	2.67		73.2	40-140		
Phenanthrene	1.62		0.33	mg/kg	2.67		60.7	40-140		
Acenaphthene	2.24		0.33	mg/kg	2.67		83.8	40-140		
Acenaphthylene	1.85		0.33	mg/kg	2.67		69.4	40-140		
Fluorene	1.64		0.33	mg/kg	2.67		61.7	40-140		
Anthracene	1.75		0.33	mg/kg	2.67		65.7	40-140		
Fluoranthene	1.96		0.33	mg/kg	2.67		73.6	40-140		
Pyrene	2.17		0.33	mg/kg	2.67		81.5	40-140		
Benzo(a)anthracene	1.78		0.33	mg/kg	2.67		66.6	40-140		
Chrysene	2.47		0.33	mg/kg	2.67		92.7	40-140		
Benzo(b)fluoranthene	1.69		0.33	mg/kg	2.67		63.5	40-140		
Benzo(k)fluoranthene	2.40		0.33	mg/kg	2.67		90.0	40-140		
Benzo(a)pyrene	2.18		0.33	mg/kg	2.67		81.9	40-140		
Indeno(1,2,3-cd)pyrene	1.56		0.33	mg/kg	2.67		58.6	40-140		
Dibenz(a,h)anthracene	2.46		0.33	mg/kg	2.67		92.1	40-140		
Benzo(g,h,i)perylene	2.04		0.33	mg/kg	2.67		76.6	40-140		
Nonane	1.19		0.33	mg/kg	2.67		44.7	30-140		
Decane	1.67		0.33	mg/kg	2.67		62.5	40-140		
Dodecane	1.85		0.33	mg/kg	2.67		69.4	40-140		
Tetradecane	1.96		0.33	mg/kg	2.67		73.4	40-140		
Hexadecane	1.95		0.33	mg/kg	2.67		73.1	40-140		
Octadecane	2.22		0.33	mg/kg	2.67		83.3	40-140		
Nonadecane	2.21		0.33	mg/kg	2.67		82.8	40-140		
Eicosane	2.21		0.33	mg/kg	2.67		83.1	40-140		
Docosane	2.12		0.33	mg/kg	2.67		79.6	40-140		

Quality Control

(Continued)

Extractable Petroleum Hydrocarbons (MADEP-EPH) (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0277 - EPA 3546 (Continued)										
LCS (B8J0277-BS1)										
					Prepared: 10/05/18 Analyzed: 10/09/18					
Tetracosane	2.14		0.33	mg/kg	2.67		80.2	40-140		
Hexacosane	2.15		0.33	mg/kg	2.67		80.7	40-140		
Octacosane	2.15		0.33	mg/kg	2.67		80.7	40-140		
Triacotane	2.15		0.33	mg/kg	2.67		80.6	40-140		
Hexatriacontane	2.18		0.33	mg/kg	2.67		81.9	40-140		
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Surrogate: Chlorooctadecane			6.43	mg/kg	8.33		77.1	40-140		
Surrogate: o-Terphenyl			6.14	mg/kg	8.33		73.7	40-140		
Surrogate: 2-Fluorobiphenyl			3.00	mg/kg	3.33		89.9	40-140		
Surrogate: 2-Bromonaphthalene			2.29	mg/kg	3.33		68.6	40-140		
<hr/>										
LCS Dup (B8J0277-BSD1)										
					Prepared: 10/05/18 Analyzed: 10/09/18					
Naphthalene	2.03		0.33	mg/kg	2.67		76.2	40-140	3.74	25
2-Methylnaphthalene	2.05		0.33	mg/kg	2.67		76.9	40-140	5.06	25
Phenanthrene	1.69		0.33	mg/kg	2.67		63.4	40-140	4.39	25
Acenaphthene	2.31		0.33	mg/kg	2.67		86.5	40-140	3.17	25
Acenaphthylene	1.93		0.33	mg/kg	2.67		72.4	40-140	4.26	25
Fluorene	1.77		0.33	mg/kg	2.67		66.2	40-140	7.08	25
Anthracene	1.84		0.33	mg/kg	2.67		69.0	40-140	4.97	25
Fluoranthene	2.05		0.33	mg/kg	2.67		76.9	40-140	4.38	25
Pyrene	2.26		0.33	mg/kg	2.67		84.7	40-140	3.88	25
Benzo(a)anthracene	1.86		0.33	mg/kg	2.67		69.7	40-140	4.51	25
Chrysene	2.55		0.33	mg/kg	2.67		95.7	40-140	3.24	25
Benzo(b)fluoranthene	1.68		0.33	mg/kg	2.67		63.1	40-140	0.632	25
Benzo(k)fluoranthene	2.30		0.33	mg/kg	2.67		86.4	40-140	4.05	25
Benzo(a)pyrene	2.24		0.33	mg/kg	2.67		84.2	40-140	2.74	25
Indeno(1,2,3-cd)pyrene	1.43		0.33	mg/kg	2.67		53.6	40-140	8.95	25
Dibenz(a,h)anthracene	2.71		0.33	mg/kg	2.67		102	40-140	9.78	25
Benzo(g,h,i)perylene	2.13		0.33	mg/kg	2.67		79.7	40-140	3.90	25
Nonane	1.23		0.33	mg/kg	2.67		46.1	30-140	3.03	25
Decane	1.71		0.33	mg/kg	2.67		63.9	40-140	2.29	25
Dodecane	1.95		0.33	mg/kg	2.67		73.3	40-140	5.36	25
Tetradecane	2.03		0.33	mg/kg	2.67		76.0	40-140	3.58	25
Hexadecane	2.06		0.33	mg/kg	2.67		77.4	40-140	5.72	25
Octadecane	2.30		0.33	mg/kg	2.67		86.2	40-140	3.42	25
Nonadecane	2.30		0.33	mg/kg	2.67		86.1	40-140	3.94	25
Eicosane	2.39		0.33	mg/kg	2.67		89.6	40-140	7.56	25
Docosane	2.34		0.33	mg/kg	2.67		87.9	40-140	9.89	25
Tetracosane	2.25		0.33	mg/kg	2.67		84.3	40-140	4.98	25
Hexacosane	2.27		0.33	mg/kg	2.67		85.0	40-140	5.19	25
Octacosane	2.27		0.33	mg/kg	2.67		85.3	40-140	5.45	25
Triacotane	2.28		0.33	mg/kg	2.67		85.4	40-140	5.78	25
Hexatriacontane	2.22		0.33	mg/kg	2.67		83.1	40-140	1.52	25
<hr/>										
Surrogate: Chlorooctadecane			6.75	mg/kg	8.33		81.0	40-140		
Surrogate: o-Terphenyl			6.37	mg/kg	8.33		76.5	40-140		
Surrogate: 2-Fluorobiphenyl			3.04	mg/kg	3.33		91.1	40-140		
Surrogate: 2-Bromonaphthalene			2.47	mg/kg	3.33		74.2	40-140		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.



59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

MassDEP Analytical Protocol Certification Form

Laboratory Name: New England Testing Laboratory, Inc.

Project #:

Project Location: Medford, MA

RTN:

This Form provides certifications for the following data set: list Laboratory Sample ID Number(s):
8J03019

Matrices: ☐ Groundwater/Surface Water ☒ Soil/Sediment ☐ Drinking Water ☐ Air ☐ Other:

CAM Protocol (check all that apply below):

8260 VOC CAM II A <input type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	MassDEP VPH (GC/PID/FID) CAM IV A <input checked="" type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	MassDEP VPH (GC/MS) CAM IV C <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	MassDEP APH CAM IX A <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	MassDEP EPH CAM IV B <input checked="" type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>

Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status

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

Responses to Questions G, H and I below are required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
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Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No ¹

¹ All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.

Signature: Richard Warila

Position: Laboratory Director

Printed Name: Richard Warila

Date: 10/10/2018



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8J09078
Client Project: 236 Salem St, Medford, MA

Report Date: 17-October-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 10/09/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8J09078. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8J09078-01	Influent	Water	10/09/2018	10/09/2018
8J09078-02	Effluent	Water	10/09/2018	10/09/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8J09078-02)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel
 Oil & Grease, SGT
 pH
 Selenium
 Silver
 Total Residual Chlorine
 Total Suspended Solids
 Trivalent Chromium
 Volatile Organic Compounds
 Volatile Organic Compounds
 Zinc

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7
 EPA 1664A
 SM4500-H-B
 EPA 200.7
 EPA 200.7
 SM4500-CI-G
 SM2540-D
 Calculation
 EPA 524.2
 EPA 624.1
 EPA 200.7

Influent (Lab Number: 8J09078-01)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7

Request for Analysis (continued)

Influent (Lab Number: 8J09078-01) (continued)

Analysis

Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8J09078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0550	mg/L	10/10/18	10/11/18

Results: Calculation

Sample: Effluent
Lab Number: 8J09078-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	10/10/18	10/11/18

Results: General Chemistry**Sample: Influent****Lab Number: 8J09078-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.2		0.1	mg/L	10/15/18	10/15/18
Chloride	481		10	mg/L	10/10/18	10/10/18
Cyanide	0.02		0.01	mg/L	10/16/18	10/16/18
Hexavalent chromium	ND		0.05	mg/L	10/09/18 16:45	10/09/18 16:45
pH	6.6		0.1	SU	10/09/18 18:30	10/09/18 18:30
Oil & Grease SGT	12		2	mg/L	10/10/18	10/10/18
Total Residual Chlorine	ND		0.01	mg/L	10/09/18 18:15	10/09/18 18:15
Total Suspended Solids	10		2	mg/L	10/10/18	10/10/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8J09078-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.1	mg/L	10/15/18	10/15/18
Chloride	500		50	mg/L	10/10/18	10/10/18
Cyanide	ND		0.01	mg/L	10/16/18	10/16/18
Hexavalent chromium	ND		0.01	mg/L	10/09/18 16:45	10/09/18 16:45
pH	6.6		0.1	SU	10/09/18 18:30	10/09/18 18:30
Oil & Grease SGT	ND		2	mg/L	10/10/18	10/10/18
Total Residual Chlorine	ND		0.01	mg/L	10/09/18 18:15	10/09/18 18:15
Total Suspended Solids	ND		2	mg/L	10/10/18	10/10/18

Results: Total Metals

Sample: Influent

Lab Number: 8J09078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	163		0.125	mg/L	10/10/18	10/11/18
Antimony	ND		0.005	mg/L	10/10/18	10/11/18
Arsenic	0.043		0.010	mg/L	10/10/18	10/11/18
Cadmium	ND		0.004	mg/L	10/10/18	10/11/18
Calcium	58.3		0.05	mg/L	10/10/18	10/11/18
Chromium	ND		0.005	mg/L	10/10/18	10/11/18
Copper	ND		0.020	mg/L	10/10/18	10/11/18
Iron	0.530		0.050	mg/L	10/10/18	10/11/18
Lead	0.027		0.005	mg/L	10/10/18	10/11/18
Magnesium	4.10		0.05	mg/L	10/10/18	10/11/18
Mercury	ND		0.0002	mg/L	10/10/18	10/10/18
Nickel	ND		0.005	mg/L	10/10/18	10/11/18
Selenium	ND		0.010	mg/L	10/10/18	10/11/18
Silver	ND		0.005	mg/L	10/10/18	10/11/18
Zinc	ND		0.020	mg/L	10/10/18	10/11/18

Results: Total Metals

Sample: Effluent

Lab Number: 8J09078-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	142		0.125	mg/L	10/10/18	10/11/18
Antimony	ND		0.005	mg/L	10/10/18	10/11/18
Arsenic	0.035		0.010	mg/L	10/10/18	10/11/18
Cadmium	ND		0.004	mg/L	10/10/18	10/11/18
Calcium	50.2		0.05	mg/L	10/10/18	10/11/18
Chromium	ND		0.005	mg/L	10/10/18	10/11/18
Copper	ND		0.020	mg/L	10/10/18	10/11/18
Iron	ND		0.050	mg/L	10/10/18	10/11/18
Lead	0.019		0.005	mg/L	10/10/18	10/11/18
Magnesium	3.97		0.05	mg/L	10/10/18	10/11/18
Mercury	ND		0.0002	mg/L	10/10/18	10/10/18
Nickel	ND		0.005	mg/L	10/10/18	10/11/18
Selenium	ND		0.010	mg/L	10/10/18	10/11/18
Silver	ND		0.005	mg/L	10/10/18	10/11/18
Zinc	ND		0.020	mg/L	10/10/18	10/11/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8J09078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	10/14/18	10/14/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>89.5%</i>		<i>70-130</i>		10/14/18	10/14/18
<i>1,2-Dichlorobenzene-d4</i>	<i>91.9%</i>		<i>70-130</i>		10/14/18	10/14/18
Benzene	ND		1	ug/l	10/12/18	10/13/18
Toluene	15		1	ug/l	10/12/18	10/13/18
Acetone	ND		5	ug/l	10/12/18	10/13/18
tert-Butyl alcohol	ND		5	ug/l	10/12/18	10/13/18
Total xylenes	61		1	ug/l	10/12/18	10/13/18
o-Xylene	18		1	ug/l	10/12/18	10/13/18
m&p-Xylene	43		2	ug/l	10/12/18	10/13/18
tert-Amyl methyl ether	ND		1	ug/l	10/12/18	10/13/18
Ethylbenzene	10		1	ug/l	10/12/18	10/13/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>93.0%</i>		<i>70-130</i>		10/12/18	10/13/18
<i>1,2-Dichloroethane-d4</i>	<i>106%</i>		<i>70-130</i>		10/12/18	10/13/18
<i>Toluene-d8</i>	<i>98.4%</i>		<i>70-130</i>		10/12/18	10/13/18

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 8J09078-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	10/13/18	10/14/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>103%</i>		<i>70-130</i>		10/13/18	10/14/18
<i>1,2-Dichlorobenzene-d4</i>	<i>112%</i>		<i>70-130</i>		10/13/18	10/14/18
Benzene	ND		1	ug/l	10/12/18	10/13/18
Toluene	ND		1	ug/l	10/12/18	10/13/18
Acetone	ND		5	ug/l	10/12/18	10/13/18
tert-Butyl alcohol	ND		5	ug/l	10/12/18	10/13/18
Total xylenes	ND		1	ug/l	10/12/18	10/13/18
o-Xylene	ND		1	ug/l	10/12/18	10/13/18
m&p-Xylene	ND		2	ug/l	10/12/18	10/13/18
tert-Amyl methyl ether	ND		1	ug/l	10/12/18	10/13/18
Ethylbenzene	ND		1	ug/l	10/12/18	10/13/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>90.7%</i>		<i>70-130</i>		10/12/18	10/13/18
<i>1,2-Dichloroethane-d4</i>	<i>105%</i>		<i>70-130</i>		10/12/18	10/13/18
<i>Toluene-d8</i>	<i>98.6%</i>		<i>70-130</i>		10/12/18	10/13/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8J09078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	10/15/18	10/15/18

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 8J09078-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	10/15/18	10/15/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8J09078-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		0.5	ug/l	10/11/18	10/16/18
Acenaphthene	ND		0.5	ug/l	10/11/18	10/16/18
Acenaphthylene	ND		0.5	ug/l	10/11/18	10/16/18
Anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(a)anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(a)pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(b)fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(k)fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Chrysene	ND		0.5	ug/l	10/11/18	10/16/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Fluorene	ND		0.5	ug/l	10/11/18	10/16/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Naphthalene	2		0.5	ug/l	10/11/18	10/16/18
Phenanthrene	ND		0.5	ug/l	10/11/18	10/16/18
Pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	86.5%		15-130		10/11/18	10/16/18
<i>p-Terphenyl-d14</i>	92.7%		50-130		10/11/18	10/16/18
<i>2-Fluorobiphenyl</i>	86.1%		35-130		10/11/18	10/16/18
<i>Phenol-d6</i>	19.2%		10-83		10/11/18	10/16/18
<i>2,4,6-Tribromophenol</i>	98.9%		44-120		10/11/18	10/16/18
<i>2-Fluorophenol</i>	35.0%		10-81		10/11/18	10/16/18

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 8J09078-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		0.5	ug/l	10/11/18	10/16/18
Acenaphthene	ND		0.5	ug/l	10/11/18	10/16/18
Acenaphthylene	ND		0.5	ug/l	10/11/18	10/16/18
Anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(a)anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(a)pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(b)fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	10/11/18	10/16/18
Benzo(k)fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Chrysene	ND		0.5	ug/l	10/11/18	10/16/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	10/11/18	10/16/18
Fluoranthene	ND		0.5	ug/l	10/11/18	10/16/18
Fluorene	ND		0.5	ug/l	10/11/18	10/16/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Naphthalene	ND		0.5	ug/l	10/11/18	10/16/18
Phenanthrene	ND		0.5	ug/l	10/11/18	10/16/18
Pyrene	ND		0.5	ug/l	10/11/18	10/16/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	82.7%		15-130		10/11/18	10/16/18
<i>p-Terphenyl-d14</i>	94.5%		50-130		10/11/18	10/16/18
<i>2-Fluorobiphenyl</i>	81.7%		35-130		10/11/18	10/16/18
<i>Phenol-d6</i>	18.0%		10-83		10/11/18	10/16/18
<i>2,4,6-Tribromophenol</i>	83.2%		44-120		10/11/18	10/16/18
<i>2-Fluorophenol</i>	29.7%		10-81		10/11/18	10/16/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0389 - Oil & Grease										
Blank (B8J0389-BLK1)					Prepared & Analyzed: 10/10/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8J0389-BS1)					Prepared & Analyzed: 10/10/18					
Oil & Grease SGT	16		2	mg/L	20.0		81.5	64-132		
Batch: B8J0405 - pH										
LCS (B8J0405-BS1)					Prepared & Analyzed: 10/09/18					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B8J0405-BS2)					Prepared & Analyzed: 10/09/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8J0405-DUP1)					Prepared & Analyzed: 10/09/18					
pH	6.5		0.1	SU		6.5			0.154	20
Batch: B8J0440 - Chloride										
Blank (B8J0440-BLK1)					Prepared & Analyzed: 10/10/18					
Chloride	ND		1	mg/L						
LCS (B8J0440-BS1)					Prepared & Analyzed: 10/10/18					
Chloride	56		1	mg/L	60.6		91.9	90-110		
Duplicate (B8J0440-DUP1)					Prepared & Analyzed: 10/10/18					
Chloride	500		10	mg/L		481			3.88	20

