April 2, 2020

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

Notice of Intent for Application of a Remediation General Permit
Cumberland Farms, Inc. Property #MA8667
1969 - 1987 Washington Street
Hanover, MA 02339

To Whom It May Concern:

Kleinfelder, on behalf of Cumberland Farms, Inc. (CFI), has prepared the enclosed Notice of Intent (NOI), included as Attachment A, for application of Remediation General Permit (RGP) for upcoming activities at Cumberland Farms, Inc. Property #MA8667, located at 1969 - 1987 Washington Street in Hanover, Massachusetts (referred to as the "subject properties" or "the site" herein). This NOI is for the discharge anticipated to be generated during temporary groundwater dewatering activities associated with the excavation required for the foundation of a 4,464 square foot convenience store, installation of a fuel dispenser area with a canopy structure, and installation of two 24,000 gallon compartmental underground storage tanks (USTs) containing either gasoline and/or diesel fuel. Refer to Attachment 2, Figure 1 for a Site Location Plan, Figure 2 for a Site Plan and Proposed Construction Plan, and to Figure 3 for a NOI Extent Map.

Groundwater Characterization

A groundwater sample was collected on March 9, 2020 to characterize influent source water for purposes of satisfying RGP NOI analytical requirements

<u>March 2020 Groundwater Sampling</u>

Depth to water across the site has been measured to be approximately 4.40 to 10.80 feet below ground surface. In preparation for groundwater dewatering activities, a representative groundwater sample (RGP Sample) was collected on March 9, 2020 from onsite monitoring well MW-2. The sample was submitted to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for analysis of Volatile Organic Compounds (VOCs) via EPA method 624.1, Semivolatile Organic Compounds (SVOCs) via EPA method 625.1, Polychlorinated Biphenyls (PCBs) via EPA method 608.3, Metals (total and dissolved) via EPA methods 200.7, 200.8, and 245.1, phenol via EPA method 420.1, total petroleum hydrocarbons (TPH) silica gel treated HEM via EPA method 1664B, and conventional chemistry parameters (chloride, residual chloride, hexavalent chromium, pH, cyanide, ammonia, and total suspended solids).

Groundwater temperature (51 degrees Fahrenheit) was recorded as part of groundwater sampling activities on March 9, 2020.

Based on the groundwater analytical results derived from the March 2020 groundwater sampling event, residual chlorine, total suspended solids, total arsenic, total cadmium, total iron, total trivalent chromium, total copper, total lead, total nickel, total zinc, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were detected above applicable Technology Based Effluent Limitations (TBEL) and/or Water Quality Based Effluent Limitations (WQBEL). Note that concentrations of dissolved metals were either below applicable effluent limitations and/or laboratory detection limits. In addition, the sum of detected concentrations among group I polycyclic aromatic hydrocarbons (PAHs), which include benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene, is below the Total Group I PAH TBEL standard of 1.0 µg/L.

The concentration of total PCBs was below the laboratory detection limit; however, the laboratory detection limit exceeds the applicable TBEL and compliance level standard. Despite the laboratory detection limit for total PCBs being higher than applicable effluent limitations/standards, PCBs are not believed to be present within site groundwater based on knowledge of the site.

All appropriate groundwater analytical methodologies were implemented in conformance with Appendix VII of the Remediation General Permit (RGP). Groundwater analytical results from the March 2020 groundwater sampling event are included as Attachment C.

As part of the March 9, 2020 sampling event, a trip blank was submitted to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for analysis of VOCs via EPA method 624.1. Based on the trip blank analytical data, analytes detected above laboratory detection limits were acetone (1.20 µg/L) and methylene chloride (0.740 µg/L). Based on this detection, it is noted that the detection of acetone in the RGP sample could be due to laboratory or other contamination of the sample. The trip blank analytical results are provided in Attachment C.

Receiving Water Characterization

Treated effluent will be discharged to the wetland area located at the eastern portion of the site. This area of wetland discharges to Third Herring Brook, also located to the east.

The wetland/brook receiving water was sampled on March 9, 2020. The surface water sample was submitted to Con-Test Analytical Laboratory of East Longmeadow, Massachusetts for analysis of total metals via EPA Method 200.7, 200.8, and 245.1, ammonia via SM19-22 4500 NH3 C, and conventional chemistry parameters (hexavalent chromium via SM21-22 3500 Cr B and pH). Temperature of the wetland/pond receiving water (45 degrees Fahrenheit) was measured as part of the March 9, 2020 sampling activities.

The unnamed wetland/brook receiving water eventually drains to Third Herring Brook, waterbody identification MA94-27, and is classified as a Category 5 waterbody within the state of Massachusetts. Receiving water analytical results are included as Attachment D.

Proposed Treatment System

A Design Flow treatment system discharge rate of 150 gallons per minute (gpm) was used to evaluate the applicable RGP discharge standards. Extracted water from the excavation activities will be initially pumped into up to two 21,000-gallon fractionation tanks.

Following settling, extracted groundwater will be treated by passage through (at minimum) 50-micron particle filters, and through liquid-phase reactive carbon vessels. Flow will be measured using an in-line flowmeter and totalizer prior to the discharge into the wetland at the eastern portion of the property.

Kleinfelder anticipates that the dewatering system will operate from approximately June 2020 through April 2021. A Work Plan for the groundwater extraction and treatment systems satisfying the requirements of Section 2.5 of the RGP will be available at the Site prior to initiating dewatering activities. See Figure 4 for a Treatment System Schematic.

Notice of Intent

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

- Review of the Massachusetts Geographic Information Systems MassDEP Priority Resources Map (Figure 5) shows the Site is not within an ACEC.
- An "informal consultation" with the Fish and Wildlife Service resulted in a consistency letter stating that, although a threatened species may exist within the project site area (Northern Long-eared Bat or *Myotis septentrionalis*), groundwater discharge into the unnamed wetland/pond is "not likely" to result in unauthorized take of the threatened species. Furthermore, no critical habitats were found within the project defined area. The Fish and Wildlife Service consistency letter and official list of threatened and endangered species has been provided as Attachment E.
- According to the National Park Service's National Register of Historic Places and the Massachusetts Cultural Resource Information System (MACRIS), the 1969 - 1987 Washington Street, Hanover, Massachusetts properties are not within the National Register of Historic Places and have no historic or cultural significance on a federal or state level. The 1969 Washington Street, Hanover, Massachusetts property is currently vacant with no existing site buildings or structures (previously a Midas commercial facility), while the 1987 Washington Street, Hanover, Massachusetts property is currently occupied by a Friendly's restaurant. Historic and cultural references within the surrounding area of the subject properties are provided in Attachment F.

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

We appreciate your assistance in processing this Notice of Intent.

Should you have any questions regarding this correspondence, please do not hesitate to contact the undersigned at (617)497-7800.

Sincerely,
KLEINFELDER

Joseph Fontaine
Staff Professional

Emily M. Straley
Project Manager

cc: Mr. Matthew Young, Cumberland Farms, Inc. (file)
cc: Sandra MacFarlane, Conservation Agent, Hanover, Massachusetts, Conservation Division(electronic)
cc: Cathy Vakalopoulos, Massachusetts Department of Environmental Protection, Surface Water Discharge Permit Program, One Winter Street, 5th Floor, Boston, MA 02108

Attachments:

Attachment A – RGP NOI Form
Attachment B – Figures
- Figure 1 – Locus Plan
- Figure 2 – Site Plan and Proposed Construction
- Figure 3 – NOI Map
- Figure 4 – Treatment System Schematic
- Figure 5 – MassDEP Priority Resource Map

Attachment C – Groundwater Laboratory Analytical Data
Attachment D – Receiving Water Laboratory Analytical Data
Attachment E – Fish and Wildlife Service Consistency Letter and Official List of Threatened and Endangered Species
Attachment F – Historic Properties Information

ATTACHMENT A

RGP NOI Form

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

A. General site information:

<table>
<tr><td rowspan="3">1. Name of site:
Proposed Convenience Store and Retail Gasoline Facility</td><td colspan="3">Site address: 1969 - 1987 Washington Street
Street:</td></tr>
<tr><td>City: Hanover</td><td>State: MA</td><td>Zip: 02721</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td rowspan="4">2. Site owner
Harlequin-Hanover LLC (1987 Washington Street)
1185 Falmouth Road LLC (1969 Washington Street)

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address: 600 Loring Ave
Street:</td></tr>
<tr><td>City: Salem</td><td>State: MA</td><td>Zip: 01970</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Cumberland Farms, Inc.</td><td colspan="3">Contact Person: Matthew Young</td></tr>
<tr><td colspan="2">Telephone: 508-270-4477</td><td>Email: myoung@cumberlandfarms.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 165 Flanders Rd</td></tr>
<tr><td>City: Westborough</td><td>State: MA</td><td>Zip: 01581</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

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

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Third Herring Brook	MA94-27	2

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

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

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

If yes, specify: Receiving water includes a wetland

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. This portion of Third Herring Brook is listed as Category 2. Final Pathogen TMDL for the South Coastal Watershed published 2014

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	N/A
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	No Dilution

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

If yes, indicate date confirmation received: pending

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

C. Source water information:

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

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

2. Source water contaminants: Ammonia, cyanide, chloride, total suspended solids (TSS), total arsenic, total cadmium, total copper, total lead, total mercury, to	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ■ Yes ☐ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII. Barium results from August 3,2018, see part D.4 below	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Wetland area	Outfall location(s): (Latitude, Longitude) 42.15361, -70.845
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Discharge to wetland draining to receiving water ☐ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ☐ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ☐ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: N/A Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No	
Provide the expected start and end dates of discharge(s) (month/year): Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	SM19-22	0.048 mg/L		0.104 mg/L	Report mg/L	---
Chloride		✔	1	EPA 300.0	10.000		170.000	Report µg/l	---
Total Residual Chlorine	✔		1	SM21-22	0.20 mg/L		<0.20 mg/L	0.2 mg/L	0.011 mg/L
Total Suspended Solids		✔	1	SM21-22	25.000		2.800.000	30 mg/L	---
Antimony	✔		1	EPA 200.8	1.0		<1.0	206 µg/L	640 ug/L
Arsenic		✔	1	EPA 200.8	0.80		42	104 µg/L	10 ug/L
Cadmium		✔	1	EPA 200.8	0.20		1.0	10.2 µg/L	0.2420 ug/L
Chromium III		✔	1	Tri-Chrom			210	323 µg/L	76.2 ug/L
Chromium VI	✔		1	SM21-22	4.0		<4.0	323 µg/L	11.4 ug/L
Copper		✔	1	EPA 200.8	1.0		140	242 µg/L	8.2 ug/L
Iron		✔	1	EPA 200.7	500		180.000	5,000 µg/L	1000 ug/L
Lead		✔	1	EPA 200.8	0.50		150	160 µg/L	2.63 ug/L
Mercury		✔	1	EPA 245.1	0.10		0.13	0.739 µg/L	0.91 ug/L
Nickel		✔	1	EPA 200.8	5.0		120	1,450 µg/L	45.9 ug/L
Selenium		✔	1	EPA 200.8	1.6		2.3	235.8 µg/L	5.0 ug/L
Silver		✔	1	EPA 200.8	0.20		0.40	35.1 µg/L	2.9 ug/L
Zinc		✔	1	EPA 200.8	10		560	420 µg/L	105.4 ug/L
Cyanide		✔	1	SM21-22	0.001 mg/L		0.002 mg/L	178 mg/L	0.0052 mg/L
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624.1	0.92		<0.92	100 µg/L	---
Benzene	✔		1	624.1	0.180		<0.180	5.0 µg/L	---
1,4 Dioxane	✔		1	624.1	3.50		<3.50	200 µg/L	---
Acetone		✔	1	624.1	0.540 µg/L		0.860 µg/L	7.97 mg/L	---
Phenol	✔		1	625.1	9.71		<9.71	1,080 µg/L	300 ug/L

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	624.1	0.110		<0.110	4.4 µg/L	1.6 µg/L
1,2 Dichlorobenzene	✔		1	624.1	0.160		<0.160	600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	0.120		<0.120	320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	0.130		<0.130	5.0 µg/L	---
Total dichlorobenzene	✔		1	624.1	0.41		<0.41	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	0.160		<0.160	70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	0.410		<0.410	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624.1	0.320		<0.320	3.2 µg/L	---
Ethylene Dibromide	✔							0.05 µg/L	---
Methylene Chloride	✔		1	624.1	0.340		<0.340	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	0.200		<0.200	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	0.160		<0.160	5.0 µg/L	---
Trichloroethylene	✔		1	624.1	0.240		<0.240	5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	0.180		<0.180	5.0 µg/L	3.3 µg/L
cis-1,2 Dichloroethylene	✔		1	624.1	0.0500		<0.0500	70 µg/L	---
Vinyl Chloride	✔		1	624.1	0.450		<0.450	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625.1	49.52		<49.52	190 µg/L	---
Diethylhexyl phthalate	✔		1	625.1	0.97		<0.97	101 µg/L	2.2 µg/L
Total Group I PAHs		✔	1	625.1	<0.243		0.49	1.0 µg/L	---
Benzo(a)anthracene	✔		1	625.1	0.049		<0.049	As Total PAHs	0.0038 µg/L
Benzo(a)pyrene		✔	1	625.1	0.097		0.10		0.0038 µg/L
Benzo(b)fluoranthene		✔	1	625.1	0.049		0.23		0.0038 µg/L
Benzo(k)fluoranthene	✔		1	625.1	0.19		<0.19		0.0038 µg/L
Chrysene	✔		1	625.1	0.19		<0.19		0.0038 µg/L
Dibenzo(a,h)anthracene	✔		1	625.1	0.097		<0.097		0.0038 µg/L
Indeno(1,2,3-cd)pyrene		✔	1	625.1	0.097		0.16		0.0038 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
Total Group II PAHs	✔		1	625.1	38.8		<38.8	100 µg/L	---
Naphthalene	✔		1	625.1	4.85		<4.85	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608.3	0.604		<0.604	0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1	0.97		<0.97	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1	EPA1664	2.7 mg/L		<2.7 mg/L	5.0 mg/L	---
Ethanol	✔		1	624.1	0.0279mg/L		<0.0279 mg/L	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624.1	0.250		<0.250	70 µg/L	20 µg/L
tert-Butyl Alcohol	✔		1	624.1	3.50		<3.50	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624.1	0.110		<0.110	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH		✔	1	SM21-22			6.4		
Hardness		✔	1	EPA 200.7	1400		270,000		
Temperature		✔	1	Thermome			51 degrees		
Barium		✔	2	6010C			81.4		

E. Treatment system information

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

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

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

Influent groundwater will first enter up to two 21,000 gallon fractionation tanks (in series if two). Groundwater will then flow through a series of (at a minimum) 50 micron size particle bag filters, then through granulated activated carbon (GAC) vessel(s). Treated groundwater will be discharged at the designated discharge location (adjacent wetland area). The volume of water being discharged will be tracked using a flow totalizer.

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

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

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

☐ Chlorination ☐ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: pump Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	150
Provide the proposed maximum effluent flow in gpm.	150
Provide the average effluent flow in gpm.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

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 that a BMPP meeting the requirements of this general permit will be developed and implemented upon initiation of discharge
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ☐ No ☐ NA ■
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Matthew D. Young	Date: 04/02/2020
Print Name and Title: Matthew D. Young	

ATTACHMENT B

Figures

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	MA8667
DRAWN:	JULY 2018
DRAWN BY:	JR
CHECKED BY:	
FILE NAME:	MA8667LOCUS.MXD

SUBJECT PROPERTY LOCATION MAP

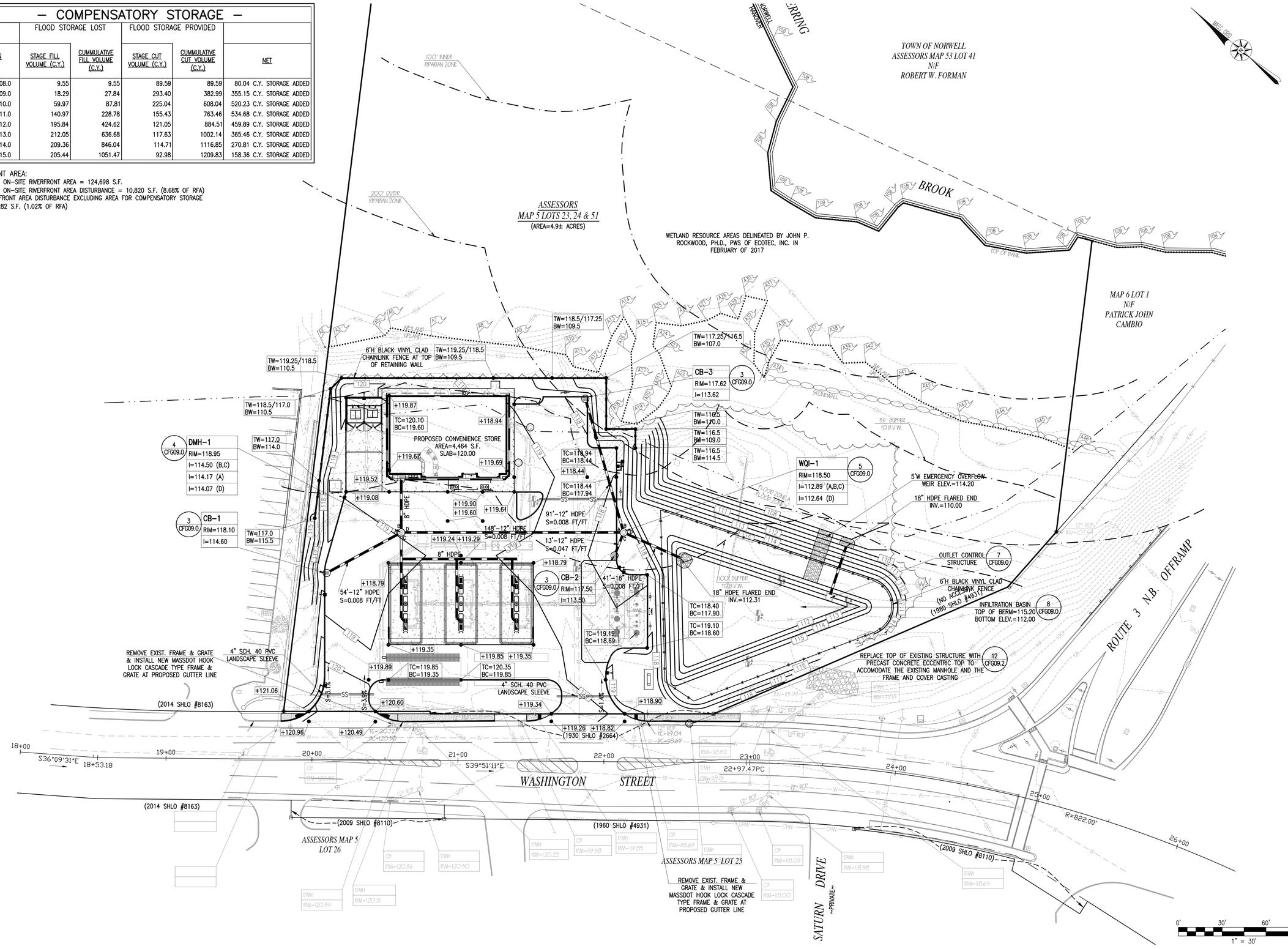
CUMBERLAND FARMS INC. #MA8667
1969-1987 WASHINGTON STREET (PARCELS 5-23, 5-24 AND 5-51)
HANOVER, MASSACHUSETTS