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0440 - Chloride (Continued)										
Matrix Spike (B8J0440-MS1)					Source: 8J09078-01					
Chloride	547		10	mg/L	60.6	481	110	80-120		
Batch: B8J0474 - TSS										
Blank (B8J0474-BLK1)					Prepared & Analyzed: 10/10/18					
Total Suspended Solids	ND		2	mg/L						
LCS (B8J0474-BS1)					Prepared & Analyzed: 10/10/18					
Total Suspended Solids	982		10	mg/L	1000		98.2	90-110		
Duplicate (B8J0474-DUP1)					Source: 8J09002-01					
Total Suspended Solids	265		5	mg/L		246			7.44	20
Batch: B8J0531 - Hexavalent Chrome										
Blank (B8J0531-BLK1)					Prepared & Analyzed: 10/09/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8J0531-BLK2)					Prepared & Analyzed: 10/09/18					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B8J0531-BS1)					Prepared & Analyzed: 10/09/18					
Hexavalent chromium	0.49		0.01	mg/L	0.500		98.2	90-110		
LCS (B8J0531-BS2)					Prepared & Analyzed: 10/09/18					
Hexavalent chromium	0.10		0.01	mg/L	0.100		103	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0531 - Hexavalent Chrome (Continued)										
LCS (B8J0531-BS3)										
Hexavalent chromium	0.53		0.01	mg/L	0.500		105	90-110		
Duplicate (B8J0531-DUP1)										
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8J0531-MS1)										
Hexavalent chromium	0.48		0.01	mg/L	0.500	ND	96.2	80-120		
Batch: B8J0596 - Residual chlorine										
Blank (B8J0596-BLK1)										
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8J0596-BLK2)										
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8J0596-BS1)										
Total Residual Chlorine	0.47		0.01	mg/L	0.500		93.8	90-110		
LCS (B8J0596-BS2)										
Total Residual Chlorine	0.47		0.01	mg/L	0.500		93.8	90-110		
Duplicate (B8J0596-DUP1)										
Total Residual Chlorine	ND		0.01	mg/L		ND				20
Matrix Spike (B8J0596-MS1)										
Total Residual Chlorine	0.48		0.01	mg/L	0.500	ND	96.0	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0681 - Ammonia										
Blank (B8J0681-BLK1)					Prepared & Analyzed: 10/15/18					
Ammonia	ND		0.1	mg/L						
Blank (B8J0681-BLK2)					Prepared & Analyzed: 10/15/18					
Ammonia	ND		0.1	mg/L						
LCS (B8J0681-BS1)					Prepared & Analyzed: 10/15/18					
Ammonia	1.0		0.1	mg/L	1.00		102	90-110		
LCS (B8J0681-BS2)					Prepared & Analyzed: 10/15/18					
Ammonia	1.0		0.1	mg/L	1.00		104	90-110		
Duplicate (B8J0681-DUP1)					Prepared & Analyzed: 10/15/18					
Ammonia	0.4		0.1	mg/L		0.5			6.98	20
Matrix Spike (B8J0681-MS1)					Prepared & Analyzed: 10/15/18					
Ammonia	1.3		0.1	mg/L	1.00	0.5	87.6	80-120		
Batch: B8J0708 - Cyanide										
Blank (B8J0708-BLK1)					Prepared & Analyzed: 10/16/18					
Cyanide	ND		0.01	mg/L						
Blank (B8J0708-BLK2)					Prepared & Analyzed: 10/16/18					
Cyanide	ND		0.01	mg/L						
LCS (B8J0708-BS1)					Prepared & Analyzed: 10/16/18					
Cyanide	0.09		0.01	mg/L	0.100		93.0	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0708 - Cyanide (Continued)										
LCS (B8J0708-BS2)					Prepared & Analyzed: 10/16/18					
Cyanide	0.11		0.01	mg/L	0.100		109	90-110		
LCS (B8J0708-BS3)					Prepared & Analyzed: 10/16/18					
Cyanide	0.10		0.01	mg/L	0.100		102	90-110		
Duplicate (B8J0708-DUP1)					Prepared & Analyzed: 10/16/18					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8J0708-MS1)					Prepared & Analyzed: 10/16/18					
Cyanide	0.12		0.01	mg/L	0.100	ND	117	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0386 - Hot plate acid digestion waters										
Blank (B8J0386-BLK1)					Prepared: 10/10/18 Analyzed: 10/11/18					
Nickel	ND		0.005	mg/L						
Calcium	ND		0.05	mg/L						
Magnesium	ND		0.05	mg/L						
Arsenic	ND		0.010	mg/L						
Antimony	ND		0.005	mg/L						
Zinc	ND		0.020	mg/L						
Copper	ND		0.020	mg/L						
Silver	ND		0.005	mg/L						
Iron	ND		0.050	mg/L						
Chromium	ND		0.005	mg/L						
Lead	ND		0.005	mg/L						
Cadmium	ND		0.004	mg/L						
Selenium	ND		0.010	mg/L						
LCS (B8J0386-BS1)					Prepared: 10/10/18 Analyzed: 10/11/18					
Antimony	1.01		0.005	mg/L	1.00		101	85-115		
Silver	0.399		0.005	mg/L	0.400		99.8	85-115		
Selenium	0.185		0.010	mg/L	0.200		92.5	85-115		
Arsenic	0.207		0.010	mg/L	0.200		103	85-115		
Iron	11.1		0.050	mg/L	10.0		111	85-115		
Nickel	0.991		0.005	mg/L	1.00		99.1	85-112		
Lead	1.00		0.005	mg/L	1.00		100	85-115		
Copper	0.996		0.020	mg/L	1.00		99.6	85-115		
Cadmium	0.970		0.004	mg/L	1.00		97.0	85-114		
Zinc	0.950		0.020	mg/L	1.00		95.0	85-115		
Calcium	10.4		0.05	mg/L	10.0		104	85-115		
Magnesium	9.97		0.05	mg/L	10.0		99.7	85-115		
Chromium	1.01		0.005	mg/L	1.00		101	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0386 - Hot plate acid digestion waters (Continued)										
LCS (B8J0386-BS2)					Prepared: 10/10/18 Analyzed: 10/16/18					
Copper	ND		0.005	mg/L				85-115		
LCS Dup (B8J0386-BSD2)					Prepared: 10/10/18 Analyzed: 10/16/18					
Copper	ND		0.005	mg/L				85-115		200
Batch: B8J0438 - Hot plate acid digestion waters										
Blank (B8J0438-BLK1)					Prepared & Analyzed: 10/10/18					
Mercury	ND		0.0002	mg/L						
LCS (B8J0438-BS1)					Prepared & Analyzed: 10/10/18					
Mercury	0.990			ug/l	1.00		99.0	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0615 - Purge-Trap										
Blank (B8J0615-BLK1)					Prepared: 10/12/18 Analyzed: 10/13/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			45.2	ug/l	50.0		90.3	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			50.2	ug/l	50.0		100	70-130		
<i>Surrogate: Toluene-d8</i>			49.6	ug/l	50.0		99.2	70-130		
LCS (B8J0615-BS1)					Prepared & Analyzed: 10/12/18					
Benzene	22			ug/l	20.0		109	65-135		
Toluene	22			ug/l	20.0		109	70-130		
Acetone	21			ug/l	20.0		105	70-130		
tert-Butyl alcohol	21			ug/l	20.0		105	70-130		
Total xylenes	65		1	ug/l				70-130		
o-Xylene	22			ug/l	20.0		110	70-130		
m&p-Xylene	44			ug/l	40.0		109	70-130		
tert-Amyl methyl ether	20			ug/l	20.0		102	70-130		
Ethylbenzene	21			ug/l	20.0		104	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			46.5	ug/l	50.0		93.0	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			52.2	ug/l	50.0		104	70-130		
<i>Surrogate: Toluene-d8</i>			50.4	ug/l	50.0		101	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0661 - EPA 3580A										
Blank (B8J0661-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 10/15/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0469 - Sep-Funnel-extraction										
Blank (B8J0469-BLK1)					Prepared: 10/11/18 Analyzed: 10/15/18					
Phenol	ND		0.5	ug/l						
Acenaphthene	ND		0.5	ug/l						
Acenaphthylene	ND		0.5	ug/l						
Anthracene	ND		0.5	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		0.5	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		0.5	ug/l						
Fluorene	ND		0.5	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			42.2	ug/l	50.0		84.4	15-130		
Surrogate: p-Terphenyl-d14			43.6	ug/l	50.0		87.3	50-130		
Surrogate: 2-Fluorobiphenyl			38.0	ug/l	50.0		76.0	35-130		
Surrogate: Phenol-d6			9.55	ug/l	50.0		19.1	10-83		
Surrogate: 2,4,6-Tribromophenol			43.2	ug/l	50.0		86.4	44-120		
Surrogate: 2-Fluorophenol			16.6	ug/l	50.0		33.2	10-81		
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LCS (B8J0469-BS1)					Prepared: 10/11/18 Analyzed: 10/15/18					
Phenol	10		2	ug/l	50.0		19.6	17-120		
Acenaphthene	50		2	ug/l	50.0		100	60-132		
Acenaphthylene	49		2	ug/l	50.0		97.2	54-126		
Anthracene	49		2	ug/l	50.0		97.1	43-120		
Benzo(a)anthracene	47		2	ug/l	50.0		94.8	42-133		
Benzo(a)pyrene	50		2	ug/l	50.0		100	32-148		
Benzo(b)fluoranthene	51		2	ug/l	50.0		103	42-140		
Benzo(g,h,i)perylene	48		2	ug/l	50.0		96.9	5-195		
Benzo(k)fluoranthene	51		2	ug/l	50.0		103	25-146		
Chrysene	47		2	ug/l	50.0		94.7	44-140		
Dibenz(a,h)anthracene	46		2	ug/l	50.0		92.3	5-200		
Fluoranthene	50		2	ug/l	50.0		100	43-121		
Fluorene	56		2	ug/l	50.0		111	70-120		
Indeno(1,2,3-cd)pyrene	47		2	ug/l	50.0		93.4	5-151		
Naphthalene	49		2	ug/l	50.0		97.3	36-120		
Phenanthrene	49		2	ug/l	50.0		98.2	65-120		
Pyrene	46		2	ug/l	50.0		92.9	70-120		
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Surrogate: Nitrobenzene-d5			51.6	ug/l	50.0		103	15-130		
Surrogate: p-Terphenyl-d14			48.6	ug/l	50.0		97.2	50-130		
Surrogate: 2-Fluorobiphenyl			48.0	ug/l	50.0		96.0	35-130		
Surrogate: Phenol-d6			10.5	ug/l	50.0		21.0	10-83		
Surrogate: 2,4,6-Tribromophenol			55.5	ug/l	50.0		111	44-120		
Surrogate: 2-Fluorophenol			18.6	ug/l	50.0		37.3	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

Medford 236 Salem St NPDES

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	1 L Amb. Nonpres
Ethanol	400	1666, 1671, D3695	1 L Amb. Nonpres
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL

Acetone 50 EPA 624 40 ml Vial HCL
 Phenol 2.5 EPA 625 1 L Amb Non-preserve



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8J16017
Client Project: 236 Salem St, Medford, MA

Report Date: 23-October-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 10/16/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8J16017. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8J16017-01	Influent	Water	10/16/2018	10/16/2018
8J16017-02	Effluent	Water	10/16/2018	10/16/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8J16017-02)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel
 Oil & Grease, SGT
 pH
 Selenium
 Silver
 Total Residual Chlorine
 Total Suspended Solids
 Trivalent Chromium
 Volatile Organic Compounds
 Volatile Organic Compounds
 Zinc

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7
 EPA 1664A
 SM4500-H-B
 EPA 200.7
 EPA 200.7
 SM4500-CI-G
 SM2540-D
 Calculation
 EPA 524.2
 EPA 624.1
 EPA 200.7

Influent (Lab Number: 8J16017-01)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7

Request for Analysis (continued)

Influent (Lab Number: 8J16017-01) (continued)

Analysis

Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8J16017-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	10/17/18 10:22	10/18/18 12:39

Results: Calculation

Sample: Effluent
Lab Number: 8J16017-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	10/17/18 10:22	10/18/18 12:55

Results: General Chemistry**Sample: Influent****Lab Number: 8J16017-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.1	mg/L	10/19/18	10/19/18
Chloride	500		10	mg/L	10/17/18	10/17/18
Cyanide	ND		0.01	mg/L	10/19/18	10/19/18
Hexavalent chromium	ND		0.01	mg/L	10/16/18 15:10	10/16/18 15:10
pH	6.8		0.1	SU	10/16/18 18:30	10/16/18 18:30
Oil & Grease SGT	ND		2	mg/L	10/17/18	10/18/18
Total Residual Chlorine	0.02		0.01	mg/L	10/16/18 18:00	10/16/18 18:00
Total Suspended Solids	4		2	mg/L	10/17/18	10/17/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8J16017-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.1	mg/L	10/19/18	10/19/18
Chloride	392		50	mg/L	10/17/18	10/17/18
Cyanide	ND		0.01	mg/L	10/19/18	10/19/18
Hexavalent chromium	ND		0.01	mg/L	10/16/18 15:10	10/16/18 15:10
pH	6.9		0.1	SU	10/16/18 18:30	10/16/18 18:30
Oil & Grease SGT	ND		2	mg/L	10/17/18	10/18/18
Total Residual Chlorine	ND		0.01	mg/L	10/16/18 18:00	10/16/18 18:00
Total Suspended Solids	ND		2	mg/L	10/17/18	10/17/18

Results: Total Metals

Sample: Influent

Lab Number: 8J16017-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	591		0.125	mg/L	10/17/18	10/18/18
Antimony	0.014		0.005	mg/L	10/17/18	10/18/18
Arsenic	ND		0.010	mg/L	10/17/18	10/18/18
Cadmium	ND		0.004	mg/L	10/17/18	10/18/18
Calcium	199		0.05	mg/L	10/17/18	10/18/18
Chromium	0.010		0.005	mg/L	10/17/18	10/18/18
Copper	ND		0.020	mg/L	10/17/18	10/18/18
Iron	2.59		0.050	mg/L	10/17/18	10/18/18
Lead	ND		0.005	mg/L	10/17/18	10/18/18
Magnesium	22.6		0.05	mg/L	10/17/18	10/18/18
Mercury	ND		0.0002	mg/L	10/18/18	10/18/18
Nickel	0.008		0.005	mg/L	10/17/18	10/18/18
Selenium	ND		0.010	mg/L	10/17/18	10/18/18
Silver	0.005		0.005	mg/L	10/17/18	10/18/18
Zinc	0.037		0.020	mg/L	10/17/18	10/18/18

Results: Total Metals

Sample: Effluent

Lab Number: 8J16017-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	575		0.125	mg/L	10/17/18	10/18/18
Antimony	0.017		0.005	mg/L	10/17/18	10/18/18
Arsenic	ND		0.010	mg/L	10/17/18	10/18/18
Cadmium	ND		0.004	mg/L	10/17/18	10/18/18
Calcium	195		0.05	mg/L	10/17/18	10/18/18
Chromium	0.012		0.005	mg/L	10/17/18	10/18/18
Copper	ND		0.020	mg/L	10/17/18	10/18/18
Iron	0.167		0.050	mg/L	10/17/18	10/18/18
Lead	ND		0.005	mg/L	10/17/18	10/18/18
Magnesium	21.2		0.05	mg/L	10/17/18	10/18/18
Mercury	ND		0.0002	mg/L	10/18/18	10/18/18
Nickel	0.011		0.005	mg/L	10/17/18	10/18/18
Selenium	ND		0.010	mg/L	10/17/18	10/18/18
Silver	0.007		0.005	mg/L	10/17/18	10/18/18
Zinc	0.056		0.020	mg/L	10/17/18	10/18/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8J16017-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	10/17/18	10/17/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>108%</i>		<i>70-130</i>		10/17/18	10/17/18
<i>1,2-Dichlorobenzene-d4</i>	<i>109%</i>		<i>70-130</i>		10/17/18	10/17/18
Benzene	ND		1	ug/l	10/22/18	10/22/18
Toluene	3		1	ug/l	10/22/18	10/22/18
Acetone	ND		5	ug/l	10/22/18	10/22/18
tert-Butyl alcohol	ND		5	ug/l	10/22/18	10/22/18
Total xylenes	30		1	ug/l	10/22/18	10/22/18
o-Xylene	7		1	ug/l	10/22/18	10/22/18
m&p-Xylene	24		2	ug/l	10/22/18	10/22/18
tert-Amyl methyl ether	ND		1	ug/l	10/22/18	10/22/18
Ethylbenzene	3		1	ug/l	10/22/18	10/22/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>101%</i>		<i>70-130</i>		10/22/18	10/22/18
<i>1,2-Dichloroethane-d4</i>	<i>107%</i>		<i>70-130</i>		10/22/18	10/22/18
<i>Toluene-d8</i>	<i>100%</i>		<i>70-130</i>		10/22/18	10/22/18

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 8J16017-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	10/17/18	10/17/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>99.9%</i>		<i>70-130</i>		10/17/18	10/17/18
<i>1,2-Dichlorobenzene-d4</i>	<i>106%</i>		<i>70-130</i>		10/17/18	10/17/18
Benzene	ND		1	ug/l	10/18/18	10/18/18
Toluene	ND		1	ug/l	10/18/18	10/18/18
Acetone	ND		5	ug/l	10/18/18	10/18/18
tert-Butyl alcohol	ND		5	ug/l	10/18/18	10/18/18
Total xylenes	ND		1	ug/l	10/18/18	10/18/18
o-Xylene	ND		1	ug/l	10/18/18	10/18/18
m&p-Xylene	ND		2	ug/l	10/18/18	10/18/18
tert-Amyl methyl ether	ND		1	ug/l	10/18/18	10/18/18
Ethylbenzene	ND		1	ug/l	10/18/18	10/18/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>77.6%</i>		<i>70-130</i>		10/18/18	10/18/18
<i>1,2-Dichloroethane-d4</i>	<i>75.1%</i>		<i>70-130</i>		10/18/18	10/18/18
<i>Toluene-d8</i>	<i>96.1%</i>		<i>70-130</i>		10/18/18	10/18/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8J16017-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	10/23/18	10/23/18

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 8J16017-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	10/23/18	10/23/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8J16017-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	10/17/18	10/18/18
Acenaphthene	ND		0.5	ug/l	10/17/18	10/18/18
Acenaphthylene	ND		0.5	ug/l	10/17/18	10/18/18
Anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(a)anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(a)pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(b)fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(k)fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Chrysene	ND		0.5	ug/l	10/17/18	10/18/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Fluorene	ND		0.5	ug/l	10/17/18	10/18/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Naphthalene	ND		0.5	ug/l	10/17/18	10/18/18
Phenanthrene	ND		0.5	ug/l	10/17/18	10/18/18
Pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	80.7%		15-130		10/17/18	10/18/18
<i>p-Terphenyl-d14</i>	91.0%		50-130		10/17/18	10/18/18
<i>2-Fluorobiphenyl</i>	83.2%		35-130		10/17/18	10/18/18
<i>Phenol-d6</i>	19.8%		10-83		10/17/18	10/18/18
<i>2,4,6-Tribromophenol</i>	90.8%		44-120		10/17/18	10/18/18
<i>2-Fluorophenol</i>	36.2%		10-81		10/17/18	10/18/18

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 8J16017-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	10/17/18	10/18/18
Acenaphthene	ND		0.5	ug/l	10/17/18	10/18/18
Acenaphthylene	ND		0.5	ug/l	10/17/18	10/18/18
Anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(a)anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(a)pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(b)fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	10/17/18	10/18/18
Benzo(k)fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Chrysene	ND		0.5	ug/l	10/17/18	10/18/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	10/17/18	10/18/18
Fluoranthene	ND		0.5	ug/l	10/17/18	10/18/18
Fluorene	ND		0.5	ug/l	10/17/18	10/18/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Naphthalene	ND		0.5	ug/l	10/17/18	10/18/18
Phenanthrene	ND		0.5	ug/l	10/17/18	10/18/18
Pyrene	ND		0.5	ug/l	10/17/18	10/18/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	77.7%		15-130		10/17/18	10/18/18
<i>p-Terphenyl-d14</i>	92.5%		50-130		10/17/18	10/18/18
<i>2-Fluorobiphenyl</i>	79.8%		35-130		10/17/18	10/18/18
<i>Phenol-d6</i>	18.5%		10-83		10/17/18	10/18/18
<i>2,4,6-Tribromophenol</i>	78.1%		44-120		10/17/18	10/18/18
<i>2-Fluorophenol</i>	32.5%		10-81		10/17/18	10/18/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0724 - Oil & Grease										
Blank (B8J0724-BLK1)					Prepared: 10/17/18 Analyzed: 10/18/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8J0724-BS1)					Prepared: 10/17/18 Analyzed: 10/18/18					
Oil & Grease SGT	19		2	mg/L	20.0		95.0	64-132		
Batch: B8J0762 - Chloride										
Blank (B8J0762-BLK1)					Prepared & Analyzed: 10/17/18					
Chloride	ND		1	mg/L						
LCS (B8J0762-BS1)					Prepared & Analyzed: 10/17/18					
Chloride	64		1	mg/L	60.6		105	90-110		
Duplicate (B8J0762-DUP1)					Prepared & Analyzed: 10/17/18					
Chloride	529		10	mg/L		500			5.71	20
Matrix Spike (B8J0762-MS1)					Prepared & Analyzed: 10/17/18					
Chloride	588		10	mg/L	60.6	500	146	80-120		
Batch: B8J0789 - Residual chlorine										
Blank (B8J0789-BLK1)					Prepared & Analyzed: 10/16/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8J0789-BLK2)					Prepared & Analyzed: 10/16/18					
Total Residual Chlorine	ND		0.01	mg/L						