FIGURE
1

— COMPENSATORY STORAGE —

ELEVATION RANGE	FLOOD STORAGE LOST: STAGE FILL VOLUME (C.Y.)	FLOOD STORAGE LOST: CUMMULATIVE FILL VOLUME (C.Y.)	FLOOD STORAGE PROVIDED: STAGE CUT VOLUME (C.Y.)	FLOOD STORAGE PROVIDED: CUMMULATIVE CUT VOLUME (C.Y.)	NET
107.0 – 108.0	9.55	9.55	89.59	89.59	80.04 C.Y. STORAGE ADDED
108.0 – 109.0	18.29	27.84	293.40	382.99	355.15 C.Y. STORAGE ADDED
109.0 – 110.0	59.97	87.81	225.04	608.04	520.23 C.Y. STORAGE ADDED
110.0 – 111.0	140.97	228.78	155.43	763.46	534.68 C.Y. STORAGE ADDED
111.0 – 112.0	195.84	424.62	121.05	884.51	459.89 C.Y. STORAGE ADDED
112.0 – 113.0	212.05	636.68	117.63	1002.14	365.46 C.Y. STORAGE ADDED
113.0 – 114.0	209.36	846.04	114.71	1116.85	270.81 C.Y. STORAGE ADDED
114.0 – 115.0	205.44	1051.47	92.98	1209.83	158.36 C.Y. STORAGE ADDED

RIVERFRONT AREA:
TOTAL ON-SITE RIVERFRONT AREA = 124,698 S.F.
TOTAL ON-SITE RIVERFRONT AREA DISTURBANCE = 10,820 S.F. (8.68% OF RFA)
RIVERFRONT AREA DISTURBANCE EXCLUDING AREA FOR COMPENSATORY STORAGE = 1,282 S.F. (1.02% OF RFA)



REVISIONS

4	102219	PER DOT COMMENTS
5	010320	PER DOT COMMENTS
6	020420	PER DOT COMMENTS
7	021320	PER DOT COMMENTS
8	022120	90% PLANS

COMMONWEALTH OF MASSACHUSETTS
CHRISTIAN ALBERT FARLAND
No. 47544
CIVIL
REGISTERED PROFESSIONAL ENGINEER

FARLAND CORP.
www.FarlandCorp.com
401 COUNTY STREET
NEW BEDFORD, MA 02740
P.508.717.3479
OFFICES IN:
- TAUNTON
- MARLBOROUGH
- WARWICK, RI

DRAWN BY: JKM
DESIGNED BY: CAF
CHECKED BY: CAF

SITE PLAN
— 1969 & 1987 WASHINGTON STREET —
ASSESSORS MAP 5 LOTS 23, 24 & 51
HANOVER, MASSACHUSETTS

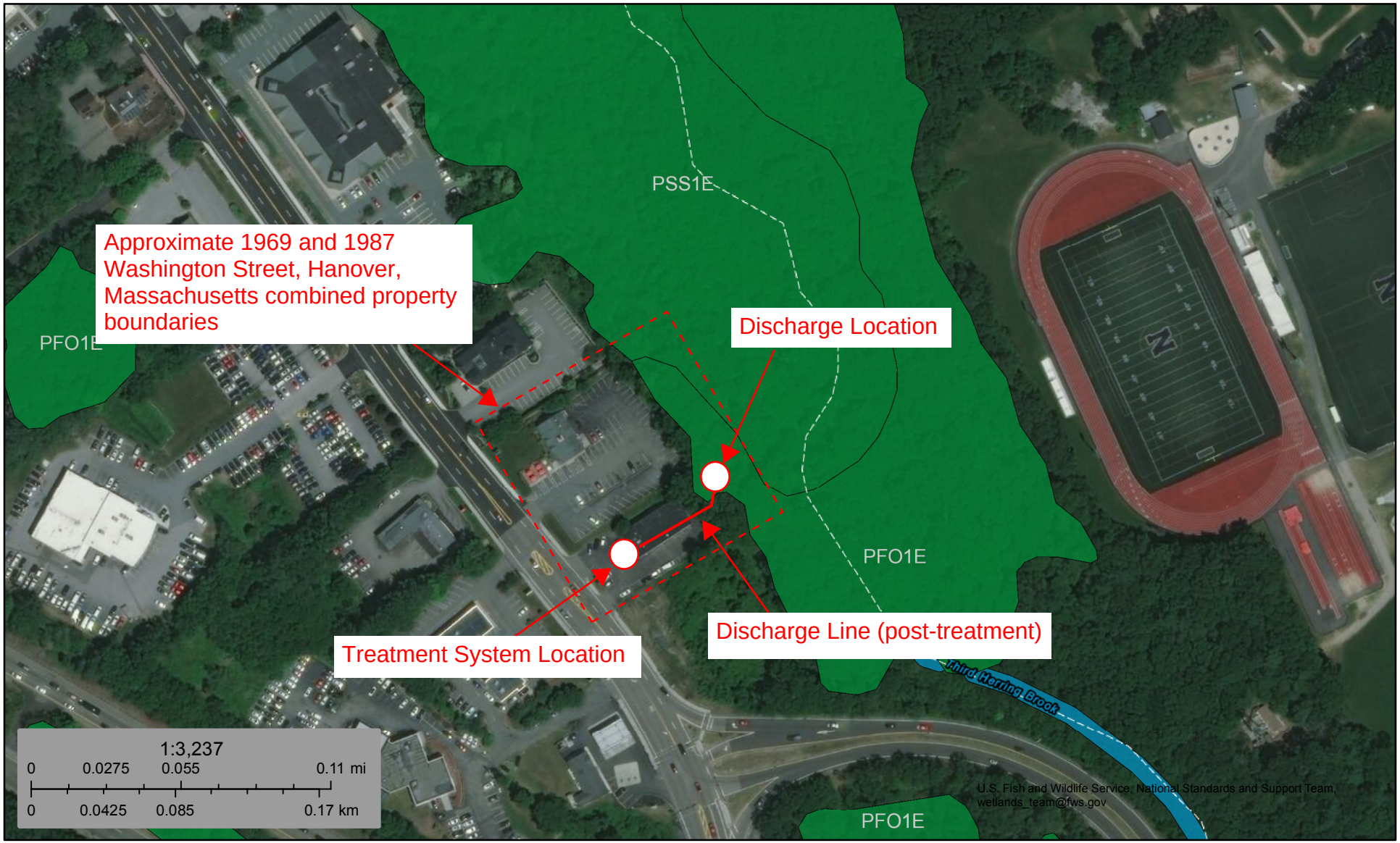
PREPARED FOR: T.M. CROWLEY & ASSOCIATES
14 BREAKNECK HILL ROAD, SUITE 101
LINCOLN, RI 02865

APRIL 26, 2019
SCALE: 1"=30'
JOB NO. 18-053
LATEST REVISION: 022120

SITE GRADING & DRAINAGE PLAN
CFG05.0

U.S. Fish and Wildlife Service
National Wetlands Inventory

Figure 3 - NOI Site Plan

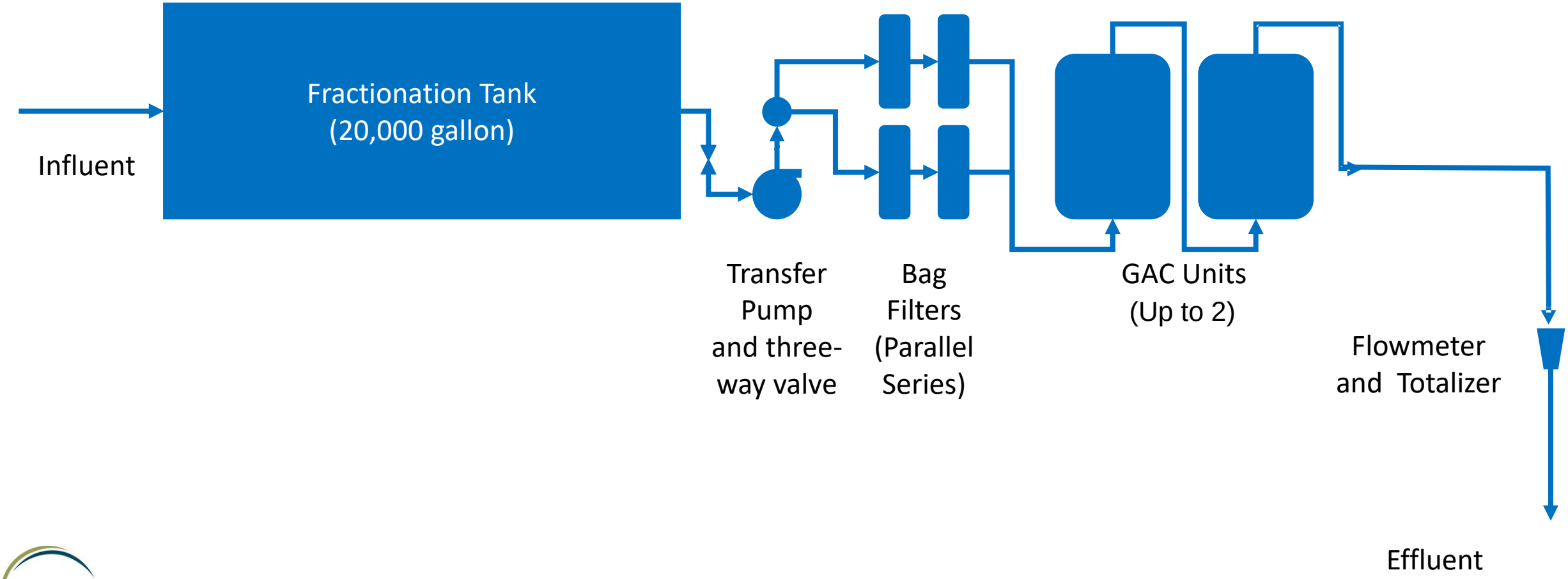


March 5, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Figure 4
Proposed Treatment System Schematic



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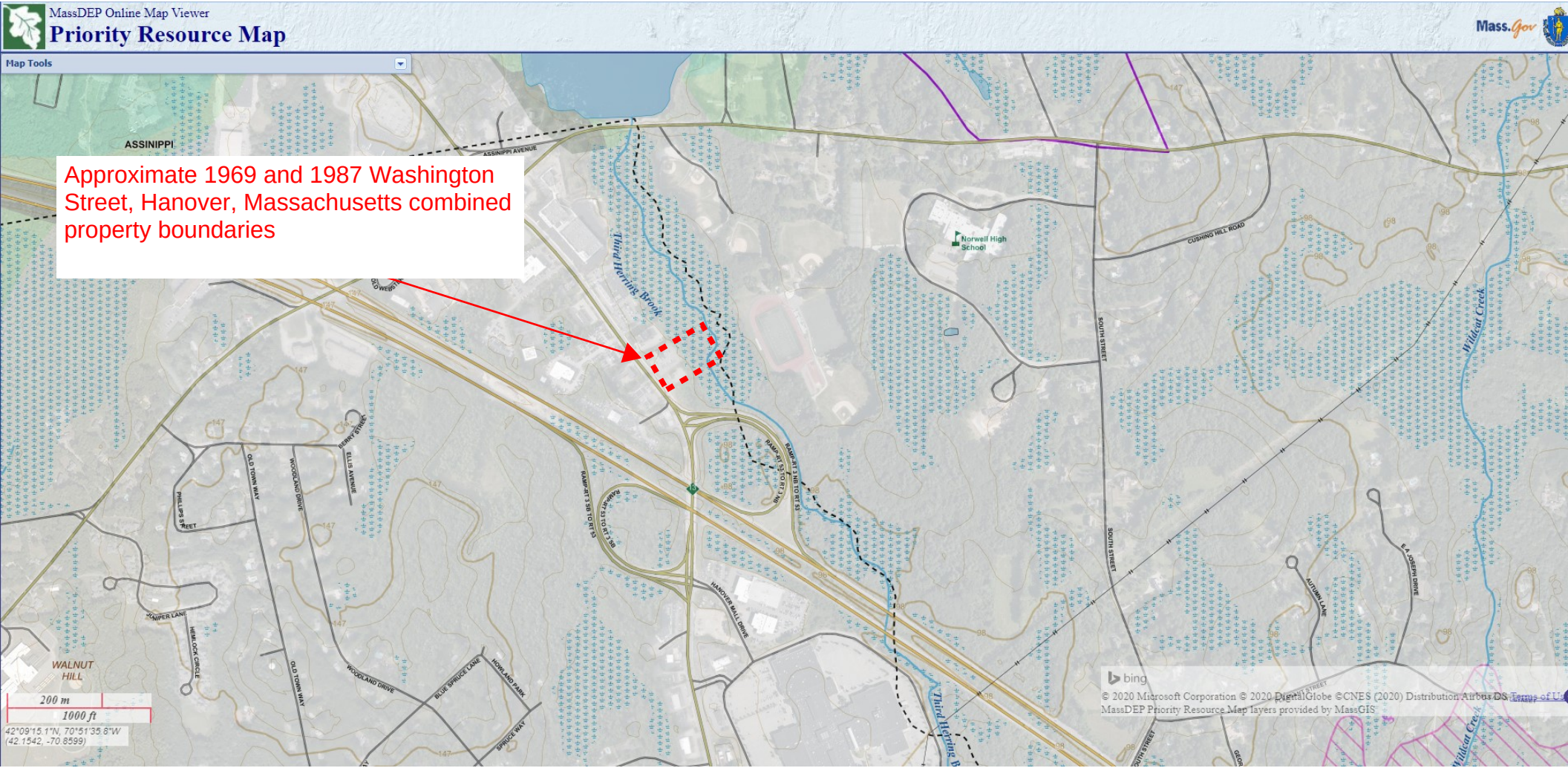
MassDEP Online Map Viewer
Priority Resource Map
Mass.Gov
Map Tools
Approximate 1969 and 1987 Washington Street, Hanover, Massachusetts combined property boundaries
ASSINIPPI
ASSINIPPI AVENUE
Third Herring Brook
Norwell High School
CUSHING HILL ROAD
SOUTH STREET
Wildcat Creek
E.A. JOSEPH DRIVE
AUTUMN LANE
HANOVER MALL DRIVE
RAMP-RT 53 TO RT 53
RAMP-RT 53 NB TO RT 53
RAMP-RT 3 SB TO RT 53
RAMP-RT 53 TO RT 3 SB
BERRY STREET
ELLIS AVENUE
PHILLIPS STREET
OLD TOWN WAY
WOODLAND DRIVE
JUNIPER LANE
HEMLOCK CIRCLE
WALNUT HILL
BLUE SPRUCE LANE
HOWLAND PARK
SPRUCE WAY
200 m
1000 ft
42°09'15.1"N, 70°51'35.8"W
(42.1542, -70.8599)
bing
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MassDEP Priority Resource Map layers provided by MassGIS

MassDEP Online Map Viewer

MassDEP

Massachusetts Department of Environmental Protection

Map Legend

ATTACHMENT C

Groundwater Laboratory Analytical Data – RGP Sample

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

March 23, 2020

Madeline Soule
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: 1969 & 1987 Washington St, Hanover, MA
Client Job Number:
Project Number: 20183351.006A
Laboratory Work Order Number: 20C0372

Enclosed are results of analyses for samples received by the laboratory on March 9, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

Table of Contents (continued)

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Madeline Soule

REPORT DATE: 3/23/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20183351.006A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20C0372

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

PROJECT LOCATION: 1969 & 1987 Washington St, Hanover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
RGP Sample	20C0372-01	Ground Water		608.3	
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 4500 H B	
				Tri Chrome Calc.	
Trip Blank	20C0372-02	Trip Blank Water		624.1	

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

CASE NARRATIVE SUMMARY

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

REVISED REPORT - 30/23/2020 -Total iron and hardness result updated.

REVISED REPORT - 3/20/2020 - Phenol, iron and pH reported per chain of custody.

625.1

Qualifications:

S-07

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

Analyte & Samples(s) Qualified:

2,4,6-Tribromophenol (SIM)
B254130-BS1, B254130-BSD1

SM21-22 4500 CL G

Qualifications:

W-06

Elevated method reporting limit due to intense color of sample

Analyte & Samples(s) Qualified:

Chlorine, Residual
20C0372-01[RGP Sample], B253856-DUP1

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH
20C0372-01[RGP Sample]

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

Lisa A. Worthington
Technical Representative

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	0.860	50.0	0.540	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
tert-Amyl Methyl Ether (TAME)	<0.110	0.500	0.110	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Benzene	<0.180	1.00	0.180	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
tert-Butyl Alcohol (TBA)	<3.50	20.0	3.50	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Carbon Tetrachloride	<0.110	2.00	0.110	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,2-Dichlorobenzene	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,3-Dichlorobenzene	<0.120	2.00	0.120	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,2-Dichloroethane	<0.410	2.00	0.410	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
cis-1,2-Dichloroethylene	<0.0500	1.00	0.0500	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,1-Dichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,1-Dichloroethylene	<0.320	2.00	0.320	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,4-Dioxane	<3.50	50.0	3.50	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Ethanol	<27.9	50.0	27.9	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Ethylbenzene	<0.130	2.00	0.130	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Methyl tert-Butyl Ether (MTBE)	<0.250	2.00	0.250	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Methylene Chloride	<0.340	5.00	0.340	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Tetrachloroethylene	<0.180	2.00	0.180	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Toluene	<0.140	1.00	0.140	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,1,1-Trichloroethane	<0.200	2.00	0.200	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
1,1,2-Trichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Trichloroethylene	<0.240	2.00	0.240	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
Vinyl Chloride	<0.450	2.00	0.450	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
m+p Xylene	<0.300	2.00	0.300	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH
o-Xylene	<0.170	1.00	0.170	µg/L	1		624.1	3/10/20	3/10/20 15:26	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	94.8	70-130		3/10/20 15:26
Toluene-d8	98.9	70-130		3/10/20 15:26
4-Bromofluorobenzene	92.5	70-130		3/10/20 15:26

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	<0.049	0.049	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Benzo(a)pyrene (SIM)	0.10	0.097	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Benzo(b)fluoranthene (SIM)	0.23	0.049	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Benzo(k)fluoranthene (SIM)	<0.19	0.19	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Bis(2-ethylhexyl)phthalate (SIM)	<0.97	0.97	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Chrysene (SIM)	<0.19	0.19	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Dibenz(a,h)anthracene (SIM)	<0.097	0.097	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Indeno(1,2,3-cd)pyrene (SIM)	0.16	0.097	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW
Pentachlorophenol (SIM)	<0.97	0.97	µg/L	1		625.1	3/12/20	3/13/20 17:07	RMW