Quality Control (Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: B8J0789 - Residual chlorine (Continued)									
LCS (B8J0789-BS1)					Prepared & Analyzed: 10/16/18				
Total Residual Chlorine	0.50		0.01	mg/L	0.500		99.4	90-110	
LCS (B8J0789-BS2)					Prepared & Analyzed: 10/16/18				
Total Residual Chlorine	0.50		0.01	mg/L	0.500		100	90-110	
Duplicate (B8J0789-DUP1)					Source: 8J16017-01 Prepared & Analyzed: 10/16/18				
Total Residual Chlorine	0.02		0.01	mg/L		0.02		10.0	20
Matrix Spike (B8J0789-MS1)					Source: 8J16017-01 Prepared & Analyzed: 10/16/18				
Total Residual Chlorine	0.46		0.01	mg/L	0.500	0.02	88.0	80-120	
Batch: B8J0802 - TSS									
Blank (B8J0802-BLK1)					Prepared & Analyzed: 10/17/18				
Total Suspended Solids	ND		2	mg/L					
LCS (B8J0802-BS1)					Prepared & Analyzed: 10/17/18				
Total Suspended Solids	936		10	mg/L	1000		93.6	90-110	
Duplicate (B8J0802-DUP1)					Source: 8J15013-01 Prepared & Analyzed: 10/17/18				
Total Suspended Solids	135		3	mg/L		113		17.2	20
Batch: B8J0881 - Cyanide									
Blank (B8J0881-BLK1)					Prepared & Analyzed: 10/19/18				
Cyanide	ND		0.01	mg/L					

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0881 - Cyanide (Continued)										
Blank (B8J0881-BLK2)					Prepared & Analyzed: 10/19/18					
Cyanide	ND		0.01	mg/L						
LCS (B8J0881-BS1)					Prepared & Analyzed: 10/19/18					
Cyanide	0.09		0.01	mg/L	0.100		91.0	90-110		
LCS (B8J0881-BS2)					Prepared & Analyzed: 10/19/18					
Cyanide	0.11		0.01	mg/L	0.100		106	90-110		
LCS (B8J0881-BS3)					Prepared & Analyzed: 10/19/18					
Cyanide	0.10		0.01	mg/L	0.100		98.0	90-110		
Duplicate (B8J0881-DUP1)					Prepared & Analyzed: 10/19/18					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8J0881-MS1)					Prepared & Analyzed: 10/19/18					
Cyanide	0.08		0.01	mg/L	0.100	ND	81.0	80-120		
Batch: B8J0883 - Ammonia										
Blank (B8J0883-BLK1)					Prepared & Analyzed: 10/19/18					
Ammonia	ND		0.1	mg/L						
Blank (B8J0883-BLK2)					Prepared & Analyzed: 10/19/18					
Ammonia	ND		0.1	mg/L						
LCS (B8J0883-BS1)					Prepared & Analyzed: 10/19/18					
Ammonia	1.0		0.1	mg/L	1.00		97.2	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0883 - Ammonia (Continued)										
LCS (B8J0883-BS2)					Prepared & Analyzed: 10/19/18					
Ammonia	1.0		0.1	mg/L	1.00		95.3	90-110		
Duplicate (B8J0883-DUP1)					Source: 8J15009-01		Prepared & Analyzed: 10/19/18			
Ammonia	ND		0.1	mg/L		ND				20
Matrix Spike (B8J0883-MS1)					Source: 8J15009-01		Prepared & Analyzed: 10/19/18			
Ammonia	0.9		0.1	mg/L	1.00	ND	90.4	80-120		
Batch: B8J0887 - pH										
LCS (B8J0887-BS1)					Prepared & Analyzed: 10/16/18					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B8J0887-BS2)					Prepared & Analyzed: 10/16/18					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B8J0887-DUP1)					Source: 8J16008-01		Prepared & Analyzed: 10/16/18			
pH	9.8		0.1	SU		9.8			0.307	20
Batch: B8J0915 - Hexavalent Chrome										
Blank (B8J0915-BLK1)					Prepared & Analyzed: 10/16/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8J0915-BLK2)					Prepared & Analyzed: 10/16/18					
Hexavalent chromium	ND		0.01	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0915 - Hexavalent Chrome (Continued)										
LCS (B8J0915-BS1)										
Hexavalent chromium	0.53		0.01	mg/L	0.500		107	90-110		
LCS (B8J0915-BS2)										
Hexavalent chromium	0.10		0.01	mg/L	0.100		98.0	90-110		
LCS (B8J0915-BS3)										
Hexavalent chromium	0.51		0.01	mg/L	0.500		102	90-110		
Duplicate (B8J0915-DUP1)										
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8J0915-MS1)										
Hexavalent chromium	0.48		0.01	mg/L	0.500	ND	96.4	80-120		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0733 - Hot plate acid digestion waters										
Blank (B8J0733-BLK1)					Prepared: 10/17/18 Analyzed: 10/18/18					
Selenium	ND		0.010	mg/L						
Arsenic	ND		0.010	mg/L						
Cadmium	ND		0.004	mg/L						
Chromium	ND		0.005	mg/L						
Silver	ND		0.005	mg/L						
Zinc	ND		0.020	mg/L						
Copper	ND		0.020	mg/L						
Calcium	ND		0.05	mg/L						
Lead	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
Antimony	ND		0.005	mg/L						
Nickel	ND		0.005	mg/L						
Iron	ND		0.050	mg/L						
LCS (B8J0733-BS1)					Prepared: 10/17/18 Analyzed: 10/18/18					
Antimony	1.04		0.005	mg/L	1.00		104	85-115		
Calcium	11.1		0.05	mg/L	10.0		111	85-115		
Selenium	0.200		0.010	mg/L	0.200		99.9	85-115		
Arsenic	0.211		0.010	mg/L	0.200		105	85-115		
Magnesium	10.9		0.05	mg/L	10.0		109	85-115		
Copper	1.07		0.020	mg/L	1.00		107	85-115		
Iron	10.7		0.050	mg/L	10.0		107	85-115		
Lead	1.14		0.005	mg/L	1.00		114	85-115		
Silver	0.355		0.005	mg/L	0.400		88.7	85-115		
Cadmium	1.08		0.004	mg/L	1.00		108	85-114		
Zinc	1.10		0.020	mg/L	1.00		110	85-115		
Chromium	1.14		0.005	mg/L	1.00		114	85-115		
Nickel	1.01		0.005	mg/L	1.00		101	85-112		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0874 - Purge-Trap										
Blank (B8J0874-BLK1)					Prepared & Analyzed: 10/18/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<hr/>										
Surrogate: 4-Bromofluorobenzene			46.7	ug/l	50.0		93.4	70-130		
Surrogate: 1,2-Dichloroethane-d4			51.9	ug/l	50.0		104	70-130		
Surrogate: Toluene-d8			49.5	ug/l	50.0		98.9	70-130		
<hr/>										
LCS (B8J0874-BS1)					Prepared & Analyzed: 10/18/18					
Benzene	20			ug/l	20.0		102	65-135		
Toluene	20			ug/l	20.0		102	70-130		
Acetone	23			ug/l	20.0		116	70-130		
tert-Butyl alcohol	15			ug/l	20.0		76.8	70-130		
Total xylenes	60		1	ug/l				70-130		
o-Xylene	19			ug/l	20.0		95.0	70-130		
m&p-Xylene	41			ug/l	40.0		103	70-130		
tert-Amyl methyl ether	19			ug/l	20.0		94.9	70-130		
Ethylbenzene	20			ug/l	20.0		101	60-140		
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Surrogate: 4-Bromofluorobenzene			51.9	ug/l	50.0		104	70-130		
Surrogate: 1,2-Dichloroethane-d4			50.3	ug/l	50.0		101	70-130		
Surrogate: Toluene-d8			51.2	ug/l	50.0		102	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0976 - Purge-Trap										
Blank (B8J0976-BLK1)					Prepared & Analyzed: 10/22/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<hr/>										
Surrogate: 4-Bromofluorobenzene			49.0	ug/l	50.0		97.9	70-130		
Surrogate: 1,2-Dichloroethane-d4			44.5	ug/l	50.0		89.0	70-130		
Surrogate: Toluene-d8			63.0	ug/l	50.0		126	70-130		
<hr/>										
LCS (B8J0976-BS1)					Prepared & Analyzed: 10/22/18					
Benzene	23			ug/l	20.0		115	65-135		
Toluene	24			ug/l	20.0		119	70-130		
Acetone	22			ug/l	20.0		111	70-130		
tert-Butyl alcohol	18			ug/l	20.0		90.6	70-130		
Total xylenes	74		1	ug/l				70-130		
o-Xylene	25			ug/l	20.0		124	70-130		
m&p-Xylene	50			ug/l	40.0		124	70-130		
tert-Amyl methyl ether	23			ug/l	20.0		115	70-130		
Ethylbenzene	24			ug/l	20.0		119	60-140		
<hr/>										
Surrogate: 4-Bromofluorobenzene			50.5	ug/l	50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4			51.4	ug/l	50.0		103	70-130		
Surrogate: Toluene-d8			50.0	ug/l	50.0		100	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0964 - EPA 3580A										
Blank (B8J0964-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 10/23/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8J0730 - Sep-Funnel-extraction										
Blank (B8J0730-BLK1)										
					Prepared: 10/17/18 Analyzed: 10/18/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		0.5	ug/l						
Acenaphthylene	ND		0.5	ug/l						
Anthracene	ND		0.5	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		0.5	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		0.5	ug/l						
Fluorene	ND		0.5	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		0.5	ug/l						
Pyrene	ND		0.5	ug/l						
<i>Surrogate: Nitrobenzene-d5</i>			40.8	ug/l	50.0		81.5	15-130		
<i>Surrogate: p-Terphenyl-d14</i>			46.7	ug/l	50.0		93.3	50-130		
<i>Surrogate: 2-Fluorobiphenyl</i>			41.8	ug/l	50.0		83.6	35-130		
<i>Surrogate: Phenol-d6</i>			10.0	ug/l	50.0		20.0	10-83		
<i>Surrogate: 2,4,6-Tribromophenol</i>			43.6	ug/l	50.0		87.3	44-120		
<i>Surrogate: 2-Fluorophenol</i>			17.7	ug/l	50.0		35.3	10-81		
LCS (B8J0730-BS1)										
					Prepared: 10/17/18 Analyzed: 10/18/18					
Phenol	12		2	ug/l	50.0		23.3	17-120		
Acenaphthene	43		2	ug/l	50.0		85.7	60-132		
Acenaphthylene	48		2	ug/l	50.0		95.0	54-126		
Anthracene	52		2	ug/l	50.0		104	43-120		
Benzo(a)anthracene	50		2	ug/l	50.0		100	42-133		
Benzo(a)pyrene	52		2	ug/l	50.0		105	32-148		
Benzo(b)fluoranthene	53		2	ug/l	50.0		106	42-140		
Benzo(g,h,i)perylene	56		2	ug/l	50.0		111	5-195		
Benzo(k)fluoranthene	54		2	ug/l	50.0		108	25-146		
Chrysene	51		2	ug/l	50.0		102	44-140		
Dibenz(a,h)anthracene	52		2	ug/l	50.0		103	5-200		
Fluoranthene	53		2	ug/l	50.0		106	43-121		
Fluorene	52		2	ug/l	50.0		104	70-120		
Indeno(1,2,3-cd)pyrene	53		2	ug/l	50.0		105	5-151		
Naphthalene	44		2	ug/l	50.0		88.0	36-120		
Phenanthrene	51		2	ug/l	50.0		102	65-120		
Pyrene	48		2	ug/l	50.0		96.6	70-120		
<i>Surrogate: Nitrobenzene-d5</i>			42.1	ug/l	50.0		84.2	15-130		
<i>Surrogate: p-Terphenyl-d14</i>			49.8	ug/l	50.0		99.7	50-130		
<i>Surrogate: 2-Fluorobiphenyl</i>			45.6	ug/l	50.0		91.2	35-130		
<i>Surrogate: Phenol-d6</i>			11.6	ug/l	50.0		23.1	10-83		
<i>Surrogate: 2,4,6-Tribromophenol</i>			54.7	ug/l	50.0		109	44-120		
<i>Surrogate: 2-Fluorophenol</i>			18.2	ug/l	50.0		36.5	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

Medford 230 Salem St NPDES

Parameter	Applicable D.L. (ug/L)	NEITAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	11 Amb Non-pres
Benzo(a)anthracene	0.5	EPA 625	11 Amb Non-pres
Benzo(a)pyrene	0.5	EPA 625	11 Amb Non-pres
Benzo(b)fluoranthene	0.5	EPA 625	11 Amb Non-pres
Benzo(k)fluoranthene	0.5	EPA 625	11 Amb Non-pres
Chrysene	0.5	EPA 625	11 Amb Non-pres
Dibenzo(a,h)anthracene	0.5	EPA 625	11 Amb Non-pres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	11 Amb Non-pres
Total Group II PAHs	5-2.5	EPA 625	11 Amb Non-pres
Napthalene	0.5	EPA 625	11 Amb Non-pres
TPH	5,000	EPA 1664A	
Ethanol	400	1666, 1671, D3695	
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL

Acetone
Phenol

50
2.5

EPA 624
EPA 625

40 ml Vial HCL
1 L Amb Non-presence



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8K14035
Client Project: 236 Salem St, Medford, MA

Report Date: 21-November-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

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New England Testing Laboratory, Inc.
59 Greenhill Street
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 11/14/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8K14035. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8K14035-01	Influent	Water	11/14/2018	11/14/2018
8K14035-02	Effluent	Water	11/14/2018	11/14/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8K14035-02)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel
 Oil & Grease, SGT
 pH
 Selenium
 Silver
 Total Residual Chlorine
 Total Suspended Solids
 Trivalent Chromium
 Volatile Organic Compounds
 Volatile Organic Compounds
 Zinc

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7
 EPA 1664A
 SM4500-H-B
 EPA 200.7
 EPA 200.7
 SM4500-CI-G
 SM2540-D
 Calculation
 EPA 524.2
 EPA 624.1
 EPA 200.7

Influent (Lab Number: 8K14035-01)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7

Request for Analysis (continued)

Influent (Lab Number: 8K14035-01) (continued)

Analysis

Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

The sample 'Influent' was reported with elevated detection limits due to the foaming nature of the sample.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8K14035-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	11/15/18 11:01	11/15/18 14:00

Results: Calculation

Sample: Effluent
Lab Number: 8K14035-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	11/15/18 11:01	11/15/18 14:02

Results: General Chemistry**Sample: Influent****Lab Number: 8K14035-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.3		0.2	mg/L	11/20/18	11/20/18
Chloride	529		50	mg/L	11/15/18	11/15/18
Cyanide	ND		0.01	mg/L	11/15/18	11/15/18
Hexavalent chromium	ND		0.01	mg/L	11/15/18 9:00	11/15/18 9:00
pH	6.2		0.1	SU	11/14/18 17:15	11/14/18 17:15
Oil & Grease SGT	3		2	mg/L	11/14/18	11/15/18
Total Residual Chlorine	ND		0.01	mg/L	11/14/18 17:05	11/14/18 17:05
Total Suspended Solids	ND		2	mg/L	11/20/18	11/20/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8K14035-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.1		0.1	mg/L	11/20/18	11/20/18
Chloride	673		50	mg/L	11/15/18	11/15/18
Cyanide	ND		0.01	mg/L	11/15/18	11/15/18
Hexavalent chromium	ND		0.01	mg/L	11/15/18 9:00	11/15/18 9:00
pH	6.8		0.1	SU	11/14/18 17:15	11/14/18 17:15
Oil & Grease SGT	2		2	mg/L	11/14/18	11/15/18
Total Residual Chlorine	ND		0.01	mg/L	11/14/18 17:05	11/14/18 17:05
Total Suspended Solids	ND		2	mg/L	11/20/18	11/20/18

Results: Total Metals**Sample: Influent****Lab Number: 8K14035-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	141		0.125	mg/L	11/15/18	11/15/18
Antimony	0.005		0.005	mg/L	11/15/18	11/15/18
Arsenic	ND		0.010	mg/L	11/15/18	11/15/18
Cadmium	ND		0.004	mg/L	11/15/18	11/15/18
Calcium	47.3		0.05	mg/L	11/15/18	11/15/18
Chromium	ND		0.005	mg/L	11/15/18	11/15/18
Copper	ND		0.020	mg/L	11/15/18	11/15/18
Iron	0.605		0.050	mg/L	11/15/18	11/15/18
Lead	ND		0.005	mg/L	11/15/18	11/15/18
Magnesium	5.57		0.05	mg/L	11/15/18	11/15/18
Mercury	ND		0.0002	mg/L	11/16/18	11/16/18
Nickel	ND		0.005	mg/L	11/15/18	11/15/18
Selenium	ND		0.010	mg/L	11/15/18	11/15/18
Silver	ND		0.005	mg/L	11/15/18	11/15/18
Zinc	ND		0.020	mg/L	11/15/18	11/15/18

Results: Total Metals**Sample: Effluent****Lab Number: 8K14035-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	144		0.125	mg/L	11/15/18	11/15/18
Antimony	ND		0.005	mg/L	11/15/18	11/15/18
Arsenic	ND		0.010	mg/L	11/15/18	11/15/18
Cadmium	ND		0.004	mg/L	11/15/18	11/15/18
Calcium	48.1		0.05	mg/L	11/15/18	11/15/18
Chromium	ND		0.005	mg/L	11/15/18	11/15/18
Copper	ND		0.020	mg/L	11/15/18	11/15/18
Iron	ND		0.050	mg/L	11/15/18	11/15/18
Lead	ND		0.005	mg/L	11/15/18	11/15/18
Magnesium	5.79		0.05	mg/L	11/15/18	11/15/18
Mercury	ND		0.0002	mg/L	11/16/18	11/16/18
Nickel	ND		0.005	mg/L	11/15/18	11/15/18
Selenium	ND		0.010	mg/L	11/15/18	11/15/18
Silver	ND		0.005	mg/L	11/15/18	11/15/18
Zinc	ND		0.020	mg/L	11/15/18	11/15/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8K14035-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	11/15/18	11/15/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>105%</i>		<i>70-130</i>		11/15/18	11/15/18
<i>1,2-Dichlorobenzene-d4</i>	<i>107%</i>		<i>70-130</i>		11/15/18	11/15/18
Benzene	ND		10	ug/l	11/19/18	11/20/18
Toluene	ND		10	ug/l	11/19/18	11/20/18
Acetone	ND		50	ug/l	11/19/18	11/20/18
tert-Butyl alcohol	ND		50	ug/l	11/19/18	11/20/18
Total xylenes	ND		10	ug/l	11/19/18	11/20/18
o-Xylene	ND		10	ug/l	11/19/18	11/20/18
m&p-Xylene	ND		20	ug/l	11/19/18	11/20/18
tert-Amyl methyl ether	ND		10	ug/l	11/19/18	11/20/18
Ethylbenzene	ND		10	ug/l	11/19/18	11/20/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>97.8%</i>		<i>70-130</i>		11/19/18	11/20/18
<i>1,2-Dichloroethane-d4</i>	<i>99.9%</i>		<i>70-130</i>		11/19/18	11/20/18
<i>Toluene-d8</i>	<i>100%</i>		<i>70-130</i>		11/19/18	11/20/18