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol (SIM)	35.1	15-110		3/13/20 17:07
Phenol-d6 (SIM)	30.7	15-110		3/13/20 17:07
Nitrobenzene-d5	59.6	30-130		3/13/20 17:07
2-Fluorobiphenyl	53.9	30-130		3/13/20 17:07
2,4,6-Tribromophenol (SIM)	74.1	15-110		3/13/20 17:07
p-Terphenyl-d14	57.5	30-130		3/13/20 17:07

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Acenaphthylene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Anthracene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Benzo(g,h,i)perylene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Butylbenzylphthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Di-n-butylphthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Diethylphthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Dimethylphthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Di-n-octylphthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Bis(2-Ethylhexyl)phthalate	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Fluoranthene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Fluorene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Naphthalene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Phenanthrene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Phenol	<9.71	9.71	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB
Pyrene	<4.85	4.85	µg/L	1		625.1	3/12/20	3/13/20 16:54	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	32.3	15-110		3/13/20 16:54
Phenol-d6	25.2	15-110		3/13/20 16:54
Nitrobenzene-d5	43.9	30-130		3/13/20 16:54
2-Fluorobiphenyl	58.8	30-130		3/13/20 16:54
2,4,6-Tribromophenol	52.9	15-110		3/13/20 16:54
p-Terphenyl-d14	58.3	30-130		3/13/20 16:54

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Polychlorinated Biphenyls By GC/ECD

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Aroclor-1016 [1]	<0.0920	0.100	0.0920	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1221 [1]	<0.0805	0.100	0.0805	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1232 [1]	<0.0995	0.100	0.0995	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1242 [1]	<0.0865	0.100	0.0865	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1248 [1]	<0.0950	0.100	0.0950	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1254 [1]	<0.0525	0.100	0.0525	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG
Aroclor-1260 [1]	<0.0980	0.100	0.0980	µg/L	1		608.3	3/11/20	3/12/20 11:01	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	55.3	30-150		3/12/20 11:01
Decachlorobiphenyl [2]	47.6	30-150		3/12/20 11:01
Tetrachloro-m-xylene [1]	88.5	30-150		3/12/20 11:01
Tetrachloro-m-xylene [2]	78.9	30-150		3/12/20 11:01

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Arsenic	42	0.80		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Cadmium	1.0	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Chromium	210	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Chromium, Trivalent	0.21			mg/L	1		Tri Chrome Calc.	3/11/20	3/11/20 20:36	QNW
Copper	140	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Iron	180	0.50		mg/L	10		EPA 200.7	3/11/20	3/12/20 22:58	TBC
Lead	150	0.50		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Mercury	0.00013	0.00010		mg/L	1		EPA 245.1	3/11/20	3/12/20 9:37	CJV
Nickel	120	5.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Selenium	2.3	5.0	1.6	µg/L	1	J	EPA 200.8	3/11/20	3/11/20 20:36	QNW
Silver	0.40	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Zinc	560	10		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:36	QNW
Hardness	270	1.4		mg/L	1		EPA 200.7	3/11/20	3/12/20 15:47	MJH

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

Metals Analyses (Dissolved)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Arsenic	ND	0.80		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Cadmium	ND	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Chromium	ND	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Chromium, Trivalent	0.0			mg/L	1		Tri Chrome Calc.	3/11/20	3/11/20 19:22	MJH
Copper	3.6	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Iron	ND	0.050		mg/L	1		EPA 200.7	3/11/20	3/11/20 21:56	ICP
Lead	ND	0.50		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Mercury	ND	0.00010		mg/L	1		EPA 245.1	3/11/20	3/12/20 9:58	CJV
Nickel	ND	5.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Silver	ND	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH
Zinc	36	10		µg/L	1		EPA 200.8	3/11/20	3/11/20 19:22	MJH

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	170	10		mg/L	10		EPA 300.0	3/15/20	3/15/20 16:23	IS
Chlorine, Residual	ND	0.20		mg/L	10	W-06	SM21-22 4500 CL G	3/9/20	3/9/20 23:20	DJM
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	3/9/20	3/9/20 20:25	KMV
pH @16.6°C	6.4			pH Units	1	H-05	SM21-22 4500 H B	3/18/20	3/18/20 21:20	KMV
Total Suspended Solids	2800	25		mg/L	1		SM21-22 2540D	3/10/20	3/10/20 13:05	LL
Silica Gel Treated HEM (SGT-HEM)	ND	5.6	2.7	mg/L	1		EPA 1664B	3/13/20	3/13/20 9:30	LL

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexavalent Chromium	ND	0.0040	mg/L	1		SM21-22 3500 Cr B	3/9/20	3/9/20 20:25	KMV

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: RGP Sample Sampled: 3/9/2020 08:30

Sample ID: 20C0372-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.104	0.15	0.048	mg/L	1		SM19-22 4500 NH3 C		3/12/20 21:41	AAL
Cyanide	0.002	0.005	0.001	mg/L	1		SM21-22 4500 CN E		3/12/20 16:22	AAL

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0372

Date Received: 3/9/2020

Field Sample #: Trip Blank Sampled: 3/9/2020 00:00

Sample ID: 20C0372-02

Sample Matrix: Trip Blank Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	1.20	50.0	0.540	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
tert-Amyl Methyl Ether (TAME)	<0.110	0.500	0.110	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Benzene	<0.180	1.00	0.180	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
tert-Butyl Alcohol (TBA)	<3.50	20.0	3.50	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Carbon Tetrachloride	<0.110	2.00	0.110	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,2-Dichlorobenzene	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,3-Dichlorobenzene	<0.120	2.00	0.120	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,2-Dichloroethane	<0.410	2.00	0.410	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
cis-1,2-Dichloroethylene	<0.0500	1.00	0.0500	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,1-Dichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,1-Dichloroethylene	<0.320	2.00	0.320	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,4-Dioxane	<3.50	50.0	3.50	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Ethanol	<27.9	50.0	27.9	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Ethylbenzene	<0.130	2.00	0.130	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Methyl tert-Butyl Ether (MTBE)	<0.250	2.00	0.250	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Methylene Chloride	0.740	5.00	0.340	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Tetrachloroethylene	<0.180	2.00	0.180	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Toluene	<0.140	1.00	0.140	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,1,1-Trichloroethane	<0.200	2.00	0.200	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
1,1,2-Trichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Trichloroethylene	<0.240	2.00	0.240	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
Vinyl Chloride	<0.450	2.00	0.450	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
m+p Xylene	<0.300	2.00	0.300	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH
o-Xylene	<0.170	1.00	0.170	µg/L	1		624.1	3/10/20	3/10/20 13:40	EEH

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	91.2	70-130		3/10/20 13:40
Toluene-d8	97.5	70-130		3/10/20 13:40
4-Bromofluorobenzene	92.9	70-130		3/10/20 13:40

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Sample Extraction Data

Prep Method: SW-846 3510C **Analytical Method: 608.3**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B254013	1000	5.00	03/11/20

Prep Method: SW-846 5030B **Analytical Method: 624.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253902	5	5.00	03/10/20
20C0372-02 [Trip Blank]	B253902	5	5.00	03/10/20

Prep Method: SW-846 3510C **Analytical Method: 625.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B254059	1030	1.00	03/12/20

Prep Method: SW-846 3510C **Analytical Method: 625.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B254130	1030	1.00	03/12/20

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0372-01 [RGP Sample]	B254164	250	03/13/20

Prep Method: EPA 200.7 **Analytical Method: EPA 200.7**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253993	50.0	50.0	03/11/20
20C0372-01RE1 [RGP Sample]	B253993	50.0		03/11/20

Prep Method: EPA 200.7 Dissolved **Analytical Method: EPA 200.7**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253995	50.0	50.0	03/11/20

Prep Method: EPA 200.8 **Analytical Method: EPA 200.8**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253992	50.0	50.0	03/11/20

Prep Method: EPA 200.8 Dissolved **Analytical Method: EPA 200.8**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253996	50.0	50.0	03/11/20

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Sample Extraction Data

Prep Method: EPA 245.1 **Analytical Method: EPA 245.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253977	6.00	6.00	03/11/20

Prep Method: EPA 245.1 Dissolved **Analytical Method: EPA 245.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253984	6.00	6.00	03/11/20

Prep Method: EPA 300.0 **Analytical Method: EPA 300.0**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B254079	10.0	10.0	03/15/20

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0372-01 [RGP Sample]	B253862	20.0	03/10/20

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253851	50.0	50.0	03/09/20

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253938	50.0	50.0	03/09/20

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0372-01 [RGP Sample]	B253856	100	100	03/09/20

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0372-01 [RGP Sample]	B254574	50.0	03/18/20

Prep Method: EPA 200.8 **Analytical Method: Tri Chrome Calc.**

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0372-01 [RGP Sample]	B253992	50.0	03/11/20

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Sample Extraction Data

Prep Method: EPA 200.8 Dissolved **Analytical Method: Tri Chrome Calc.**

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0372-01 [RGP Sample]	B253996	50.0	03/11/20

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253902 - SW-846 5030B										
Blank (B253902-BLK1)				Prepared & Analyzed: 03/10/20						
Acetone	1.51	50.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.500	µg/L							
Benzene	ND	1.00	µg/L							
tert-Butyl Alcohol (TBA)	ND	20.0	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
1,2-Dichlorobenzene	ND	2.00	µg/L							
1,3-Dichlorobenzene	ND	2.00	µg/L							
1,4-Dichlorobenzene	ND	2.00	µg/L							
1,2-Dichloroethane	ND	2.00	µg/L							
cis-1,2-Dichloroethylene	ND	1.00	µg/L							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
1,4-Dioxane	ND	50.0	µg/L							
Ethanol	ND	50.0	µg/L							
Ethylbenzene	ND	2.00	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	2.00	µg/L							
Methylene Chloride	ND	5.00	µg/L							
Tetrachloroethylene	ND	2.00	µg/L							
Toluene	ND	1.00	µg/L							
1,1,1-Trichloroethane	ND	2.00	µg/L							
1,1,2-Trichloroethane	ND	2.00	µg/L							
Trichloroethylene	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	2.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*23.2*		µg/L	25.0		92.7	70-130			
Surrogate: Toluene-d8	*24.7*		µg/L	25.0		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	*23.6*		µg/L	25.0		94.3	70-130			
LCS (B253902-BS1)				Prepared & Analyzed: 03/10/20						
Acetone	200	50.0	µg/L	200		98.0	70-160			†
tert-Amyl Methyl Ether (TAME)	19	0.500	µg/L	20.0		95.4	70-130			
Benzene	20	1.00	µg/L	20.0		100	65-135			
tert-Butyl Alcohol (TBA)	230	20.0	µg/L	200		116	40-160			†
Carbon Tetrachloride	19	2.00	µg/L	20.0		95.0	70-130			
1,2-Dichlorobenzene	22	2.00	µg/L	20.0		108	65-135			
1,3-Dichlorobenzene	23	2.00	µg/L	20.0		113	70-130			
1,4-Dichlorobenzene	22	2.00	µg/L	20.0		109	65-135			
1,2-Dichloroethane	20	2.00	µg/L	20.0		101	70-130			
cis-1,2-Dichloroethylene	20	1.00	µg/L	20.0		101	70-130			
1,1-Dichloroethane	20	2.00	µg/L	20.0		100	70-130			
1,1-Dichloroethylene	19	2.00	µg/L	20.0		96.0	50-150			
1,4-Dioxane	210	50.0	µg/L	200		107	40-130			†
Ethanol	200	50.0	µg/L	200		98.8	40-160			
Ethylbenzene	21	2.00	µg/L	20.0		105	60-140			
Methyl tert-Butyl Ether (MTBE)	21	2.00	µg/L	20.0		107	70-130			
Methylene Chloride	22	5.00	µg/L	20.0		111	60-140			
Tetrachloroethylene	21	2.00	µg/L	20.0		105	70-130			
Toluene	21	1.00	µg/L	20.0		104	70-130			
1,1,1-Trichloroethane	19	2.00	µg/L	20.0		95.6	70-130			
1,1,2-Trichloroethane	23	2.00	µg/L	20.0		113	70-130			
Trichloroethylene	21	2.00	µg/L	20.0		105	65-135			