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 8K14035-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	11/15/18	11/15/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>97.4%</i>		<i>70-130</i>		11/15/18	11/15/18
<i>1,2-Dichlorobenzene-d4</i>	<i>103%</i>		<i>70-130</i>		11/15/18	11/15/18
Benzene	ND		1	ug/l	11/19/18	11/20/18
Toluene	ND		1	ug/l	11/19/18	11/20/18
Acetone	ND		5	ug/l	11/19/18	11/20/18
tert-Butyl alcohol	ND		5	ug/l	11/19/18	11/20/18
Total xylenes	ND		1	ug/l	11/19/18	11/20/18
o-Xylene	ND		1	ug/l	11/19/18	11/20/18
m&p-Xylene	ND		2	ug/l	11/19/18	11/20/18
tert-Amyl methyl ether	ND		1	ug/l	11/19/18	11/20/18
Ethylbenzene	ND		1	ug/l	11/19/18	11/20/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>96.1%</i>		<i>70-130</i>		11/19/18	11/20/18
<i>1,2-Dichloroethane-d4</i>	<i>100%</i>		<i>70-130</i>		11/19/18	11/20/18
<i>Toluene-d8</i>	<i>101%</i>		<i>70-130</i>		11/19/18	11/20/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8K14035-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	11/20/18	11/20/18

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 8K14035-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	11/20/18	11/20/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8K14035-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	11/20/18	11/20/18
Acenaphthene	ND		0.5	ug/l	11/20/18	11/20/18
Acenaphthylene	ND		0.5	ug/l	11/20/18	11/20/18
Anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(a)anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(a)pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(b)fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(k)fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Chrysene	ND		0.5	ug/l	11/20/18	11/20/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Fluorene	ND		0.5	ug/l	11/20/18	11/20/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Naphthalene	ND		0.5	ug/l	11/20/18	11/20/18
Phenanthrene	ND		0.5	ug/l	11/20/18	11/20/18
Pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	83.3%		15-130		11/20/18	11/20/18
<i>p-Terphenyl-d14</i>	78.2%		50-130		11/20/18	11/20/18
<i>2-Fluorobiphenyl</i>	78.8%		35-130		11/20/18	11/20/18
<i>Phenol-d6</i>	16.0%		10-83		11/20/18	11/20/18
<i>2,4,6-Tribromophenol</i>	81.7%		44-120		11/20/18	11/20/18
<i>2-Fluorophenol</i>	32.4%		10-81		11/20/18	11/20/18

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 8K14035-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	11/20/18	11/20/18
Acenaphthene	ND		0.5	ug/l	11/20/18	11/20/18
Acenaphthylene	ND		0.5	ug/l	11/20/18	11/20/18
Anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(a)anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(a)pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(b)fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	11/20/18	11/20/18
Benzo(k)fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Chrysene	ND		0.5	ug/l	11/20/18	11/20/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	11/20/18	11/20/18
Fluoranthene	ND		0.5	ug/l	11/20/18	11/20/18
Fluorene	ND		0.5	ug/l	11/20/18	11/20/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Naphthalene	ND		0.5	ug/l	11/20/18	11/20/18
Phenanthrene	ND		0.5	ug/l	11/20/18	11/20/18
Pyrene	ND		0.5	ug/l	11/20/18	11/20/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	76.9%		15-130		11/20/18	11/20/18
<i>p-Terphenyl-d14</i>	84.8%		50-130		11/20/18	11/20/18
<i>2-Fluorobiphenyl</i>	71.5%		35-130		11/20/18	11/20/18
<i>Phenol-d6</i>	15.2%		10-83		11/20/18	11/20/18
<i>2,4,6-Tribromophenol</i>	74.4%		44-120		11/20/18	11/20/18
<i>2-Fluorophenol</i>	29.5%		10-81		11/20/18	11/20/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0606 - Oil & Grease										
Blank (B8K0606-BLK1)					Prepared: 11/14/18 Analyzed: 11/15/18					
Oil & Grease SGT	ND		2	mg/L						
LCS (B8K0606-BS1)					Prepared: 11/14/18 Analyzed: 11/15/18					
Oil & Grease SGT	17		2	mg/L	20.0		86.0	64-132		
Batch: B8K0617 - Residual chlorine										
Blank (B8K0617-BLK1)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8K0617-BLK2)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8K0617-BS1)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	0.48		0.01	mg/L	0.500		95.4	90-110		
LCS (B8K0617-BS2)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		93.4	90-110		
Duplicate (B8K0617-DUP1)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	ND		0.01	mg/L		ND				20
Matrix Spike (B8K0617-MS1)					Prepared & Analyzed: 11/14/18					
Total Residual Chlorine	0.22		0.01	mg/L	0.500	ND	45.0	80-120		
Batch: B8K0634 - pH										
LCS (B8K0634-BS1)					Prepared & Analyzed: 11/14/18					
pH	7.1		0.1	SU	7.00		101	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0634 - pH (Continued)										
LCS (B8K0634-BS2)					Prepared & Analyzed: 11/14/18					
pH	7.0		0.1	SU	7.00		101	90-110		
Duplicate (B8K0634-DUP1)					Prepared & Analyzed: 11/14/18					
pH	7.0		0.1	SU	7.0				0.142	20
Batch: B8K0665 - Cyanide										
Blank (B8K0665-BLK1)					Prepared & Analyzed: 11/15/18					
Cyanide	ND		0.01	mg/L						
Blank (B8K0665-BLK2)					Prepared & Analyzed: 11/15/18					
Cyanide	ND		0.01	mg/L						
LCS (B8K0665-BS1)					Prepared & Analyzed: 11/15/18					
Cyanide	0.10		0.01	mg/L	0.100		103	90-110		
LCS (B8K0665-BS2)					Prepared & Analyzed: 11/15/18					
Cyanide	0.10		0.01	mg/L	0.100		95.0	90-110		
LCS (B8K0665-BS3)					Prepared & Analyzed: 11/15/18					
Cyanide	0.10		0.01	mg/L	0.100		104	90-110		
Duplicate (B8K0665-DUP1)					Prepared & Analyzed: 11/15/18					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B8K0665-MS1)					Prepared & Analyzed: 11/15/18					
Cyanide	0.12		0.01	mg/L	0.100	ND	115	80-120		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0703 - Hexavalent Chrome										
Blank (B8K0703-BLK1)					Prepared & Analyzed: 11/15/18					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8K0703-BLK2)					Prepared & Analyzed: 11/15/18					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B8K0703-BS1)					Prepared & Analyzed: 11/15/18					
Hexavalent chromium	0.51		0.01	mg/L	0.500		103	90-110		
LCS (B8K0703-BS2)					Prepared & Analyzed: 11/15/18					
Hexavalent chromium	0.09		0.01	mg/L	0.100		93.0	90-110		
LCS (B8K0703-BS3)					Prepared & Analyzed: 11/15/18					
Hexavalent chromium	0.53		0.01	mg/L	0.500		105	90-110		
Duplicate (B8K0703-DUP1)					Source: 8K14035-01					
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8K0703-MS1)					Source: 8K14035-01					
Hexavalent chromium	0.54		0.01	mg/L	0.500	ND	107	80-120		
Batch: B8K0711 - Chloride										
Blank (B8K0711-BLK1)					Prepared & Analyzed: 11/15/18					
Chloride	ND		1	mg/L						
LCS (B8K0711-BS1)					Prepared & Analyzed: 11/15/18					
Chloride	59		1	mg/L	60.6		96.8	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0711 - Chloride (Continued)										
Duplicate (B8K0711-DUP1)			Source: 8K14052-02		Prepared & Analyzed: 11/15/18					
Chloride	67		5	mg/L		62			7.41	20
Matrix Spike (B8K0711-MS1)			Source: 8K14052-02		Prepared & Analyzed: 11/15/18					
Chloride	135		5	mg/L	60.6	62	119	80-120		
Batch: B8K0885 - Ammonia										
Blank (B8K0885-BLK1)					Prepared & Analyzed: 11/20/18					
Ammonia	ND		0.1	mg/L						
Blank (B8K0885-BLK2)					Prepared & Analyzed: 11/20/18					
Ammonia	ND		0.1	mg/L						
LCS (B8K0885-BS1)					Prepared & Analyzed: 11/20/18					
Ammonia	1.0		0.1	mg/L	1.00		96.1	90-110		
LCS (B8K0885-BS2)					Prepared & Analyzed: 11/20/18					
Ammonia	1.0		0.1	mg/L	1.00		103	90-110		
Duplicate (B8K0885-DUP1)			Source: 8K14012-01		Prepared & Analyzed: 11/20/18					
Ammonia	1.1		0.1	mg/L		1.1			2.38	20
Matrix Spike (B8K0885-MS1)			Source: 8K14012-01		Prepared & Analyzed: 11/20/18					
Ammonia	2.0		0.1	mg/L	1.00	1.1	91.5	80-120		
Batch: B8K0914 - TSS										
Blank (B8K0914-BLK1)					Prepared & Analyzed: 11/20/18					
Total Suspended Solids	ND		2	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0914 - TSS (Continued)										
LCS (B8K0914-BS1)										
Total Suspended Solids	962		10	mg/L	1000		96.2	90-110		
Duplicate (B8K0914-DUP1)										
	Source: 8K14037-01									
Total Suspended Solids	90		3	mg/L		81			10.5	20

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0637 - Hot plate acid digestion waters										
Blank (B8K0637-BLK1)					Prepared & Analyzed: 11/15/18					
Cadmium	ND		0.004	mg/L						
Arsenic	ND		0.010	mg/L						
Antimony	ND		0.005	mg/L						
Silver	ND		0.005	mg/L						
Copper	ND		0.020	mg/L						
Zinc	ND		0.020	mg/L						
Lead	ND		0.005	mg/L						
Iron	ND		0.050	mg/L						
Selenium	ND		0.010	mg/L						
Chromium	ND		0.005	mg/L						
Nickel	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
Calcium	ND		0.05	mg/L						
LCS (B8K0637-BS1)					Prepared & Analyzed: 11/15/18					
Copper	1.02		0.020	mg/L	1.00		102	85-115		
Iron	10.6		0.050	mg/L	10.0		106	85-115		
Calcium	11.2		0.05	mg/L	10.0		112	85-115		
Antimony	1.15		0.005	mg/L	1.00		115	85-115		
Zinc	1.07		0.020	mg/L	1.00		107	85-115		
Lead	1.02		0.005	mg/L	1.00		102	85-115		
Magnesium	10.9		0.05	mg/L	10.0		109	85-115		
Nickel	1.03		0.005	mg/L	1.00		103	85-112		
Selenium	0.204		0.010	mg/L	0.200		102	85-115		
Cadmium	1.04		0.004	mg/L	1.00		104	85-114		
Arsenic	0.214		0.010	mg/L	0.200		107	85-115		
Silver	0.383		0.005	mg/L	0.400		95.8	85-115		
Chromium	1.04		0.005	mg/L	1.00		104	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0829 - Purge-Trap										
Blank (B8K0829-BLK1)					Prepared & Analyzed: 11/19/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<i>Surrogate: 4-Bromofluorobenzene</i>			49.1	ug/l	50.0		98.3	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			49.2	ug/l	50.0		98.4	70-130		
<i>Surrogate: Toluene-d8</i>			50.1	ug/l	50.0		100	70-130		
LCS (B8K0829-BS1)					Prepared & Analyzed: 11/19/18					
Benzene	21			ug/l	20.0		104	65-135		
Toluene	20			ug/l	20.0		102	70-130		
Acetone	22			ug/l	20.0		108	70-130		
tert-Butyl alcohol	19			ug/l	20.0		97.0	70-130		
Total xylenes	64		1	ug/l				70-130		
o-Xylene	21			ug/l	20.0		107	70-130		
m&p-Xylene	42			ug/l	40.0		106	70-130		
tert-Amyl methyl ether	21			ug/l	20.0		104	70-130		
Ethylbenzene	21			ug/l	20.0		106	60-140		
<i>Surrogate: 4-Bromofluorobenzene</i>			50.8	ug/l	50.0		102	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			53.3	ug/l	50.0		107	70-130		
<i>Surrogate: Toluene-d8</i>			51.4	ug/l	50.0		103	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0806 - EPA 3580A										
Blank (B8K0806-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 11/20/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8K0803 - Sep-Funnel-extraction										
Blank (B8K0803-BLK1)					Prepared & Analyzed: 11/20/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		0.5	ug/l						
Acenaphthylene	ND		0.5	ug/l						
Anthracene	ND		0.5	ug/l						
Benzo(a)anthracene	ND		0.5	ug/l						
Benzo(a)pyrene	ND		0.5	ug/l						
Benzo(b)fluoranthene	ND		0.5	ug/l						
Benzo(g,h,i)perylene	ND		0.5	ug/l						
Benzo(k)fluoranthene	ND		0.5	ug/l						
Chrysene	ND		0.5	ug/l						
Dibenz(a,h)anthracene	ND		0.5	ug/l						
Fluoranthene	ND		0.5	ug/l						
Fluorene	ND		0.5	ug/l						
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l						
Naphthalene	ND		0.5	ug/l						
Phenanthrene	ND		0.5	ug/l						
Pyrene	ND		0.5	ug/l						
<i>Surrogate: Nitrobenzene-d5</i>			43.0	ug/l	50.0		86.1	15-130		
<i>Surrogate: p-Terphenyl-d14</i>			43.3	ug/l	50.0		86.6	50-130		
<i>Surrogate: 2-Fluorobiphenyl</i>			39.9	ug/l	50.0		79.7	35-130		
<i>Surrogate: Phenol-d6</i>			9.52	ug/l	50.0		19.0	10-83		
<i>Surrogate: 2,4,6-Tribromophenol</i>			40.9	ug/l	50.0		81.8	44-120		
<i>Surrogate: 2-Fluorophenol</i>			18.0	ug/l	50.0		36.0	10-81		
LCS (B8K0803-BS1)										
					Prepared & Analyzed: 11/20/18					
Phenol	9		2	ug/l	50.0		18.8	17-120		
Acenaphthene	40		2	ug/l	50.0		79.4	60-132		
Acenaphthylene	41		2	ug/l	50.0		82.2	54-126		
Anthracene	42		2	ug/l	50.0		84.3	43-120		
Benzo(a)anthracene	41		2	ug/l	50.0		82.5	42-133		
Benzo(a)pyrene	44		2	ug/l	50.0		88.0	32-148		
Benzo(b)fluoranthene	43		2	ug/l	50.0		86.2	42-140		
Benzo(g,h,i)perylene	45		2	ug/l	50.0		89.8	5-195		
Benzo(k)fluoranthene	44		2	ug/l	50.0		87.2	25-146		
Chrysene	42		2	ug/l	50.0		84.8	44-140		
Dibenz(a,h)anthracene	42		2	ug/l	50.0		83.7	5-200		
Fluoranthene	42		2	ug/l	50.0		83.1	43-121		
Fluorene	42		2	ug/l	50.0		84.6	70-120		
Indeno(1,2,3-cd)pyrene	43		2	ug/l	50.0		85.6	5-151		
Naphthalene	37		2	ug/l	50.0		73.5	36-120		
Phenanthrene	42		2	ug/l	50.0		84.0	65-120		
Pyrene	39		2	ug/l	50.0		78.2	70-120		
<i>Surrogate: Nitrobenzene-d5</i>			40.2	ug/l	50.0		80.3	15-130		
<i>Surrogate: p-Terphenyl-d14</i>			43.1	ug/l	50.0		86.3	50-130		
<i>Surrogate: 2-Fluorobiphenyl</i>			39.2	ug/l	50.0		78.5	35-130		
<i>Surrogate: Phenol-d6</i>			7.56	ug/l	50.0		15.1	10-83		
<i>Surrogate: 2,4,6-Tribromophenol</i>			48.6	ug/l	50.0		97.2	44-120		
<i>Surrogate: 2-Fluorophenol</i>			14.5	ug/l	50.0		29.0	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

1-888-863-8522



8 K 1 4035 I

PROJ. NO.	PROJECT NAME/LOCATION	CLIENT	REPORT TO:	INVOICE TO:	DATE	TIME	COM	GRAB	SAMPLE I.D.	SCORING	TESTS	NO. OF CONTAINERS	OTHER	REMARKS	
236 Salem St., Medford, MA	Cooperstown Environmental	Eric Anderson, Jeanne	Eric Anderson	Lisa	11/14/18	10:15	✓	✓	Influent	✓	MS, 4, TR, TS, SS, A, G, H, Pb, Cu, Ni, Zn, Ag, Zn, Cd, Toluene, BTEX, PAH, Benzene, Toluene, Ethanol, MTBE, TCE, PCE, DCE, VC, THM, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	1			Special Instructions: List Specific Detection Limit Requirements:
					11/14/18	10:30			Effluent	✓	MS, 4, TR, TS, SS, A, G, H, Pb, Cu, Ni, Zn, Ag, Zn, Cd, Toluene, BTEX, PAH, Benzene, Toluene, Ethanol, MTBE, TCE, PCE, DCE, VC, THM, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	1			

***Neill subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	
Ethanol	400	1666, 1671, D3695	
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8L11049
Client Project: 236 Salem St, Medford, MA

Report Date: 20-December-2018

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 12/11/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8L11049. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8L11049-01	Influent	Water	12/11/2018	12/11/2018
8L11049-02	Effluent	Water	12/11/2018	12/11/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 8L11049-02)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel
 Oil & Grease, SGT
 pH
 Selenium
 Silver
 Total Residual Chlorine
 Total Suspended Solids
 Trivalent Chromium
 Volatile Organic Compounds
 Volatile Organic Compounds
 Zinc

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7
 EPA 1664A
 SM4500-H-B
 EPA 200.7
 EPA 200.7
 SM4500-CI-G
 SM2540-D
 Calculation
 EPA 524.2
 EPA 624.1
 EPA 200.7

Influent (Lab Number: 8L11049-01)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7

Request for Analysis (continued)

Influent (Lab Number: 8L11049-01) (continued)

Analysis

Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

524: 'Influent' was reported with one surrogate outside of the method-recommended QC limits due to matrix interference.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 8L11049-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	12/13/18 12:24	12/14/18 15:29

Results: Calculation

Sample: Effluent
Lab Number: 8L11049-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	12/13/18 12:24	12/14/18 15:32

Results: General Chemistry**Sample: Influent****Lab Number: 8L11049-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	ND		0.2	mg/L	12/17/18	12/17/18
Chloride	603		50	mg/L	12/12/18	12/12/18
Cyanide	ND		0.01	mg/L	12/18/18	12/18/18
Hexavalent chromium	ND		0.01	mg/L	12/12/18 7:45	12/12/18 7:45
pH	6.3		0.1	SU	12/11/18 17:00	12/11/18 17:00
Oil & Grease SGT	ND		2	mg/L	12/13/18	12/13/18
Total Residual Chlorine	0.06		0.01	mg/L	12/11/18 18:45	12/11/18 18:45
Total Suspended Solids	4		2	mg/L	12/13/18	12/13/18