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253902 - SW-846 5030B										
LCS (B253902-BS1)				Prepared & Analyzed: 03/10/20						
Vinyl Chloride	17	2.00	µg/L	20.0		84.9	5-195			
m+p Xylene	42	2.00	µg/L	40.0		104	70-130			
o-Xylene	22	2.00	µg/L	20.0		108	70-130			
Surrogate: 1,2-Dichloroethane-d4	*22.4*		µg/L	25.0		89.7	70-130			
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	*24.6*		µg/L	25.0		98.4	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B254130 - SW-846 3510C												
Blank (B254130-BLK1)				Prepared & Analyzed: 03/12/20								
Benzo(a)anthracene (SIM)	ND	0.050	µg/L									
Benzo(a)pyrene (SIM)	ND	0.10	µg/L									
Benzo(b)fluoranthene (SIM)	ND	0.050	µg/L									
Benzo(k)fluoranthene (SIM)	ND	0.20	µg/L									
Bis(2-ethylhexyl)phthalate (SIM)	ND	1.0	µg/L									
Chrysene (SIM)	ND	0.20	µg/L									
Dibenz(a,h)anthracene (SIM)	ND	0.10	µg/L									
Indeno(1,2,3-cd)pyrene (SIM)	ND	0.10	µg/L									
Pentachlorophenol (SIM)	ND	1.0	µg/L									
Surrogate: 2-Fluorophenol (SIM)	*86.9*		µg/L	200		43.4		15-110				
Surrogate: Phenol-d6 (SIM)	*67.8*		µg/L	200		33.9		15-110				
Surrogate: Nitrobenzene-d5	*76.6*		µg/L	100		76.6		30-130				
Surrogate: 2-Fluorobiphenyl	*66.2*		µg/L	100		66.2		30-130				
Surrogate: 2,4,6-Tribromophenol (SIM)	*157*		µg/L	200		78.6		15-110				
Surrogate: p-Terphenyl-d14	*69.1*		µg/L	100		69.1		30-130				
LCS (B254130-BS1)				Prepared: 03/12/20 Analyzed: 03/13/20								
Benzo(a)anthracene (SIM)	53.2	1.0	µg/L	50.0		106		33-143				
Benzo(a)pyrene (SIM)	57.1	2.0	µg/L	50.0		114		17-163				
Benzo(b)fluoranthene (SIM)	61.9	1.0	µg/L	50.0		124		24-159				
Benzo(k)fluoranthene (SIM)	60.4	4.0	µg/L	50.0		121		11-162				
Bis(2-ethylhexyl)phthalate (SIM)	69.4	20	µg/L	50.0		139		8-158				
Chrysene (SIM)	55.4	4.0	µg/L	50.0		111		17-168				
Dibenz(a,h)anthracene (SIM)	55.4	2.0	µg/L	50.0		111		10-227				
Indeno(1,2,3-cd)pyrene (SIM)	59.4	2.0	µg/L	50.0		119		10-171				
Pentachlorophenol (SIM)	50.4	20	µg/L	50.0		101		14-176				
Surrogate: 2-Fluorophenol (SIM)	*118*		µg/L	200		59.1		15-110				
Surrogate: Phenol-d6 (SIM)	*92.8*		µg/L	200		46.4		15-110				
Surrogate: Nitrobenzene-d5	*105*		µg/L	100		105		30-130				
Surrogate: 2-Fluorobiphenyl	*95.5*		µg/L	100		95.5		30-130				
Surrogate: 2,4,6-Tribromophenol (SIM)	*247*		µg/L	200		**123**	*	15-110			S-07	
Surrogate: p-Terphenyl-d14	*82.8*		µg/L	100		82.8		30-130				
LCS Dup (B254130-BSD1)				Prepared: 03/12/20 Analyzed: 03/13/20								
Benzo(a)anthracene (SIM)	53.3	1.0	µg/L	50.0		107		33-143	0.0376	53		
Benzo(a)pyrene (SIM)	56.9	2.0	µg/L	50.0		114		17-163	0.351	72		
Benzo(b)fluoranthene (SIM)	61.4	1.0	µg/L	50.0		123		24-159	0.714	71		
Benzo(k)fluoranthene (SIM)	60.2	4.0	µg/L	50.0		120		11-162	0.332	63		
Bis(2-ethylhexyl)phthalate (SIM)	69.2	20	µg/L	50.0		138		8-158	0.289	82		
Chrysene (SIM)	55.8	4.0	µg/L	50.0		112		17-168	0.792	87		
Dibenz(a,h)anthracene (SIM)	55.1	2.0	µg/L	50.0		110		10-227	0.543	126		
Indeno(1,2,3-cd)pyrene (SIM)	59.2	2.0	µg/L	50.0		118		10-171	0.405	99		‡
Pentachlorophenol (SIM)	49.9	20	µg/L	50.0		99.9		14-176	0.877	86		
Surrogate: 2-Fluorophenol (SIM)	*118*		µg/L	200		58.8		15-110				
Surrogate: Phenol-d6 (SIM)	*93.0*		µg/L	200		46.5		15-110				
Surrogate: Nitrobenzene-d5	*107*		µg/L	100		107		30-130				
Surrogate: 2-Fluorobiphenyl	*96.5*		µg/L	100		96.5		30-130				
Surrogate: 2,4,6-Tribromophenol (SIM)	*248*		µg/L	200		**124**	*	15-110			S-07	
Surrogate: p-Terphenyl-d14	*82.2*		µg/L	100		82.2		30-130				
Surrogate: p-Terphenyl-d14 (SIM)	*87.1*		µg/L	100		87.1		30-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254130 - SW-846 3510C										
Matrix Spike (B254130-MS1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/15/20						
Benzo(a)anthracene (SIM)	93.5	2.0	µg/L	102	ND	91.6	33-143			
Benzo(a)pyrene (SIM)	101	4.1	µg/L	102	ND	98.9	17-163			
Benzo(b)fluoranthene (SIM)	109	2.0	µg/L	102	ND	107	24-159			
Benzo(k)fluoranthene (SIM)	106	8.2	µg/L	102	ND	104	11-162			
Bis(2-ethylhexyl)phthalate (SIM)	123	41	µg/L	102	ND	121	8-158			
Chrysene (SIM)	99.3	8.2	µg/L	102	ND	97.3	17-168			
Dibenz(a,h)anthracene (SIM)	99.2	4.1	µg/L	102	ND	97.2	10-227			
Indeno(1,2,3-cd)pyrene (SIM)	105	4.1	µg/L	102	ND	103	10-171			
Pentachlorophenol (SIM)	91.5	41	µg/L	102	ND	89.7	14-176			
Surrogate: 2-Fluorophenol (SIM)	*252*		µg/L	408		61.7	15-110			
Surrogate: Phenol-d6 (SIM)	*255*		µg/L	408		62.5	15-110			
Surrogate: Nitrobenzene-d5	*180*		µg/L	204		88.1	30-130			
Surrogate: 2-Fluorobiphenyl	*167*		µg/L	204		82.0	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*432*		µg/L	408		106	15-110			
Surrogate: p-Terphenyl-d14	*141*		µg/L	204		68.9	30-130			
Matrix Spike Dup (B254130-MSD1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/15/20						
Benzo(a)anthracene (SIM)	62.8	1.9	µg/L	94.3	ND	66.6	33-143	39.3	53	
Benzo(a)pyrene (SIM)	66.3	3.8	µg/L	94.3	ND	70.3	17-163	41.4	72	
Benzo(b)fluoranthene (SIM)	72.3	1.9	µg/L	94.3	ND	76.6	24-159	40.8	71	
Benzo(k)fluoranthene (SIM)	70.5	7.5	µg/L	94.3	ND	74.7	11-162	40.0	63	
Bis(2-ethylhexyl)phthalate (SIM)	81.7	38	µg/L	94.3	ND	86.6	8-158	40.4	82	
Chrysene (SIM)	66.2	7.5	µg/L	94.3	ND	70.2	17-168	39.9	87	
Dibenz(a,h)anthracene (SIM)	66.0	3.8	µg/L	94.3	ND	70.0	10-227	40.1	126	
Indeno(1,2,3-cd)pyrene (SIM)	69.5	3.8	µg/L	94.3	ND	73.6	10-171	41.1	99	
Pentachlorophenol (SIM)	59.5	38	µg/L	94.3	ND	63.1	14-176	42.4	86	
Surrogate: 2-Fluorophenol (SIM)	*195*		µg/L	377		51.8	15-110			
Surrogate: Phenol-d6 (SIM)	*186*		µg/L	377		49.2	15-110			
Surrogate: Nitrobenzene-d5	*128*		µg/L	189		67.9	30-130			
Surrogate: 2-Fluorobiphenyl	*115*		µg/L	189		61.1	30-130			
Surrogate: 2,4,6-Tribromophenol (SIM)	*299*		µg/L	377		79.2	15-110			
Surrogate: p-Terphenyl-d14	*101*		µg/L	189		53.4	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254059 - SW-846 3510C										
Blank (B254059-BLK1)				Prepared & Analyzed: 03/12/20						
Acenaphthene	ND	5.00	µg/L							
Acenaphthylene	ND	5.00	µg/L							
Anthracene	ND	5.00	µg/L							
Benzo(g,h,i)perylene	ND	5.00	µg/L							
Butylbenzylphthalate	ND	10.0	µg/L							
Di-n-butylphthalate	ND	10.0	µg/L							
Diethylphthalate	ND	10.0	µg/L							
Dimethylphthalate	ND	10.0	µg/L							
Di-n-octylphthalate	ND	10.0	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10.0	µg/L							
Fluoranthene	ND	5.00	µg/L							
Fluorene	ND	5.00	µg/L							
Naphthalene	ND	5.00	µg/L							
Phenanthrene	ND	5.00	µg/L							
Phenol	ND	10.0	µg/L							
Pyrene	ND	5.00	µg/L							
Surrogate: 2-Fluorophenol	*101*		µg/L	200		50.7	15-110			
Surrogate: Phenol-d6	*73.8*		µg/L	200		36.9	15-110			
Surrogate: Nitrobenzene-d5	*79.1*		µg/L	100		79.1	30-130			
Surrogate: 2-Fluorobiphenyl	*91.8*		µg/L	100		91.8	30-130			
Surrogate: 2,4,6-Tribromophenol	*158*		µg/L	200		79.1	15-110			
Surrogate: p-Terphenyl-d14	*83.8*		µg/L	100		83.8	30-130			
LCS (B254059-BS1)				Prepared & Analyzed: 03/12/20						
Acenaphthene	36.8	5.00	µg/L	50.0		73.7	47-145			
Acenaphthylene	37.1	5.00	µg/L	50.0		74.2	33-145			
Anthracene	40.0	5.00	µg/L	50.0		79.9	27-133			
Benzo(g,h,i)perylene	38.3	5.00	µg/L	50.0		76.6	10-219			
Butylbenzylphthalate	38.1	10.0	µg/L	50.0		76.2	10-152			
Di-n-butylphthalate	40.8	10.0	µg/L	50.0		81.7	10-120			
Diethylphthalate	40.3	10.0	µg/L	50.0		80.6	10-120			
Dimethylphthalate	40.4	10.0	µg/L	50.0		80.8	10-120			
Di-n-octylphthalate	39.7	10.0	µg/L	50.0		79.3	4-146			
Bis(2-Ethylhexyl)phthalate	41.0	10.0	µg/L	50.0		81.9	8-158			
Fluoranthene	41.4	5.00	µg/L	50.0		82.9	26-137			
Fluorene	41.4	5.00	µg/L	50.0		82.8	59-121			
Naphthalene	34.7	5.00	µg/L	50.0		69.4	21-133			
Phenanthrene	40.4	5.00	µg/L	50.0		80.8	54-120			
Phenol	16.5	10.0	µg/L	50.0		33.1	5-120			
Pyrene	33.2	5.00	µg/L	50.0		66.5	52-120			
Surrogate: 2-Fluorophenol	*96.6*		µg/L	200		48.3	15-110			
Surrogate: Phenol-d6	*74.4*		µg/L	200		37.2	15-110			
Surrogate: Nitrobenzene-d5	*77.5*		µg/L	100		77.5	30-130			
Surrogate: 2-Fluorobiphenyl	*90.9*		µg/L	100		90.9	30-130			
Surrogate: 2,4,6-Tribromophenol	*165*		µg/L	200		82.6	15-110			
Surrogate: p-Terphenyl-d14	*74.0*		µg/L	100		74.0	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254059 - SW-846 3510C										
LCS Dup (B254059-BSD1)				Prepared & Analyzed: 03/12/20						
Acenaphthene	36.3	5.00	µg/L	50.0		72.6	47-145	1.50	48	
Acenaphthylene	36.2	5.00	µg/L	50.0		72.5	33-145	2.29	74	
Anthracene	39.1	5.00	µg/L	50.0		78.2	27-133	2.15	66	
Benzo(g,h,i)perylene	37.0	5.00	µg/L	50.0		74.1	10-219	3.34	97	
Butylbenzylphthalate	37.2	10.0	µg/L	50.0		74.4	10-152	2.50	60	
Di-n-butylphthalate	40.0	10.0	µg/L	50.0		80.0	10-120	2.10	47	
Diethylphthalate	38.7	10.0	µg/L	50.0		77.5	10-120	3.92	100	
Dimethylphthalate	38.9	10.0	µg/L	50.0		77.7	10-120	3.91	183	
Di-n-octylphthalate	38.4	10.0	µg/L	50.0		76.9	4-146	3.12	69	
Bis(2-Ethylhexyl)phthalate	40.0	10.0	µg/L	50.0		79.9	8-158	2.52	82	
Fluoranthene	41.2	5.00	µg/L	50.0		82.4	26-137	0.508	66	
Fluorene	39.8	5.00	µg/L	50.0		79.6	59-121	3.94	38	
Naphthalene	29.4	5.00	µg/L	50.0		58.9	21-133	16.4	65	
Phenanthrene	39.1	5.00	µg/L	50.0		78.2	54-120	3.32	39	
Phenol	17.0	10.0	µg/L	50.0		34.0	5-120	2.92	64	
Pyrene	32.7	5.00	µg/L	50.0		65.4	52-120	1.64	49	
Surrogate: 2-Fluorophenol	*105*		µg/L	200		52.6	15-110			
Surrogate: Phenol-d6	*76.6*		µg/L	200		38.3	15-110			
Surrogate: Nitrobenzene-d5	*76.8*		µg/L	100		76.8	30-130			
Surrogate: 2-Fluorobiphenyl	*90.0*		µg/L	100		90.0	30-130			
Surrogate: 2,4,6-Tribromophenol	*168*		µg/L	200		84.2	15-110			
Surrogate: p-Terphenyl-d14	*73.7*		µg/L	100		73.7	30-130			
Matrix Spike (B254059-MS1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/13/20						
Acenaphthene	83.1	10.2	µg/L	102	ND	81.4	47-145			
Acenaphthylene	79.9	10.2	µg/L	102	ND	78.3	33-145			
Anthracene	88.7	10.2	µg/L	102	ND	87.0	27-133			
Benzo(g,h,i)perylene	106	10.2	µg/L	102	ND	104	10-219			
Butylbenzylphthalate	88.1	20.4	µg/L	102	ND	86.3	10-152			
Di-n-butylphthalate	90.8	20.4	µg/L	102	ND	89.0	10-120			
Diethylphthalate	87.5	20.4	µg/L	102	ND	85.7	10-120			
Dimethylphthalate	88.3	20.4	µg/L	102	ND	86.6	10-120			
Di-n-octylphthalate	117	20.4	µg/L	102	ND	114	4-146			
Bis(2-Ethylhexyl)phthalate	94.0	20.4	µg/L	102	ND	92.1	8-158			
Fluoranthene	91.0	10.2	µg/L	102	ND	89.1	26-137			
Fluorene	88.6	10.2	µg/L	102	ND	86.8	59-121			
Naphthalene	79.7	10.2	µg/L	102	ND	78.1	21-133			
Phenanthrene	89.6	10.2	µg/L	102	ND	87.8	54-120			
Phenol	56.4	20.4	µg/L	102	ND	55.3	5-120			
Pyrene	89.8	10.2	µg/L	102	ND	88.0	52-120			
Surrogate: 2-Fluorophenol	*257*		µg/L	408		62.9	15-110			
Surrogate: Phenol-d6	*241*		µg/L	408		59.0	15-110			
Surrogate: Nitrobenzene-d5	*159*		µg/L	204		77.7	30-130			
Surrogate: 2-Fluorobiphenyl	*196*		µg/L	204		96.2	30-130			
Surrogate: 2,4,6-Tribromophenol	*347*		µg/L	408		85.0	15-110			
Surrogate: p-Terphenyl-d14	*169*		µg/L	204		82.9	30-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254059 - SW-846 3510C										
Matrix Spike Dup (B254059-MSD1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/13/20						
Acenaphthene	62.2	9.43	µg/L	94.3	ND	66.0	47-145	28.7	48	
Acenaphthylene	60.0	9.43	µg/L	94.3	ND	63.6	33-145	28.4	74	
Anthracene	67.8	9.43	µg/L	94.3	ND	71.9	27-133	26.7	66	
Benzo(g,h,i)perylene	74.2	9.43	µg/L	94.3	ND	78.7	10-219	35.7	97	
Butylbenzylphthalate	66.1	18.9	µg/L	94.3	ND	70.0	10-152	28.6	60	
Di-n-butylphthalate	68.5	18.9	µg/L	94.3	ND	72.6	10-120	28.0	47	
Diethylphthalate	65.0	18.9	µg/L	94.3	ND	68.9	10-120	29.5	100	
Dimethylphthalate	65.8	18.9	µg/L	94.3	ND	69.8	10-120	29.2	183	
Di-n-octylphthalate	89.1	18.9	µg/L	94.3	ND	94.5	4-146	26.8	69	
Bis(2-Ethylhexyl)phthalate	70.0	18.9	µg/L	94.3	ND	74.2	8-158	29.3	82	
Fluoranthene	69.0	9.43	µg/L	94.3	ND	73.1	26-137	27.5	66	
Fluorene	66.0	9.43	µg/L	94.3	ND	69.9	59-121	29.3	38	
Naphthalene	59.7	9.43	µg/L	94.3	ND	63.3	21-133	28.6	65	
Phenanthrene	67.4	9.43	µg/L	94.3	ND	71.4	54-120	28.3	39	
Phenol	41.5	18.9	µg/L	94.3	ND	44.0	5-120	30.4	64	
Pyrene	65.9	9.43	µg/L	94.3	ND	69.9	52-120	30.6	49	
Surrogate: 2-Fluorophenol	*202*		µg/L	377		53.5	15-110			
Surrogate: Phenol-d6	*180*		µg/L	377		47.7	15-110			
Surrogate: Nitrobenzene-d5	*119*		µg/L	189		63.3	30-130			
Surrogate: 2-Fluorobiphenyl	*152*		µg/L	189		80.3	30-130			
Surrogate: 2,4,6-Tribromophenol	*263*		µg/L	377		69.6	15-110			
Surrogate: p-Terphenyl-d14	*134*		µg/L	189		71.3	30-130			