Results: General Chemistry**Sample: Effluent****Lab Number: 8L11049-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	0.1		0.1	mg/L	12/17/18	12/17/18
Chloride	905		50	mg/L	12/12/18	12/12/18
Cyanide	ND		0.01	mg/L	12/18/18	12/18/18
Hexavalent chromium	ND		0.01	mg/L	12/12/18 7:45	12/12/18 7:45
pH	6.6		0.1	SU	12/11/18 17:00	12/11/18 17:00
Oil & Grease SGT	ND		2	mg/L	12/13/18	12/13/18
Total Residual Chlorine	0.28		0.01	mg/L	12/11/18 18:45	12/11/18 18:45
Total Suspended Solids	55		2	mg/L	12/13/18	12/13/18

Results: Total Metals**Sample: Influent****Lab Number: 8L11049-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	143		0.125	mg/L	12/13/18	12/14/18
Antimony	0.009		0.005	mg/L	12/13/18	12/14/18
Arsenic	ND		0.010	mg/L	12/13/18	12/14/18
Cadmium	ND		0.004	mg/L	12/13/18	12/14/18
Calcium	47.5		0.05	mg/L	12/13/18	12/14/18
Chromium	ND		0.005	mg/L	12/13/18	12/14/18
Copper	0.030		0.020	mg/L	12/13/18	12/14/18
Iron	0.537		0.050	mg/L	12/13/18	12/14/18
Lead	ND		0.005	mg/L	12/13/18	12/14/18
Magnesium	5.93		0.05	mg/L	12/13/18	12/14/18
Mercury	ND		0.0002	mg/L	12/14/18	12/14/18
Nickel	ND		0.005	mg/L	12/13/18	12/14/18
Selenium	ND		0.010	mg/L	12/13/18	12/14/18
Silver	ND		0.005	mg/L	12/13/18	12/14/18
Zinc	0.052		0.020	mg/L	12/13/18	12/14/18

Results: Total Metals**Sample: Effluent****Lab Number: 8L11049-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	138		0.125	mg/L	12/13/18	12/14/18
Antimony	ND		0.005	mg/L	12/13/18	12/14/18
Arsenic	ND		0.010	mg/L	12/13/18	12/14/18
Cadmium	ND		0.004	mg/L	12/13/18	12/14/18
Calcium	45.5		0.05	mg/L	12/13/18	12/14/18
Chromium	ND		0.005	mg/L	12/13/18	12/14/18
Copper	ND		0.020	mg/L	12/13/18	12/14/18
Iron	3.07		0.050	mg/L	12/13/18	12/14/18
Lead	ND		0.005	mg/L	12/13/18	12/14/18
Magnesium	5.96		0.05	mg/L	12/13/18	12/14/18
Mercury	ND		0.0002	mg/L	12/14/18	12/14/18
Nickel	ND		0.005	mg/L	12/13/18	12/14/18
Selenium	ND		0.010	mg/L	12/13/18	12/14/18
Silver	ND		0.005	mg/L	12/13/18	12/14/18
Zinc	0.033		0.020	mg/L	12/13/18	12/14/18

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 8L11049-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	12/20/18	12/20/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>92.4%</i>		<i>70-130</i>		12/20/18	12/20/18
<i>1,2-Dichlorobenzene-d4</i>	<i>51.8%</i>		<i>70-130</i>		12/20/18	12/20/18
Benzene	ND		1	ug/l	12/19/18	12/19/18
Toluene	2		1	ug/l	12/19/18	12/19/18
Acetone	ND		15	ug/l	12/19/18	12/19/18
tert-Butyl alcohol	ND		5	ug/l	12/19/18	12/19/18
Total xylenes	17		1	ug/l	12/19/18	12/19/18
o-Xylene	4		1	ug/l	12/19/18	12/19/18
m&p-Xylene	13		2	ug/l	12/19/18	12/19/18
tert-Amyl methyl ether	ND		1	ug/l	12/19/18	12/19/18
Ethylbenzene	4		1	ug/l	12/19/18	12/19/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>92.2%</i>		<i>70-130</i>		12/19/18	12/19/18
<i>1,2-Dichloroethane-d4</i>	<i>104%</i>		<i>70-130</i>		12/19/18	12/19/18
<i>Toluene-d8</i>	<i>98.2%</i>		<i>70-130</i>		12/19/18	12/19/18

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 8L11049-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	12/17/18	12/17/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>117%</i>		<i>70-130</i>		12/17/18	12/17/18
<i>1,2-Dichlorobenzene-d4</i>	<i>123%</i>		<i>70-130</i>		12/17/18	12/17/18
Benzene	ND		1	ug/l	12/19/18	12/19/18
Toluene	ND		1	ug/l	12/19/18	12/19/18
Acetone	ND		15	ug/l	12/19/18	12/19/18
tert-Butyl alcohol	ND		5	ug/l	12/19/18	12/19/18
Total xylenes	ND		1	ug/l	12/19/18	12/19/18
o-Xylene	ND		1	ug/l	12/19/18	12/19/18
m&p-Xylene	ND		2	ug/l	12/19/18	12/19/18
tert-Amyl methyl ether	ND		1	ug/l	12/19/18	12/19/18
Ethylbenzene	ND		1	ug/l	12/19/18	12/19/18
Surrogate(s)	Recovery%		Limits			
<i>4-Bromofluorobenzene</i>	<i>90.7%</i>		<i>70-130</i>		12/19/18	12/19/18
<i>1,2-Dichloroethane-d4</i>	<i>99.3%</i>		<i>70-130</i>		12/19/18	12/19/18
<i>Toluene-d8</i>	<i>94.7%</i>		<i>70-130</i>		12/19/18	12/19/18

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 8L11049-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	12/18/18	12/18/18

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 8L11049-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	12/18/18	12/18/18

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 8L11049-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	12/13/18	12/14/18
Acenaphthene	ND		0.5	ug/l	12/13/18	12/14/18
Acenaphthylene	ND		0.5	ug/l	12/13/18	12/14/18
Anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(a)anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(a)pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(b)fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(k)fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Chrysene	ND		0.5	ug/l	12/13/18	12/14/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Fluorene	ND		0.5	ug/l	12/13/18	12/14/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Naphthalene	ND		0.5	ug/l	12/13/18	12/14/18
Phenanthrene	ND		0.5	ug/l	12/13/18	12/14/18
Pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	51.2%		15-130		12/13/18	12/14/18
<i>p-Terphenyl-d14</i>	80.0%		50-130		12/13/18	12/14/18
<i>2-Fluorobiphenyl</i>	51.0%		35-130		12/13/18	12/14/18
<i>Phenol-d6</i>	12.6%		10-83		12/13/18	12/14/18
<i>2,4,6-Tribromophenol</i>	74.3%		44-120		12/13/18	12/14/18
<i>2-Fluorophenol</i>	20.1%		10-81		12/13/18	12/14/18

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 8L11049-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	12/13/18	12/14/18
Acenaphthene	ND		0.5	ug/l	12/13/18	12/14/18
Acenaphthylene	ND		0.5	ug/l	12/13/18	12/14/18
Anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(a)anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(a)pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(b)fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(g,h,i)perylene	ND		0.5	ug/l	12/13/18	12/14/18
Benzo(k)fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Chrysene	ND		0.5	ug/l	12/13/18	12/14/18
Dibenz(a,h)anthracene	ND		0.5	ug/l	12/13/18	12/14/18
Fluoranthene	ND		0.5	ug/l	12/13/18	12/14/18
Fluorene	ND		0.5	ug/l	12/13/18	12/14/18
Indeno(1,2,3-cd)pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Naphthalene	ND		0.5	ug/l	12/13/18	12/14/18
Phenanthrene	ND		0.5	ug/l	12/13/18	12/14/18
Pyrene	ND		0.5	ug/l	12/13/18	12/14/18
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	54.7%		15-130		12/13/18	12/14/18
<i>p-Terphenyl-d14</i>	84.5%		50-130		12/13/18	12/14/18
<i>2-Fluorobiphenyl</i>	51.9%		35-130		12/13/18	12/14/18
<i>Phenol-d6</i>	15.3%		10-83		12/13/18	12/14/18
<i>2,4,6-Tribromophenol</i>	60.6%		44-120		12/13/18	12/14/18
<i>2-Fluorophenol</i>	24.4%		10-81		12/13/18	12/14/18

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0474 - Chloride										
Blank (B8L0474-BLK1)	Prepared & Analyzed: 12/12/18									
Chloride	ND		1	mg/L						
LCS (B8L0474-BS1)	Prepared & Analyzed: 12/12/18									
Chloride	58		1	mg/L	60.6		95.3	90-110		
Duplicate (B8L0474-DUP1)	Prepared & Analyzed: 12/12/18									
Chloride	276		10	mg/L	259				6.45	20
Matrix Spike (B8L0474-MS1)	Prepared & Analyzed: 12/12/18									
Chloride	362		10	mg/L	60.6	259	171	80-120		
Batch: B8L0505 - Hexavalent Chrome										
Blank (B8L0505-BLK1)	Prepared & Analyzed: 12/12/18									
Hexavalent chromium	ND		0.01	mg/L						
Blank (B8L0505-BLK2)	Prepared & Analyzed: 12/12/18									
Hexavalent chromium	ND		0.01	mg/L						
LCS (B8L0505-BS1)	Prepared & Analyzed: 12/12/18									
Hexavalent chromium	0.53		0.01	mg/L	0.500		106	90-110		
LCS (B8L0505-BS2)	Prepared & Analyzed: 12/12/18									
Hexavalent chromium	0.09		0.01	mg/L	0.100		90.0	90-110		
LCS (B8L0505-BS3)	Prepared & Analyzed: 12/12/18									
Hexavalent chromium	0.54		0.01	mg/L	0.500		109	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0505 - Hexavalent Chrome (Continued)										
Duplicate (B8L0505-DUP1)			Source: 8L11049-01		Prepared & Analyzed: 12/12/18					
Hexavalent chromium	ND		0.01	mg/L		ND				20
Matrix Spike (B8L0505-MS1)			Source: 8L11049-01		Prepared & Analyzed: 12/12/18					
Hexavalent chromium	0.50		0.01	mg/L	0.500	ND	101	80-120		
Batch: B8L0522 - Residual chlorine										
Blank (B8L0522-BLK1)					Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B8L0522-BLK2)					Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B8L0522-BS1)					Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.8	90-110		
LCS (B8L0522-BS2)					Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.6	90-110		
Duplicate (B8L0522-DUP1)			Source: 8L11049-01		Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	0.06		0.01	mg/L		0.06			1.71	20
Matrix Spike (B8L0522-MS1)			Source: 8L11049-01		Prepared & Analyzed: 12/11/18					
Total Residual Chlorine	0.55		0.01	mg/L	0.500	0.06	98.6	80-120		
Batch: B8L0528 - Oil & Grease										
Blank (B8L0528-BLK1)					Prepared & Analyzed: 12/13/18					
Oil & Grease SGT	ND		2	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0528 - Oil & Grease (Continued)										
LCS (B8L0528-BS1)										
Oil & Grease SGT	17		2	mg/L	20.0		86.5	64-132		
Batch: B8L0552 - pH										
LCS (B8L0552-BS1)										
pH	7.1		0.1	SU				90-110		
Duplicate (B8L0552-DUP1)										
	Source: 8L11049-01				Prepared & Analyzed: 12/11/18					
pH	6.4		0.1	SU		6.3			2.04	20
Batch: B8L0578 - TSS										
Blank (B8L0578-BLK1)										
Total Suspended Solids	ND		2	mg/L						
LCS (B8L0578-BS1)										
Total Suspended Solids	982		10	mg/L	1000		98.2	90-110		
Duplicate (B8L0578-DUP1)										
	Source: 8L11046-05				Prepared & Analyzed: 12/13/18					
Total Suspended Solids	5		2	mg/L		4			16.7	20
Batch: B8L0675 - Ammonia										
Blank (B8L0675-BLK1)										
Ammonia	ND		0.1	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0675 - Ammonia (Continued)										
Blank (B8L0675-BLK2)					Prepared & Analyzed: 12/17/18					
Ammonia	ND		0.1	mg/L						
LCS (B8L0675-BS1)					Prepared & Analyzed: 12/17/18					
Ammonia	1.0		0.1	mg/L	1.00		104	90-110		
LCS (B8L0675-BS2)					Prepared & Analyzed: 12/17/18					
Ammonia	1.0		0.1	mg/L	1.00		99.4	90-110		
Duplicate (B8L0675-DUP1)					Source: 8L10003-01		Prepared & Analyzed: 12/17/18			
Ammonia	14.6		1.0	mg/L		14.4			1.18	20
Matrix Spike (B8L0675-MS1)					Source: 8L10003-01		Prepared & Analyzed: 12/17/18			
Ammonia	15.0		1.0	mg/L	10.0	14.4	5.79	80-120		
Batch: B8L0693 - Cyanide										
Blank (B8L0693-BLK1)					Prepared & Analyzed: 12/18/18					
Cyanide	ND		0.01	mg/L						
Blank (B8L0693-BLK2)					Prepared & Analyzed: 12/18/18					
Cyanide	ND		0.01	mg/L						
LCS (B8L0693-BS1)					Prepared & Analyzed: 12/18/18					
Cyanide	0.10		0.01	mg/L	0.100		103	90-110		
LCS (B8L0693-BS2)					Prepared & Analyzed: 12/18/18					
Cyanide	0.10		0.01	mg/L	0.100		98.0	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit
Batch: B8L0693 - Cyanide (Continued)									
LCS (B8L0693-BS3)									
Cyanide	0.10		0.01	mg/L	0.100	101	90-110		
Duplicate (B8L0693-DUP1)									
Cyanide	ND		0.01	mg/L	ND				200
Matrix Spike (B8L0693-MS1)									
Cyanide	0.10		0.01	mg/L	0.100	ND	100	80-120	

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0543 - Hot plate acid digestion waters										
Blank (B8L0543-BLK1)					Prepared: 12/13/18 Analyzed: 12/14/18					
Chromium	ND		0.005	mg/L						
Copper	ND		0.020	mg/L						
Selenium	ND		0.010	mg/L						
Cadmium	ND		0.004	mg/L						
Zinc	ND		0.020	mg/L						
Lead	ND		0.005	mg/L						
Antimony	ND		0.005	mg/L						
Iron	ND		0.050	mg/L						
Calcium	ND		0.05	mg/L						
Silver	ND		0.005	mg/L						
Arsenic	ND		0.010	mg/L						
Nickel	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
LCS (B8L0543-BS1)					Prepared: 12/13/18 Analyzed: 12/14/18					
Copper	1.05		0.020	mg/L	1.00		105	85-115		
Cadmium	1.00		0.004	mg/L	1.00		100	85-114		
Magnesium	11.2		0.05	mg/L	10.0		112	85-115		
Chromium	1.02		0.005	mg/L	1.00		102	85-115		
Silver	0.393		0.005	mg/L	0.400		98.2	85-115		
Arsenic	0.201		0.010	mg/L	0.200		101	85-115		
Calcium	11.4		0.05	mg/L	10.0		114	85-115		
Nickel	0.997		0.005	mg/L	1.00		99.7	85-112		
Lead	0.983		0.005	mg/L	1.00		98.3	85-115		
Antimony	1.07		0.005	mg/L	1.00		107	85-115		
Selenium	0.188		0.010	mg/L	0.200		94.0	85-115		
Zinc	1.06		0.020	mg/L	1.00		106	85-115		
Iron	11.2		0.050	mg/L	10.0		112	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0628 - Hot plate acid digestion waters										
Blank (B8L0628-BLK1)					Prepared & Analyzed: 12/14/18					
Mercury	ND		0.0002	mg/L						
LCS (B8L0628-BS1)					Prepared & Analyzed: 12/14/18					
Mercury	1.03			ug/l	1.00		103	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0784 - Purge-Trap										
Blank (B8L0784-BLK1)					Prepared & Analyzed: 12/19/18					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		15	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
<hr/>										
Surrogate: 4-Bromofluorobenzene			46.2	ug/l	50.0		92.4	70-130		
Surrogate: 1,2-Dichloroethane-d4			48.9	ug/l	50.0		97.8	70-130		
Surrogate: Toluene-d8			47.8	ug/l	50.0		95.6	70-130		
<hr/>										
LCS (B8L0784-BS1)					Prepared & Analyzed: 12/19/18					
Benzene	18			ug/l	20.0		90.2	65-135		
Toluene	18			ug/l	20.0		92.4	70-130		
Acetone	20			ug/l	20.0		101	70-130		
tert-Butyl alcohol	25			ug/l	20.0		125	70-130		
Total xylenes	61		1	ug/l				70-130		
o-Xylene	20			ug/l	20.0		102	70-130		
m&p-Xylene	40			ug/l	40.0		100	70-130		
tert-Amyl methyl ether	19			ug/l	20.0		93.8	70-130		
Ethylbenzene	21			ug/l	20.0		103	60-140		
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Surrogate: 4-Bromofluorobenzene			48.2	ug/l	50.0		96.5	70-130		
Surrogate: 1,2-Dichloroethane-d4			47.4	ug/l	50.0		94.8	70-130		
Surrogate: Toluene-d8			46.9	ug/l	50.0		93.8	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0720 - EPA 3580A										
Blank (B8L0720-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 12/18/18										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0500 - Sep-Funnel-extraction										
Blank (B8L0500-BLK1)					Prepared & Analyzed: 12/13/18					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		2	ug/l						
Benzo(a)pyrene	ND		2	ug/l						
Benzo(b)fluoranthene	ND		2	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		2	ug/l						
Chrysene	ND		2	ug/l						
Dibenz(a,h)anthracene	ND		2	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2	ug/l						
Naphthalene	ND		2	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
<hr/>										
Surrogate: Nitrobenzene-d5			27.6	ug/l	50.0		55.1	15-130		
Surrogate: p-Terphenyl-d14			27.1	ug/l	50.0		54.2	50-130		
Surrogate: 2-Fluorobiphenyl			25.0	ug/l	50.0		50.0	35-130		
Surrogate: Phenol-d6			7.71	ug/l	50.0		15.4	10-83		
Surrogate: 2,4,6-Tribromophenol			24.7	ug/l	50.0		49.5	44-120		
Surrogate: 2-Fluorophenol			12.3	ug/l	50.0		24.6	10-81		
<hr/>										
LCS (B8L0500-BS1)					Prepared & Analyzed: 12/13/18					
Phenol	16		2	ug/l	50.0		31.9	17-120		
Acenaphthene	43		2	ug/l	50.0		86.8	60-132		
Acenaphthylene	43		2	ug/l	50.0		86.7	54-126		
Anthracene	56		2	ug/l	50.0		113	43-120		
Benzo(a)anthracene	47		2	ug/l	50.0		93.6	42-133		
Benzo(a)pyrene	51		2	ug/l	50.0		103	32-148		
Benzo(b)fluoranthene	49		2	ug/l	50.0		98.3	42-140		
Benzo(g,h,i)perylene	53		2	ug/l	50.0		107	5-195		
Benzo(k)fluoranthene	51		2	ug/l	50.0		101	25-146		
Chrysene	46		2	ug/l	50.0		92.5	44-140		
Dibenz(a,h)anthracene	51		2	ug/l	50.0		101	5-200		
Fluoranthene	51		2	ug/l	50.0		101	43-121		
Fluorene	54		2	ug/l	50.0		107	70-120		
Indeno(1,2,3-cd)pyrene	51		2	ug/l	50.0		102	5-151		
Naphthalene	40		2	ug/l	50.0		79.3	36-120		
Phenanthrene	56		2	ug/l	50.0		112	65-120		
Pyrene	56		2	ug/l	50.0		111	70-120		
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Surrogate: Nitrobenzene-d5			47.1	ug/l	50.0		94.3	15-130		
Surrogate: p-Terphenyl-d14			46.7	ug/l	50.0		93.4	50-130		
Surrogate: 2-Fluorobiphenyl			43.7	ug/l	50.0		87.4	35-130		
Surrogate: Phenol-d6			15.4	ug/l	50.0		30.7	10-83		
Surrogate: 2,4,6-Tribromophenol			53.7	ug/l	50.0		107	44-120		
Surrogate: 2-Fluorophenol			24.8	ug/l	50.0		49.6	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.



NEW ENGLAND TESTING LABORATORY
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

PROJ. NO.	PROJECT NAME/LOCATION
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PROJECT NAME/LOCATION
236 Galem St., Needford, MA

Interactions Environmental

REPORT TO: Eric Andrews, Tenure

INVOICE TO: 150

SAMPLE I.D.

✓	12/11/18	9:00	✓
✓	12/11/18	8:28	✓

Influent
Effluent
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NO.
OF
CONTAIN

[illegible]

TESTS..

REMARKS

Sampled by: (Signature)

Date/Time

Received by: (Signature)

Date/Time

Laboratory Remarks:

Special Instructions:
List Specific Detection
Limit Requirements:

Turnaround (Business Days)

***Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amb. Nonpres
Chrysene	0.5	EPA 625	1 L Amb. Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amb. Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amb. Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amb. Nonpres
Napthalene	0.5	EPA 625	1 L Amb. Nonpres
TPH	5,000	EPA 1664A	1 L Amber H2SO4
Ethanol	400	1666, 1671, D3695	1 L Amber H2SO4
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL



New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 9A16016
Client Project: 236 Salem St, Medford, MA

Report Date: 24-January-2019

Prepared for:

Eric Andrews
Cooperstown Environmental
23 Main Street
Andover, MA 01810

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 01/16/19. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 9A16016. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
9A16016-01	Influent	Water	01/16/2019	01/16/2019
9A16016-02	Effluent	Water	01/16/2019	01/16/2019

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

Effluent (Lab Number: 9A16016-02)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel
 Oil & Grease, SGT
 pH
 Selenium
 Silver
 Total Residual Chlorine
 Total Suspended Solids
 Trivalent Chromium
 Volatile Organic Compounds
 Volatile Organic Compounds
 Zinc

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7
 EPA 1664A
 SM4500-H-B
 EPA 200.7
 EPA 200.7
 SM4500-CI-G
 SM2540-D
 Calculation
 EPA 524.2
 EPA 624.1
 EPA 200.7

Influent (Lab Number: 9A16016-01)**Analysis**

Acid Base/Neutral Extractables
 Ammonia
 Antimony
 Arsenic
 Cadmium
 Calcium
 Chloride
 Chromium
 Copper
 Cyanide
 Hexavalent Chromium
 Iron
 Lead
 Magnesium
 Mercury
 Methanol and Ethanol
 Nickel

Method

EPA 625.1
 SM4500-NH3-D
 EPA 200.7
 EPA 200.7
 EPA 200.7
 EPA 200.7
 SM3120-B
 SM4500CI-B
 EPA 6010C
 EPA 200.7
 SM4500-CN-E
 SM3500-Cr-B
 EPA 200.7
 EPA 200.7
 SM3120-B
 EPA 245.1
 EPA-8100-mod
 EPA 200.7

Request for Analysis (continued)

Influent (Lab Number: 9A16016-01) (continued)

Analysis

Oil & Grease, SGT
pH
Selenium
Silver
Total Residual Chlorine
Total Suspended Solids
Trivalent Chromium
Volatile Organic Compounds
Volatile Organic Compounds
Zinc

Method

EPA 1664A
SM4500-H-B
EPA 200.7
EPA 200.7
SM4500-CI-G
SM2540-D
Calculation
EPA 524.2
EPA 624.1
EPA 200.7

Method References

40 CFR Part 136, Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, Office of Federal Register National Archives and Records Administration

Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGTHEM; Non-polar), USEPA, 1999

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water, USEPA/EMSL, 1985

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: Influent
Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	01/17/19 12:14	01/18/19 12:31

Results: Calculation

Sample: Effluent
Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	ND		0.0150	mg/L	01/17/19 12:14	01/18/19 12:34

Results: General Chemistry**Sample: Influent****Lab Number: 9A16016-01 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	ND		0.1	mg/L	01/18/19	01/18/19
Chloride	424		10	mg/L	01/18/19	01/18/19
Cyanide	ND		0.01	mg/L	01/22/19	01/22/19
Hexavalent chromium	ND		0.01	mg/L	01/17/19 8:20	01/17/19 8:20
pH	6.4		0.1	SU	01/16/19 17:15	01/16/19 17:15
Oil & Grease SGT	ND		2	mg/L	01/23/19	01/23/19
Total Residual Chlorine	ND		0.01	mg/L	01/16/19 16:55	01/16/19 16:55
Total Suspended Solids	ND		2	mg/L	01/17/19	01/17/19

Results: General Chemistry**Sample: Effluent****Lab Number: 9A16016-02 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ammonia	ND		0.1	mg/L	01/18/19	01/18/19
Chloride	406		10	mg/L	01/18/19	01/18/19
Cyanide	ND		0.01	mg/L	01/22/19	01/22/19
Hexavalent chromium	ND		0.01	mg/L	01/17/19 8:20	01/17/19 8:20
pH	7.1		0.1	SU	01/16/19 17:15	01/16/19 17:15
Oil & Grease SGT	ND		2	mg/L	01/23/19	01/23/19
Total Residual Chlorine	ND		0.01	mg/L	01/16/19 16:55	01/16/19 16:55
Total Suspended Solids	ND		2	mg/L	01/17/19	01/17/19

Results: Total Metals

Sample: Influent

Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	100		0.125	mg/L	01/17/19	01/18/19
Antimony	0.012		0.005	mg/L	01/17/19	01/18/19
Arsenic	ND		0.010	mg/L	01/17/19	01/18/19
Cadmium	ND		0.004	mg/L	01/17/19	01/18/19
Calcium	32.6		0.05	mg/L	01/17/19	01/18/19
Chromium	ND		0.005	mg/L	01/17/19	01/18/19
Copper	ND		0.020	mg/L	01/17/19	01/18/19
Iron	0.238		0.050	mg/L	01/17/19	01/18/19
Lead	ND		0.005	mg/L	01/17/19	01/18/19
Magnesium	4.62		0.05	mg/L	01/17/19	01/18/19
Mercury	ND		0.0002	mg/L	01/18/19	01/18/19
Nickel	ND		0.005	mg/L	01/17/19	01/18/19
Selenium	ND		0.010	mg/L	01/17/19	01/18/19
Silver	ND		0.005	mg/L	01/17/19	01/18/19
Zinc	0.021		0.020	mg/L	01/17/19	01/18/19

Results: Total Metals

Sample: Effluent

Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Hardness	110		0.125	mg/L	01/17/19	01/18/19
Antimony	ND		0.005	mg/L	01/17/19	01/18/19
Arsenic	ND		0.010	mg/L	01/17/19	01/18/19
Cadmium	ND		0.004	mg/L	01/17/19	01/18/19
Calcium	36.5		0.05	mg/L	01/17/19	01/18/19
Chromium	ND		0.005	mg/L	01/17/19	01/18/19
Copper	ND		0.020	mg/L	01/17/19	01/18/19
Iron	ND		0.050	mg/L	01/17/19	01/18/19
Lead	ND		0.005	mg/L	01/17/19	01/18/19
Magnesium	4.63		0.05	mg/L	01/17/19	01/18/19
Mercury	ND		0.0002	mg/L	01/18/19	01/18/19
Nickel	ND		0.005	mg/L	01/17/19	01/18/19
Selenium	ND		0.010	mg/L	01/17/19	01/18/19
Silver	ND		0.005	mg/L	01/17/19	01/18/19
Zinc	ND		0.020	mg/L	01/17/19	01/18/19

Results: Volatile Organic Compounds

Sample: Influent

Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.5	ug/l	01/21/19	01/21/19
Acetone	ND		5.0	ug/l	01/21/19	01/21/19
tert-Amyl methyl ether	ND		0.5	ug/l	01/21/19	01/21/19
Benzene	ND		0.5	ug/l	01/21/19	01/21/19
Bromobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Bromochloromethane	ND		0.5	ug/l	01/21/19	01/21/19
Bromodichloromethane	ND		0.5	ug/l	01/21/19	01/21/19
Bromoform	ND		0.5	ug/l	01/21/19	01/21/19
Bromomethane	ND		0.5	ug/l	01/21/19	01/21/19
2-Butanone	ND		5.0	ug/l	01/21/19	01/21/19
tert-Butyl alcohol	ND		5.0	ug/l	01/21/19	01/21/19
tert-Butylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
n-Butylbenzene	0.6		0.5	ug/l	01/21/19	01/21/19
sec-Butylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
Carbon Disulfide	ND		0.5	ug/l	01/21/19	01/21/19
Carbon Tetrachloride	ND		0.5	ug/l	01/21/19	01/21/19
Chlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Chloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Chloroform	1.5		0.5	ug/l	01/21/19	01/21/19
Chloromethane	ND		0.5	ug/l	01/21/19	01/21/19
2-Chlorotoluene	ND		0.5	ug/l	01/21/19	01/21/19
4-Chlorotoluene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.5	ug/l	01/21/19	01/21/19
Dibromochloromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dibromoethane (EDB)	ND		0.5	ug/l	01/21/19	01/21/19
Dibromomethane	ND		0.5	ug/l	01/21/19	01/21/19
1,4-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Dichlorodifluoromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
cis-1,2-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
trans-1,2-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
2,2-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
trans-1,3-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
cis-1,3-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichloropropene (cis + trans)	ND		1.0	ug/l	01/21/19	01/21/19
Diisopropyl ether	ND		0.5	ug/l	01/21/19	01/21/19
Ethylbenzene	3.6		0.5	ug/l	01/21/19	01/21/19
Ethyl tert-butyl ether	ND		0.5	ug/l	01/21/19	01/21/19

Results: Volatile Organic Compounds (Continued)

Sample: Influent (Continued)

Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Hexachlorobutadiene	ND		0.5	ug/l	01/21/19	01/21/19
2-Hexanone	ND		5.0	ug/l	01/21/19	01/21/19
Isopropylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
p-Isopropyltoluene	ND		0.5	ug/l	01/21/19	01/21/19
Methylene Chloride	ND		0.5	ug/l	01/21/19	01/21/19
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	01/21/19	01/21/19
Naphthalene	1.5		0.5	ug/l	01/21/19	01/21/19
n-Propylbenzene	0.7		0.5	ug/l	01/21/19	01/21/19
Styrene	ND		0.5	ug/l	01/21/19	01/21/19
1,1,1,2-Tetrachloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1,2,2-Tetrachloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Tetrachloroethene	ND		0.5	ug/l	01/21/19	01/21/19
Tetrahydrofuran	ND		5.0	ug/l	01/21/19	01/21/19
Toluene	2.4		0.5	ug/l	01/21/19	01/21/19
1,2,4-Trichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,2,3-Trichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,1,1-Trichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1,2-Trichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Trichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
Trichlorofluoromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2,3-Trichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
1,2,4-Trimethylbenzene	9.6		0.5	ug/l	01/21/19	01/21/19
1,3,5-Trimethylbenzene	4.2		0.5	ug/l	01/21/19	01/21/19
Vinyl Chloride	ND		0.5	ug/l	01/21/19	01/21/19
m&p-Xylene	18.8		1.0	ug/l	01/21/19	01/21/19
o-Xylene	4.8		0.5	ug/l	01/21/19	01/21/19
Total xylenes	23.6		1.5	ug/l	01/21/19	01/21/19
4-Methyl-2-pentanone	ND		5.0	ug/l	01/21/19	01/21/19

Surrogate(s)	Recovery%	Limits		
<i>4-Bromofluorobenzene</i>	113%	70-130	01/21/19	01/21/19
<i>1,2-Dichlorobenzene-d4</i>	115%	70-130	01/21/19	01/21/19
Benzene	ND	1	ug/l	01/23/19
Toluene	3	1	ug/l	01/23/19
Acetone	ND	5	ug/l	01/23/19
tert-Butyl alcohol	ND	5	ug/l	01/23/19
Total xylenes	23	1	ug/l	01/23/19
o-Xylene	4	1	ug/l	01/23/19
m&p-Xylene	18	2	ug/l	01/23/19
tert-Amyl methyl ether	ND	1	ug/l	01/23/19
Ethylbenzene	4	1	ug/l	01/23/19

Surrogate(s)	Recovery%	Limits		
<i>4-Bromofluorobenzene</i>	98.8%	70-130	01/23/19	01/24/19
<i>1,2-Dichloroethane-d4</i>	99.9%	70-130	01/23/19	01/24/19
<i>Toluene-d8</i>	97.7%	70-130	01/23/19	01/24/19

Results: Volatile Organic Compounds

Sample: Effluent

Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.5	ug/l	01/21/19	01/21/19
Acetone	ND		5.0	ug/l	01/21/19	01/21/19
tert-Amyl methyl ether	ND		0.5	ug/l	01/21/19	01/21/19
Benzene	ND		0.5	ug/l	01/21/19	01/21/19
Bromobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Bromochloromethane	ND		0.5	ug/l	01/21/19	01/21/19
Bromodichloromethane	ND		0.5	ug/l	01/21/19	01/21/19
Bromoform	ND		0.5	ug/l	01/21/19	01/21/19
Bromomethane	ND		0.5	ug/l	01/21/19	01/21/19
2-Butanone	ND		5.0	ug/l	01/21/19	01/21/19
tert-Butyl alcohol	ND		5.0	ug/l	01/21/19	01/21/19
tert-Butylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
n-Butylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
sec-Butylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
Carbon Disulfide	ND		0.5	ug/l	01/21/19	01/21/19
Carbon Tetrachloride	ND		0.5	ug/l	01/21/19	01/21/19
Chlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Chloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Chloroform	ND		0.5	ug/l	01/21/19	01/21/19
Chloromethane	ND		0.5	ug/l	01/21/19	01/21/19
2-Chlorotoluene	ND		0.5	ug/l	01/21/19	01/21/19
4-Chlorotoluene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dibromo-3-chloropropane (DBCP)	ND		0.5	ug/l	01/21/19	01/21/19
Dibromochloromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dibromoethane (EDB)	ND		0.5	ug/l	01/21/19	01/21/19
Dibromomethane	ND		0.5	ug/l	01/21/19	01/21/19
1,4-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
Dichlorodifluoromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
cis-1,2-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
trans-1,2-Dichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
1,2-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
2,2-Dichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
trans-1,3-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
1,1-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
cis-1,3-Dichloropropene	ND		0.5	ug/l	01/21/19	01/21/19
1,3-Dichloropropene (cis + trans)	ND		1.0	ug/l	01/21/19	01/21/19
Diisopropyl ether	ND		0.5	ug/l	01/21/19	01/21/19
Ethylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
Ethyl tert-butyl ether	ND		0.5	ug/l	01/21/19	01/21/19

Results: Volatile Organic Compounds (Continued)

Sample: Effluent (Continued)

Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Hexachlorobutadiene	ND		0.5	ug/l	01/21/19	01/21/19
2-Hexanone	ND		5.0	ug/l	01/21/19	01/21/19
Isopropylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
p-Isopropyltoluene	ND		0.5	ug/l	01/21/19	01/21/19
Methylene Chloride	ND		0.5	ug/l	01/21/19	01/21/19
Methyl t-butyl ether (MTBE)	ND		0.5	ug/l	01/21/19	01/21/19
Naphthalene	ND		0.5	ug/l	01/21/19	01/21/19
n-Propylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
Styrene	ND		0.5	ug/l	01/21/19	01/21/19
1,1,1,2-Tetrachloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1,2,2-Tetrachloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Tetrachloroethene	ND		0.5	ug/l	01/21/19	01/21/19
Tetrahydrofuran	ND		5.0	ug/l	01/21/19	01/21/19
Toluene	ND		0.5	ug/l	01/21/19	01/21/19
1,2,4-Trichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,2,3-Trichlorobenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,1,1-Trichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
1,1,2-Trichloroethane	ND		0.5	ug/l	01/21/19	01/21/19
Trichloroethene	ND		0.5	ug/l	01/21/19	01/21/19
Trichlorofluoromethane	ND		0.5	ug/l	01/21/19	01/21/19
1,2,3-Trichloropropane	ND		0.5	ug/l	01/21/19	01/21/19
1,2,4-Trimethylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
1,3,5-Trimethylbenzene	ND		0.5	ug/l	01/21/19	01/21/19
Vinyl Chloride	ND		0.5	ug/l	01/21/19	01/21/19
m&p-Xylene	ND		1.0	ug/l	01/21/19	01/21/19
o-Xylene	ND		0.5	ug/l	01/21/19	01/21/19
Total xylenes	ND		1.5	ug/l	01/21/19	01/21/19
4-Methyl-2-pentanone	ND		5.0	ug/l	01/21/19	01/21/19

Surrogate(s)	Recovery%	Limits		
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4-Bromofluorobenzene	95.4%	70-130		01/21/19 01/21/19
1,2-Dichlorobenzene-d4	104%	70-130		01/21/19 01/21/19
Benzene	ND	1	ug/l	01/23/19 01/24/19
Toluene	ND	1	ug/l	01/23/19 01/24/19
Acetone	ND	5	ug/l	01/23/19 01/24/19
tert-Butyl alcohol	ND	5	ug/l	01/23/19 01/24/19
Total xylenes	ND	1	ug/l	01/23/19 01/24/19
o-Xylene	ND	1	ug/l	01/23/19 01/24/19
m&p-Xylene	ND	2	ug/l	01/23/19 01/24/19
tert-Amyl methyl ether	ND	1	ug/l	01/23/19 01/24/19
Ethylbenzene	ND	1	ug/l	01/23/19 01/24/19

Surrogate(s)	Recovery%	Limits		
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4-Bromofluorobenzene	94.0%	70-130		01/23/19 01/24/19
1,2-Dichloroethane-d4	109%	70-130		01/23/19 01/24/19
Toluene-d8	97.6%	70-130		01/23/19 01/24/19

Results: Semivolatile organic compounds

Sample: Influent
Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	01/22/19	01/22/19

Results: Semivolatile organic compounds

Sample: Effluent
Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Ethanol	ND		10	mg/L	01/22/19	01/22/19

Results: Base/Neutral & Acid Extractables

Sample: Influent

Lab Number: 9A16016-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	01/21/19	01/23/19
Acenaphthene	ND		2	ug/l	01/21/19	01/23/19
Acenaphthylene	ND		2	ug/l	01/21/19	01/23/19
Anthracene	ND		2	ug/l	01/21/19	01/23/19
Benzo(a)anthracene	ND		2	ug/l	01/21/19	01/23/19
Benzo(a)pyrene	ND		2	ug/l	01/21/19	01/23/19
Benzo(b)fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Benzo(g,h,i)perylene	ND		2	ug/l	01/21/19	01/23/19
Benzo(k)fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Chrysene	ND		2	ug/l	01/21/19	01/23/19
Dibenz(a,h)anthracene	ND		2	ug/l	01/21/19	01/23/19
Fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Fluorene	ND		2	ug/l	01/21/19	01/23/19
Indeno(1,2,3-cd)pyrene	ND		2	ug/l	01/21/19	01/23/19
Naphthalene	ND		2	ug/l	01/21/19	01/23/19
Phenanthrene	ND		2	ug/l	01/21/19	01/23/19
Pyrene	ND		2	ug/l	01/21/19	01/23/19
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	80.5%		15-130		01/21/19	01/23/19
<i>p-Terphenyl-d14</i>	82.3%		50-130		01/21/19	01/23/19
<i>2-Fluorobiphenyl</i>	79.8%		35-130		01/21/19	01/23/19
<i>Phenol-d6</i>	19.8%		10-83		01/21/19	01/23/19
<i>2,4,6-Tribromophenol</i>	99.0%		44-120		01/21/19	01/23/19
<i>2-Fluorophenol</i>	26.7%		10-81		01/21/19	01/23/19

Results: Base/Neutral & Acid Extractables

Sample: Effluent

Lab Number: 9A16016-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Phenol	ND		2	ug/l	01/21/19	01/23/19
Acenaphthene	ND		2	ug/l	01/21/19	01/23/19
Acenaphthylene	ND		2	ug/l	01/21/19	01/23/19
Anthracene	ND		2	ug/l	01/21/19	01/23/19
Benzo(a)anthracene	ND		2	ug/l	01/21/19	01/23/19
Benzo(a)pyrene	ND		2	ug/l	01/21/19	01/23/19
Benzo(b)fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Benzo(g,h,i)perylene	ND		2	ug/l	01/21/19	01/23/19
Benzo(k)fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Chrysene	ND		2	ug/l	01/21/19	01/23/19
Dibenz(a,h)anthracene	ND		2	ug/l	01/21/19	01/23/19
Fluoranthene	ND		2	ug/l	01/21/19	01/23/19
Fluorene	ND		2	ug/l	01/21/19	01/23/19
Indeno(1,2,3-cd)pyrene	ND		2	ug/l	01/21/19	01/23/19
Naphthalene	ND		2	ug/l	01/21/19	01/23/19
Phenanthrene	ND		2	ug/l	01/21/19	01/23/19
Pyrene	ND		2	ug/l	01/21/19	01/23/19
Surrogate(s)	Recovery%		Limits			
<i>Nitrobenzene-d5</i>	69.4%		15-130		01/21/19	01/23/19
<i>p-Terphenyl-d14</i>	73.1%		50-130		01/21/19	01/23/19
<i>2-Fluorobiphenyl</i>	68.9%		35-130		01/21/19	01/23/19
<i>Phenol-d6</i>	15.9%		10-83		01/21/19	01/23/19
<i>2,4,6-Tribromophenol</i>	86.0%		44-120		01/21/19	01/23/19
<i>2-Fluorophenol</i>	22.5%		10-81		01/21/19	01/23/19

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0679 - pH										
LCS (B9A0679-BS1)					Prepared & Analyzed: 01/16/19					
pH	7.1		0.1	SU	7.00		101	90-110		
LCS (B9A0679-BS2)					Prepared & Analyzed: 01/16/19					
pH	7.1		0.1	SU	7.00		101	90-110		
Duplicate (B9A0679-DUP1)			Source: 9A16004-03		Prepared & Analyzed: 01/16/19					
pH	6.7		0.1	SU	6.7				0.00	20
Batch: B9A0697 - Hexavalent Chrome										
Blank (B9A0697-BLK1)					Prepared & Analyzed: 01/17/19					
Hexavalent chromium	ND		0.01	mg/L						
Blank (B9A0697-BLK2)					Prepared & Analyzed: 01/17/19					
Hexavalent chromium	ND		0.01	mg/L						
LCS (B9A0697-BS1)					Prepared & Analyzed: 01/17/19					
Hexavalent chromium	0.50		0.01	mg/L	0.500		99.2	90-110		
LCS (B9A0697-BS2)					Prepared & Analyzed: 01/17/19					
Hexavalent chromium	0.10		0.01	mg/L	0.100		95.0	90-110		
LCS (B9A0697-BS3)					Prepared & Analyzed: 01/17/19					
Hexavalent chromium	0.47		0.01	mg/L	0.500		93.6	90-110		
Duplicate (B9A0697-DUP1)			Source: 9A16016-02		Prepared & Analyzed: 01/17/19					
Hexavalent chromium	ND		0.01	mg/L	ND					20

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0697 - Hexavalent Chrome (Continued)										
Matrix Spike (B9A0697-MS1)		Source: 9A16016-02			Prepared & Analyzed: 01/17/19					
Hexavalent chromium	0.47		0.01	mg/L	0.500	ND	93.8	80-120		
Batch: B9A0699 - Residual chlorine										
Blank (B9A0699-BLK1)					Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	ND		0.01	mg/L						
Blank (B9A0699-BLK2)					Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	ND		0.01	mg/L						
LCS (B9A0699-BS1)					Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	0.45		0.01	mg/L	0.500		90.2	90-110		
LCS (B9A0699-BS2)					Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	0.47		0.01	mg/L	0.500		94.8	90-110		
Duplicate (B9A0699-DUP1)		Source: 9A16016-01			Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	ND		0.01	mg/L		ND				20
Matrix Spike (B9A0699-MS1)		Source: 9A16016-01			Prepared & Analyzed: 01/16/19					
Total Residual Chlorine	0.28		0.01	mg/L	0.500	ND	55.4	80-120		
Batch: B9A0712 - TSS										
Blank (B9A0712-BLK1)					Prepared & Analyzed: 01/17/19					
Total Suspended Solids	ND		2	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0712 - TSS (Continued)										
LCS (B9A0712-BS1)					Prepared & Analyzed: 01/17/19					
Total Suspended Solids	958		10	mg/L	1000		95.8	90-110		
Duplicate (B9A0712-DUP1)					Prepared & Analyzed: 01/17/19					
Total Suspended Solids	66		10	mg/L	80				19.2	20
Batch: B9A0758 - Chloride										
Blank (B9A0758-BLK1)					Prepared & Analyzed: 01/18/19					
Chloride	ND		1	mg/L						
LCS (B9A0758-BS1)					Prepared & Analyzed: 01/18/19					
Chloride	63		1	mg/L	60.6		104	90-110		
Duplicate (B9A0758-DUP1)					Prepared & Analyzed: 01/18/19					
Chloride	434		10	mg/L	424				2.20	20
Matrix Spike (B9A0758-MS1)					Prepared & Analyzed: 01/18/19					
Chloride	481		10	mg/L	60.6	424	93.4	80-120		
Batch: B9A0773 - Ammonia										
Blank (B9A0773-BLK1)					Prepared & Analyzed: 01/18/19					
Ammonia	ND		0.1	mg/L						
Blank (B9A0773-BLK2)					Prepared & Analyzed: 01/18/19					
Ammonia	ND		0.1	mg/L						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0773 - Ammonia (Continued)										
LCS (B9A0773-BS1)					Prepared & Analyzed: 01/18/19					
Ammonia	1.0		0.1	mg/L	1.00		105	90-110		
LCS (B9A0773-BS2)					Prepared & Analyzed: 01/18/19					
Ammonia	1.0		0.1	mg/L	1.00		99.5	90-110		
Duplicate (B9A0773-DUP1)					Source: 9A16006-01		Prepared & Analyzed: 01/18/19			
Ammonia	ND		0.1	mg/L		ND				20
Matrix Spike (B9A0773-MS1)					Source: 9A16006-01		Prepared & Analyzed: 01/18/19			
Ammonia	1.0		0.1	mg/L	1.00	ND	102	80-120		
Batch: B9A0866 - Cyanide										
Blank (B9A0866-BLK1)					Prepared & Analyzed: 01/22/19					
Cyanide	ND		0.01	mg/L						
Blank (B9A0866-BLK2)					Prepared & Analyzed: 01/22/19					
Cyanide	ND		0.01	mg/L						
LCS (B9A0866-BS1)					Prepared & Analyzed: 01/22/19					
Cyanide	0.11		0.01	mg/L	0.100		108	90-110		
LCS (B9A0866-BS2)					Prepared & Analyzed: 01/22/19					
Cyanide	0.09		0.01	mg/L	0.100		93.0	90-110		
LCS (B9A0866-BS3)					Prepared & Analyzed: 01/22/19					
Cyanide	0.11		0.01	mg/L	0.100		106	90-110		

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0866 - Cyanide (Continued)										
Duplicate (B9A0866-DUP1)			Source: 9A15010-01		Prepared & Analyzed: 01/22/19					
Cyanide	ND		0.01	mg/L		ND				200
Matrix Spike (B9A0866-MS1)			Source: 9A15010-01		Prepared & Analyzed: 01/22/19					
Cyanide	0.08		0.01	mg/L	0.100	ND	82.0	80-120		
Batch: B9A0889 - Oil & Grease										
Blank (B9A0889-BLK1)					Prepared & Analyzed: 01/23/19					
Oil & Grease SGT	ND		2	mg/L						
LCS (B9A0889-BS1)					Prepared & Analyzed: 01/23/19					
Oil & Grease SGT	21		2	mg/L	20.0		106	64-132		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0691 - Hot plate acid digestion waters										
Blank (B9A0691-BLK1)					Prepared: 01/17/19 Analyzed: 01/18/19					
Zinc	ND		0.020	mg/L						
Lead	ND		0.005	mg/L						
Iron	ND		0.050	mg/L						
Copper	ND		0.020	mg/L						
Antimony	ND		0.005	mg/L						
Selenium	ND		0.010	mg/L						
Arsenic	ND		0.010	mg/L						
Silver	ND		0.005	mg/L						
Nickel	ND		0.005	mg/L						
Chromium	ND		0.005	mg/L						
Magnesium	ND		0.05	mg/L						
Calcium	ND		0.05	mg/L						
Cadmium	ND		0.004	mg/L						
LCS (B9A0691-BS1)					Prepared: 01/17/19 Analyzed: 01/18/19					
Antimony	1.11		0.005	mg/L	1.00		111	85-115		
Zinc	1.12		0.020	mg/L	1.00		112	85-115		
Lead	1.03		0.005	mg/L	1.00		103	85-115		
Selenium	0.201		0.010	mg/L	0.200		101	85-115		
Chromium	1.04		0.005	mg/L	1.00		104	85-115		
Nickel	1.03		0.005	mg/L	1.00		103	85-112		
Cadmium	1.04		0.004	mg/L	1.00		104	85-114		
Magnesium	9.87		0.05	mg/L	10.0		98.7	85-115		
Silver	0.453		0.005	mg/L	0.400		113	85-115		
Arsenic	0.212		0.010	mg/L	0.200		106	85-115		
Copper	1.05		0.020	mg/L	1.00		105	85-115		
Iron	9.83		0.050	mg/L	10.0		98.3	85-115		
Calcium	10.5		0.05	mg/L	10.0		105	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	RPD Limit
Batch: B9A0761 - Hot plate acid digestion waters										
Blank (B9A0761-BLK1)					Prepared & Analyzed: 01/18/19					
Mercury	ND		0.0002	mg/L						
LCS (B9A0761-BS1)					Prepared & Analyzed: 01/18/19					
Mercury	0.993			ug/l	1.00		99.3	85-115		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0914 - Purge-Trap										
Blank (B9A0914-BLK1)					Prepared & Analyzed: 01/23/19					
Benzene	ND		1	ug/l						
Toluene	ND		1	ug/l						
Acetone	ND		5	ug/l						
tert-Butyl alcohol	ND		5	ug/l						
Total xylenes	ND		1	ug/l						
o-Xylene	ND		1	ug/l						
m&p-Xylene	ND		2	ug/l						
tert-Amyl methyl ether	ND		1	ug/l						
Ethylbenzene	ND		1	ug/l						
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Surrogate: 4-Bromofluorobenzene			47.2	ug/l	50.0		94.5	70-130		
Surrogate: 1,2-Dichloroethane-d4			51.2	ug/l	50.0		102	70-130		
Surrogate: Toluene-d8			47.0	ug/l	50.0		93.9	70-130		
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LCS (B9A0914-BS1)					Prepared & Analyzed: 01/23/19					
Benzene	20			ug/l	20.0		99.9	65-135		
Toluene	20			ug/l	20.0		101	70-130		
Acetone	14			ug/l	20.0		70.2	70-130		
tert-Butyl alcohol	20			ug/l	20.0		100	70-130		
Total xylenes	59		1	ug/l				70-130		
o-Xylene	19			ug/l	20.0		97.4	70-130		
m&p-Xylene	39			ug/l	40.0		98.4	70-130		
tert-Amyl methyl ether	19			ug/l	20.0		92.9	70-130		
Ethylbenzene	19			ug/l	20.0		95.2	60-140		
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Surrogate: 4-Bromofluorobenzene			50.5	ug/l	50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4			53.4	ug/l	50.0		107	70-130		
Surrogate: Toluene-d8			50.9	ug/l	50.0		102	70-130		

Quality Control
(Continued)

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0836 - EPA 3580A										
Blank (B9A0836-BLK1)										
Ethanol	ND		10	mg/L						
Prepared & Analyzed: 01/22/19										

Quality Control
(Continued)

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0788 - Sep-Funnel-extraction										
Blank (B9A0788-BLK1)				Prepared: 01/21/19 Analyzed: 01/23/19						
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		2	ug/l						
Benzo(a)pyrene	ND		2	ug/l						
Benzo(b)fluoranthene	ND		2	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		2	ug/l						
Chrysene	ND		2	ug/l						
Dibenz(a,h)anthracene	ND		2	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2	ug/l						
Naphthalene	ND		2	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			34.6	ug/l	50.0		69.3	15-130		
Surrogate: p-Terphenyl-d14			34.6	ug/l	50.0		69.2	50-130		
Surrogate: 2-Fluorobiphenyl			35.0	ug/l	50.0		70.0	35-130		
Surrogate: Phenol-d6			8.64	ug/l	50.0		17.3	10-83		
Surrogate: 2,4,6-Tribromophenol			40.2	ug/l	50.0		80.3	44-120		
Surrogate: 2-Fluorophenol			12.0	ug/l	50.0		24.1	10-81		
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LCS (B9A0788-BS1)				Prepared: 01/21/19 Analyzed: 01/23/19						
Phenol	12		2	ug/l	50.0		24.6	17-120		
Acenaphthene	47		2	ug/l	50.0		94.1	60-132		
Acenaphthylene	49		2	ug/l	50.0		98.5	54-126		
Anthracene	52		2	ug/l	50.0		105	43-120		
Benzo(a)anthracene	54		2	ug/l	50.0		107	42-133		
Benzo(a)pyrene	58		2	ug/l	50.0		117	32-148		
Benzo(b)fluoranthene	56		2	ug/l	50.0		111	42-140		
Benzo(g,h,i)perylene	62		2	ug/l	50.0		123	5-195		
Benzo(k)fluoranthene	55		2	ug/l	50.0		111	25-146		
Chrysene	53		2	ug/l	50.0		107	44-140		
Dibenz(a,h)anthracene	60		2	ug/l	50.0		120	5-200		
Fluoranthene	54		2	ug/l	50.0		108	43-121		
Fluorene	52		2	ug/l	50.0		105	70-120		
Indeno(1,2,3-cd)pyrene	62		2	ug/l	50.0		124	5-151		
Naphthalene	48		2	ug/l	50.0		95.6	36-120		
Phenanthrene	51		2	ug/l	50.0		102	65-120		
Pyrene	49		2	ug/l	50.0		98.6	70-120		
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Surrogate: Nitrobenzene-d5			37.6	ug/l	50.0		75.1	15-130		
Surrogate: p-Terphenyl-d14			39.2	ug/l	50.0		78.4	50-130		
Surrogate: 2-Fluorobiphenyl			37.6	ug/l	50.0		75.2	35-130		
Surrogate: Phenol-d6			9.07	ug/l	50.0		18.1	10-83		
Surrogate: 2,4,6-Tribromophenol			46.6	ug/l	50.0		93.2	44-120		
Surrogate: 2-Fluorophenol			15.2	ug/l	50.0		30.4	10-81		

Quality Control (Continued)

Base/Neutral & Acid Extractables (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0788 - Sep-Funnel-extraction (Continued)										
Leach Fluid Blank (B9A0788-LBK1)					Prepared: 01/21/19 Analyzed: 01/23/19					
Phenol	ND		2	ug/l						
Acenaphthene	ND		2	ug/l						
Acenaphthylene	ND		2	ug/l						
Anthracene	ND		2	ug/l						
Benzo(a)anthracene	ND		2	ug/l						
Benzo(a)pyrene	ND		2	ug/l						
Benzo(b)fluoranthene	ND		2	ug/l						
Benzo(g,h,i)perylene	ND		2	ug/l						
Benzo(k)fluoranthene	ND		2	ug/l						
Chrysene	ND		2	ug/l						
Dibenz(a,h)anthracene	ND		2	ug/l						
Fluoranthene	ND		2	ug/l						
Fluorene	ND		2	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2	ug/l						
Naphthalene	ND		2	ug/l						
Phenanthrene	ND		2	ug/l						
Pyrene	ND		2	ug/l						
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Surrogate: Nitrobenzene-d5			39.4	ug/l	50.0		78.8	15-130		
Surrogate: p-Terphenyl-d14			36.9	ug/l	50.0		73.9	50-130		
Surrogate: 2-Fluorobiphenyl			38.4	ug/l	50.0		76.8	35-130		
Surrogate: Phenol-d6			9.89	ug/l	50.0		19.8	10-83		
Surrogate: 2,4,6-Tribromophenol			46.6	ug/l	50.0		93.3	44-120		
Surrogate: 2-Fluorophenol			14.2	ug/l	50.0		28.3	10-81		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

Parameter	Applicable D.L. (ug/L)	NETLAB Method	Bottles Needed
Ammonia	100	SM4500-NH3-D	500 ml H2SO4
Chloride	230,000	SM 4500-CL B	250 ml P
Total Residual Chlorine	50	SM4500-CL-G	250 ml P
Total Suspended Solids	30,000	SM2540-D	250 ml P
Antimony	20	EPA 200.7	250 ml P HNO3
Arsenic	20	EPA 200.7	250 ml P HNO3
Cadmium	10	EPA 200.7	250 ml P HNO3
Chromium III	100	EPA6010C	250 ml P HNO3
Chromium VI	50	3500-CR B	250 ml P HNO3
Copper	3.7	EPA 200.7	250 ml P HNO3
Iron	40	EPA 200.7	250 ml P HNO3
Lead	20	EPA 200.7	250 ml P HNO3
Mercury	0.2	EPA 245.1	250 ml P HNO3
Nickel	20	EPA 200.7	250 ml P HNO3
Selenium	40	EPA 200.7	250 ml P HNO3
Silver	10	EPA 200.7	250 ml P HNO3
Zinc	15	EPA 200.7	250 ml P HNO3
Cyanide	5	4500 CN-E	250 ml P NaOH
Total BTEX	1 or 2	EPA 624	40 ml Vial HCL
Benzene	2	EPA 624	40 ml Vial HCL
Total Group I Polycyclic Aromatic Hydrocarbons	0.5	EPA 625	1 L Amber Nonpres
Benzo(a)anthracene	0.5	EPA 625	1 L Amber Nonpres
Benzo(a)pyrene	0.5	EPA 625	1 L Amber Nonpres
Benzo(b)fluoranthene	0.5	EPA 625	1 L Amber Nonpres
Benzo(k)fluoranthene	0.5	EPA 625	1 L Amber Nonpres
Chrysene	0.5	EPA 625	1 L Amber Nonpres
Dibenzo(a,h)anthracene	0.5	EPA 625	1 L Amber Nonpres
Indeno(1,2,3-cd)pyrene	0.5	EPA 625	1 L Amber Nonpres
Total Group II PAHs	5-2.5	EPA 625	1 L Amber Nonpres
Napthalene	0.5	EPA 625	1 L Amber Nonpres
TPH	5,000	EPA 1664A	1 L Amber H2SO4
Ethanol	400	1666, 1671, D3695	1 L Amber H2SO4
Methyl-tert-Butyl Ether	20	524.2	40 ml Vial HCL
tert-Butyl Alcohol	10	EPA 624	40 ml Vial HCL
tert-Amyl Methyl Ether	10	EPA 624	40 ml Vial HCL

Enter number values in green boxes below

Enter values in the units specified

↓

2.288	Q _R = Enter upstream flow in MGD
0.1224	Q _P = Enter discharge flow in MGD
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

0

Enter values in the units specified

↓

367	C _d = Enter influent hardness in mg/L CaCO ₃
144	C _s = Enter receiving water hardness in mg/L CaCO ₃

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

↓

7.5	pH in Standard Units
25.55	Temperature in °C
0	Ammonia in mg/L
144	Hardness in mg/L CaCO ₃
0	Salinity in ppt
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
7	Copper in µg/L
5.58	Iron in µg/L
0	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0.1	Silver in µg/L
33	Zinc in µg/L

Enter **influent** concentrations in the units specified

↓

40	TRC in µg/L
0.2	Ammonia in mg/L
0	Antimony in µg/L
0	Arsenic in µg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
9	Copper in µg/L
1740	Iron in µg/L
9	Lead in µg/L
0	Mercury in µg/L
0	Nickel in µg/L
0	Selenium in µg/L
0	Silver in µg/L
26	Zinc in µg/L
0	Cyanide in µg/L
0	Phenol in µg/L
0	Carbon Tetrachloride in µg/L
0	Tetrachloroethylene in µg/L
0	Total Phthalates in µg/L
0	Diethylhexylphthalate in µg/L
0	Benzo(a)anthracene in µg/L
0	Benzo(a)pyrene in µg/L
0	Benzo(b)fluoranthene in µg/L
0	Benzo(k)fluoranthene in µg/L
0	Chrysene in µg/L
0	Dibenzo(a,h)anthracene in µg/L
0	Indeno(1,2,3-cd)pyrene in µg/L
0	Methyl-tert butyl ether in µg/L

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved

Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry

Discharge flow is equal to the design flow or 1 MGD, whichever is less

Only if approved by State as the entry for Q_R; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State

Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges

Hardness required for freshwater

Salinity required for saltwater (estuarine and marine)

Metals required for all discharges if present and if dilution factor is > 1

Enter 0 if non-detect or testing not required

if >1 sample, enter maximum

if >10 samples, may enter 95th percentile

Enter 0 if non-detect or testing not required

I. Dilution Factor Calculation Method

A. 7Q10

Refer to Appendix V for determining critical low flow; must be approved by State before use in calculations.

B. Dilution Factor

Calculated as follows:

$$Df = \frac{Q_R + Q_P}{Q_P}$$

$$Q_P$$

$$Q_R = 7Q10 \text{ in MGD}$$

$$Q_P = \text{Discharge flow, in MGD}$$

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

$$Q_r$$

$$C_r = \text{Downstream hardness in mg/L}$$

$$Q_d = \text{Discharge flow in MGD}$$

$$C_d = \text{Discharge hardness in mg/L}$$

$$Q_s = \text{Upstream flow (7Q10) in MGD}$$

$$C_s = \text{Upstream (receiving water) hardness in mg/L}$$

$$Q_r = \text{Downstream receiving water flow in MGD}$$

Step 2. Total recoverable water quality criteria for hardness-dependent metals, calculated as follows:

$$\text{Total Recoverable Criteria} = \exp \{m_c [\ln(h)] + b_c\}$$

$$m_c = \text{Pollutant-specific coefficient (} m_a \text{ for silver)}$$

$$b_c = \text{Pollutant-specific coefficient (} b_a \text{ for silver)}$$

$$\ln = \text{Natural logarithm}$$

$$h = \text{Hardness calculated in Step 1}$$

Step 3. Total recoverable water quality criteria for non-hardness-dependent metals, calculated as follows:

$$\text{WQC in } \mu\text{g/L} = \frac{\text{dissolved WQC in } \mu\text{g/L}}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in $\mu\text{g/L}$

Q_d = Discharge flow in MGD

C_d = WQBEL in $\mu\text{g/L}$

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in $\mu\text{g/L}$

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in $\mu\text{g/L}$

Q_d = Discharge flow in MGD

Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as fc

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream concentration in µg/L

Q_d = Discharge flow in MGD

C_d = Influent concentration in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1 and the discharge concentration of a parameter are greater than the WQC for that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL

of the RGP for that parameter applies.

Step 2. For a parameter not sampled in or not detected in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;

AND

2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the

Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor	19.7					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	Report	mg/L	---			
Chloride	Report	µg/L	---			
Total Residual Chlorine	0.2	mg/L	217	µg/L	---	µg/L
Total Suspended Solids	30	mg/L	---			
Antimony	206	µg/L	12603	µg/L		
Arsenic	104	µg/L	197	µg/L		
Cadmium	10.2	µg/L	7.3852	µg/L		
Chromium III	323	µg/L	2434.1	µg/L		
Chromium VI	323	µg/L	225.2	µg/L		
Copper	242	µg/L	136.8	µg/L		
Iron	5000	µg/L	19589	µg/L		
Lead	160	µg/L	109.75	µg/L		
Mercury	0.739	µg/L	17.84	µg/L		
Nickel	1450	µg/L	1490.9	µg/L		
Selenium	235.8	µg/L	98.5	µg/L		
Silver	35.1	µg/L	157.1	µg/L		
Zinc	420	µg/L	2809.7	µg/L		
Cyanide	178	mg/L	102.4	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	100	µg/L	---			
Benzene	5.0	µg/L	---			
1,4 Dioxane	200	µg/L	---			
Acetone	7970	µg/L	---			
Phenol	1,080	µg/L	5908	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	4.4	µg/L	31.5	µg/L		
1,2 Dichlorobenzene	600	µg/L	---			
1,3 Dichlorobenzene	320	µg/L	---			
1,4 Dichlorobenzene	5.0	µg/L	---			
Total dichlorobenzene	---	µg/L	---			
1,1 Dichloroethane	70	µg/L	---			
1,2 Dichloroethane	5.0	µg/L	---			
1,1 Dichloroethylene	3.2	µg/L	---			
Ethylene Dibromide	0.05	µg/L	---			
Methylene Chloride	4.6	µg/L	---			
1,1,1 Trichloroethane	200	µg/L	---			
1,1,2 Trichloroethane	5.0	µg/L	---			
Trichloroethylene	5.0	µg/L	---			
Tetrachloroethylene	5.0	µg/L	65.0	µg/L		
cis-1,2 Dichloroethylene	70	µg/L	---			
Vinyl Chloride	2.0	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	190	µg/L	---	µg/L		
Diethylhexyl phthalate	101	µg/L	43.3	µg/L		

Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---			
Benzo(a)anthracene	1.0	µg/L	0.0748	µg/L	---	µg/L
Benzo(a)pyrene	1.0	µg/L	0.0748	µg/L	---	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.0748	µg/L	---	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.0748	µg/L	---	µg/L
Chrysene	1.0	µg/L	0.0748	µg/L	---	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.0748	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0748	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	100	µg/L	---			
Naphthalene	20	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	0.000064	µg/L	---		0.5	µg/L
Pentachlorophenol	1.0	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	5.0	mg/L	---			
Ethanol	Report	mg/L	---			
Methyl-tert-Butyl Ether	70	µg/L	394	µg/L		
tert-Butyl Alcohol	120	µg/L	---			
tert-Amyl Methyl Ether	90	µg/L	---			

I. Dilution Factor Calculation Method

A. 7Q10

No flow assumed at critical low flow for saltwater unless otherwise approved by the State

B. Dilution Factor

No dilution assumed for saltwater, unless otherwise approved by the State

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Not applicable to saltwater

Step 2. Not applicable to saltwater

Step 3. Total recoverable water quality criteria for dissolved metals, calculated as follows:

$$\text{WQC in } \mu\text{g/L} = \frac{\text{dissolved WQC in } \mu\text{g/L}}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in $\mu\text{g/L}$

Q_d = Discharge flow in MGD

C_d = WQBEL in $\mu\text{g/L}$

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in $\mu\text{g/L}$

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in $\mu\text{g/L}$

Q_d = Discharge flow in MGD

Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream concentration in $\mu\text{g/L}$

Q_d = Discharge flow in MGD

C_d = Influent concentration in $\mu\text{g/L}$

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) concentration in $\mu\text{g/L}$

Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1 and the discharge concentration of a parameter is greater than the WQC calculated for that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, above is greater than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL of the RGP for that parameter applies.

Step 2. For a parameter not detected in or not sampled in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;

AND

2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is greater than the TBEL of the RGP for that parameter.

less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, 1
Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor

0.0

A. Inorganics

TBEL applies if bolded

WQBEL applies if bolded

Ammonia	Report	mg/L	---	
Chloride	Report	µg/L	---	
Total Residual Chlorine	0.2	mg/L	147.7	µg/L
Total Suspended Solids	30	mg/L	---	
Antimony	206	µg/L	12603	µg/L
Arsenic	104	µg/L	709	µg/L
Cadmium	10.2	µg/L	174.3	µg/L
Chromium III	323	µg/L	1969.3	µg/L
Chromium VI	323	µg/L	992	µg/L
Copper	242	µg/L	3.7	µg/L
Iron	5000	µg/L	---	µg/L
Lead	160	µg/L	167.7	µg/L
Mercury	0.739	µg/L	21.78	µg/L
Nickel	1450	µg/L	163.1	µg/L
Selenium	235.8	µg/L	1401	µg/L
Silver	35.1	µg/L	42.1	µg/L
Zinc	420	µg/L	1069	µg/L
Cyanide	178	mg/L	19.7	µg/L

B. Non-Halogenated VOCs

Total BTEX	100	µg/L	---	
Benzene	5.0	µg/L	---	
1,4 Dioxane	200	µg/L	---	
Acetone	7.97	mg/L	---	
Phenol	1,080	µg/L	5908	µg/L

C. Halogenated VOCs

Carbon Tetrachloride	4.4		31.5	µg/L
1,2 Dichlorobenzene	600	µg/L	---	
1,3 Dichlorobenzene	320	µg/L	---	
1,4 Dichlorobenzene	5.0	µg/L	---	
Total dichlorobenzene	---	µg/L	---	
1,1 Dichloroethane	70	µg/L	---	
1,2 Dichloroethane	5.0	µg/L	---	
1,1 Dichloroethylene	3.2	µg/L	---	
Ethylene Dibromide	0.05	µg/L	---	
Methylene Chloride	4.6	µg/L	---	
1,1,1 Trichloroethane	200	µg/L	---	
1,1,2 Trichloroethane	5.0	µg/L	---	
Trichloroethylene	5.0	µg/L	---	
Tetrachloroethylene	5.0	µg/L	65.0	µg/L
cis-1,2 Dichloroethylene	70	µg/L	---	

Vinyl Chloride	2.0	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	190	µg/L	---	µg/L
Diethylhexyl phthalate	101	µg/L	43.3	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	1.0	µg/L	---	
Benzo(a)anthracene	1.0	µg/L	0.0748	µg/L
Benzo(a)pyrene	1.0	µg/L	0.0748	µg/L
Benzo(b)fluoranthene	1.0	µg/L	0.0748	µg/L
Benzo(k)fluoranthene	1.0	µg/L	0.0748	µg/L
Chrysene	1.0	µg/L	0.0748	µg/L
Dibenzo(a,h)anthracene	1.0	µg/L	0.0748	µg/L
Indeno(1,2,3-cd)pyrene	1.0	µg/L	0.0748	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	100	µg/L	---	
Naphthalene	20	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	0.000064	µg/L	---	
Pentachlorophenol	1.0	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	5.0	mg/L	---	
Ethanol	Report	mg/L	---	
Methyl-tert-Butyl Ether	70	µg/L	394	µg/L
tert-Butyl Alcohol	120	µg/L	---	
tert-Amyl Methyl Ether	90	µg/L	---	

Compliance Level
applies if shown

--- $\mu\text{g/L}$

--- $\mu\text{g/L}$

---	μg/L
---	μg/L
---	μg/L
---	μg/L
---	μg/L
---	μg/L
---	μg/L

0.5	μg/L
-----	------

From: [Wood, Jennifer \(DEP\)](#)
To: [Jeanne Westervelt](#)
Cc: [Vakalopoulos, Catherine \(DEP\)](#)
Subject: RE: permission for use of a dilution factor in WQBEL calculations
Date: Wednesday, September 26, 2018 3:48:02 PM
Attachments: [image001.png](#)

Hi Jeanne,

Your dilution factor calculation of 19.69 for the proposed discharge in the Mystic River at lat/long 42.414837, -71.103117 is correct. Also, since the facility is indicated as an MCP site, a fee and further review of the NOI by MassDEP is not required.

Please let me know if you have any questions.

*Jennifer Wood
Environmental Engineer
Department of Environmental Protection
1 Winter Street, 5th Floor
Boston, MA 02108
(p) 617-654-6536*

From: Jeanne Westervelt [mailto:jeanne@cooperstownenv.com]
Sent: Wednesday, September 26, 2018 1:09 PM
To: Wood, Jennifer (DEP)
Subject: permission for use of a dilution factor in WQBEL calculations

Hello-

I am preparing a notice of intent to discharge under the 2017 RGP for contaminated site construction dewatering. A copy of the NOI is attached. I would like to know if a dilution factor is allowed for WQBEL calculations for segment MA71-02 of the Mystic River as described in Section B of the attached NOI.

Any information you can provide would be appreciated.

Thanks,

Jeanne

[Jeanne Westervelt, PG, LSP](#)
[Technical Services Director](#)

logo_mailings.png



(978) 470-4755 (office)

www.CooperstownEnv.com

www.BrownfieldsTaxCredit.com



Endangered Species

Midwest

S7 Consultation Technical Assistance Decision Process for "No Effect" Determinations

Projects within a Developed Area - Step 6

Step 6. "No Effect" Determination and Documentation

Your project will have "no effect" on federally listed species. A "No Effect" determination is appropriate because your project is

- within a Developed Area (an area that is already paved or supports structures and the only vegetation is limited to frequently mowed grass or conventional landscaping), and
- does not involve removing native vegetation.

Since it will not affect suitable habitat for listed species, no listed species or designated critical habitat is anticipated to be directly or indirectly affected by this action.

To document your section 7 review and "no effect" determination, we recommend that you print this page (go to File<Print Preview), fill-in the project name and date, attach your [species list](#), and file in your administrative record.

Project Name:

236-240 Salem Street Medford, MA

Date:

8/28/2018

[Back](#)

[Home - "No Effect" Determination Process](#)



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-2903
Event Code: 05E1NE00-2018-E-06835
Project Name: 236-240 Salem Street Medford Ma

August 28, 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-2903

Event Code: 05E1NE00-2018-E-06835

Project Name: 236-240 Salem Street Medford Ma

Project Type: Guidance

Project Description: Dewatering discharge under NPDES RGP from site via municipal storm water system to outfall located at Mystic River.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.41505304093574N71.10298454761507W>



Counties: Middlesex, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

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

Critical habitats

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

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Medford; Place: Medford Square; Resource Type(s): Area;

Inv. No.	Property Name	Street	Town	Year
MDF.C	Park Street Court Streetscape		Medford	
MDF.H	Ashland - Chestnut - Oakland - Water Streets Area		Medford	
MDF.K	Washington Street Streetscape		Medford	
MDF.L	Bradlee - Hall Estates		Medford	
MDF.M	Hillside Avenue Historic District		Medford	
MDF.N	Prospect Park		Medford	
MDF.U	Metropolitan Park System of Greater Boston		Medford	
MDF.AA	Mystic Valley Parkway		Medford	
MDF.AL	Clisby - Mitchell Area		Medford	
MDF.AM	Lawrence Memorial Hospital		Medford	
MDF.AN	Medford Square		Medford	
MDF.AO	Medford Square East		Medford	
MDF.AP	Medford High School Campus, Old		Medford	
MDF.AQ	Saint Joseph's Roman Catholic Church Parish Complex		Medford	
MDF.AW	Hillside Avenue		Medford	



City of Medford
Engineering Division
City Hall – Room 300
85 George P. Hassett Drive
Medford, MA 02155

CONSTRUCTION DEWATERING PROCEDURES

The City of Medford does not allow groundwater and /or stormwater which contains contaminants and /or pollutants to discharge into the storm drain system. All groundwater discharges resulting from construction activities discharging into the storm drain system shall be free of pollutants and contaminants.

All construction activities requiring dewatering shall comply with all applicable federal and state regulations. In case of conflict between regulations the more stringent regulation shall apply.

The City of Medford would allow groundwater dewatering discharge into the storm drain only under the following conditions:

- It is the owner's / applicant's responsibility to file for and obtain all required federal and state permits related to construction dewatering activities.
- A cover letter or memorandum shall be sent to Medford Engineering Division explaining the project, proposed catch basin or point of discharge to dewater onto. An appropriate site plan, sedimentation control procedure, protection of the City right of way for pedestrian and vehicle access during dewatering, treatment required, and any other pertinent information. The cover or memo shall also include estimate of flow of groundwater discharge (gallons per minute) and an estimate of the duration of the dewatering activity.
- The owner / applicant shall provide copies of the MWRA Dewatering Permit or the NPDES Exclusion Permit or the NPDES General Permit for Construction Dewatering Activity Discharges in the State of Massachusetts, if applicable.
- Prior to commencing dewatering, the Engineering Office shall be contacted by the owner/ applicant to arrange for inspection of the dewatering and discharge system. The City of Medford reserves the right to enter the property where groundwater dewatering is taking place for inspections.
- No contaminants and/or pollutants are allowed into the storm drain system.
- At the start of the dewatering activity the owner / applicant of the construction site shall sample, measure and conduct test analysis in accordance with applicable EPA approved procedures. The sampling required by the department shall be performed by a DEP certified independent laboratory. The parameters that should

be tested include fecal coliform, petroleum hydrocarbons (PHC), TTO (Volatile Organic Fraction) and TTO (Acid/ Base / Neutrals Organic Fraction).

- All dewatering activities must be stopped immediately and the Engineering Division contacted if you suspect groundwater contaminants, i.e. gasoline, fuel oil, solvents, etc.
- Surface discharge to the nearest downstream catch basin is not allowed. The hose must be extended from your manhole directly to the catch basin with ramps strategically placed so that they neither burst nor are frayed by vehicular traffic. If the pumps or hoses are in the curb line, proper precaution must be made for pedestrians using the street.
- All groundwater pumped from the work shall be disposed of without damage to pavements, other surfaces or property.
- If material or debris has washed or flowed into or has been placed in existing gutters, drains, pipes or structures, such material or debris shall be entirely removed and satisfactorily disposed of by the Contractor during the progress of work as directed by the Medford DPW.
- Any flooding or damage of property and possessions caused by siltation of existing gutters, pipes or structures shall be the responsibility of the Contractor.
- Provisions shall be made to insure that no material, water or solid, will freeze on any pavement or in any location which will cause inconvenience or hazard to the general public.
- Upon completion of the work, existing gutters, drains, pipes and structures shall be cleaned and material disposed of satisfactorily prior to acceptance by the Medford DPW