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QUALITY CONTROL

Polychlorinated Biphenyls By GC/ECD - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254013 - SW-846 3510C										
Blank (B254013-BLK1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Aroclor-1016	ND	0.0200	µg/L							
Aroclor-1016 [2C]	ND	0.0200	µg/L							
Aroclor-1221	ND	0.0200	µg/L							
Aroclor-1221 [2C]	ND	0.0200	µg/L							
Aroclor-1232	ND	0.0200	µg/L							
Aroclor-1232 [2C]	ND	0.0200	µg/L							
Aroclor-1242	ND	0.0200	µg/L							
Aroclor-1242 [2C]	ND	0.0200	µg/L							
Aroclor-1248	ND	0.0200	µg/L							
Aroclor-1248 [2C]	ND	0.0200	µg/L							
Aroclor-1254	ND	0.0200	µg/L							
Aroclor-1254 [2C]	ND	0.0200	µg/L							
Aroclor-1260	ND	0.0200	µg/L							
Aroclor-1260 [2C]	ND	0.0200	µg/L							
Surrogate: Decachlorobiphenyl	*0.190*		µg/L	0.200		94.9	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.169*		µg/L	0.200		84.5	30-150			
Surrogate: Tetrachloro-m-xylene	*0.177*		µg/L	0.200		88.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.161*		µg/L	0.200		80.3	30-150			
LCS (B254013-BS1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Aroclor-1016	0.518	0.200	µg/L	0.500		104	50-140			
Aroclor-1016 [2C]	0.465	0.200	µg/L	0.500		93.0	50-140			
Aroclor-1260	0.507	0.200	µg/L	0.500		101	8-140			
Aroclor-1260 [2C]	0.442	0.200	µg/L	0.500		88.3	8-140			
Surrogate: Decachlorobiphenyl	*1.71*		µg/L	2.00		85.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.48*		µg/L	2.00		74.1	30-150			
Surrogate: Tetrachloro-m-xylene	*1.80*		µg/L	2.00		90.2	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.62*		µg/L	2.00		81.2	30-150			
LCS Dup (B254013-BSD1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Aroclor-1016	0.490	0.200	µg/L	0.500		98.0	50-140	5.55		
Aroclor-1016 [2C]	0.437	0.200	µg/L	0.500		87.3	50-140	6.33		
Aroclor-1260	0.486	0.200	µg/L	0.500		97.2	8-140	4.37		
Aroclor-1260 [2C]	0.412	0.200	µg/L	0.500		82.5	8-140	6.86		
Surrogate: Decachlorobiphenyl	*1.80*		µg/L	2.00		89.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.57*		µg/L	2.00		78.5	30-150			
Surrogate: Tetrachloro-m-xylene	*1.68*		µg/L	2.00		84.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.50*		µg/L	2.00		75.2	30-150			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253977 - EPA 245.1										
Blank (B253977-BLK1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	ND	0.00010	mg/L							
LCS (B253977-BS1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00384	0.00010	mg/L	0.00400		95.9	85-115			
LCS Dup (B253977-BSD1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00393	0.00010	mg/L	0.00400		98.3	85-115	2.44	20	
Batch B253992 - EPA 200.8										
Blank (B253992-BLK1)				Prepared & Analyzed: 03/11/20						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							
LCS (B253992-BS1)				Prepared & Analyzed: 03/11/20						
Antimony	532	10	µg/L	500		106	85-115			
Arsenic	535	8.0	µg/L	500		107	85-115			
Cadmium	543	2.0	µg/L	500		109	85-115			
Chromium	525	10	µg/L	500		105	85-115			
Copper	1030	10	µg/L	1000		103	85-115			
Lead	527	5.0	µg/L	500		105	85-115			
Nickel	540	50	µg/L	500		108	85-115			
Selenium	535	50	µg/L	500		107	85-115			
Silver	504	2.0	µg/L	500		101	85-115			
Zinc	1090	100	µg/L	1000		109	85-115			
LCS Dup (B253992-BSD1)				Prepared & Analyzed: 03/11/20						
Antimony	545	10	µg/L	500		109	85-115	2.32	20	
Arsenic	543	8.0	µg/L	500		109	85-115	1.41	20	
Cadmium	555	2.0	µg/L	500		111	85-115	2.11	20	
Chromium	527	10	µg/L	500		105	85-115	0.428	20	
Copper	1060	10	µg/L	1000		106	85-115	2.34	20	
Lead	532	5.0	µg/L	500		106	85-115	0.840	20	
Nickel	544	50	µg/L	500		109	85-115	0.803	20	
Selenium	540	50	µg/L	500		108	85-115	0.763	20	
Silver	511	2.0	µg/L	500		102	85-115	1.30	20	
Zinc	1090	100	µg/L	1000		109	85-115	0.133	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253993 - EPA 200.7										
Blank (B253993-BLK1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Iron	ND	0.050	mg/L							
LCS (B253993-BS1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Iron	4.03	0.050	mg/L	4.00		101	85-115			
LCS Dup (B253993-BSD1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Iron	4.09	0.050	mg/L	4.00		102	85-115	1.51	20	
Batch B254134 - EPA 200.7										
Blank (B254134-BLK1)				Prepared: 03/12/20 Analyzed: 03/13/20						
Iron	ND	0.050	mg/L							
Hardness	ND	1.4	mg/L							
LCS (B254134-BS1)				Prepared: 03/12/20 Analyzed: 03/13/20						
Iron	3.85	0.050	mg/L	4.00		96.2	85-115			
Hardness	25	1.4	mg/L	26.5		94.3	85-115			
LCS Dup (B254134-BSD1)				Prepared: 03/12/20 Analyzed: 03/13/20						
Iron	3.96	0.050	mg/L	4.00		99.0	85-115	2.83	20	
Hardness	26	1.4	mg/L	26.5		96.7	85-115	2.55	20	
Duplicate (B254134-DUP1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/13/20						
Iron	ND	0.050	mg/L		ND			NC	20	
Hardness	87	1.4	mg/L		86			1.35		
Matrix Spike (B254134-MS1)	**Source: 20C0372-01**			Prepared: 03/12/20 Analyzed: 03/13/20						
Iron	3.88	0.050	mg/L	4.00	ND	97.0	70-130			
Hardness	110	1.4	mg/L	26.5	86	82.5	70-130			

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253984 - EPA 245.1 Dissolved										
Blank (B253984-BLK1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	ND	0.00010	mg/L							
LCS (B253984-BS1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00397	0.00010	mg/L	0.00400		99.3	85-115			
LCS Dup (B253984-BSD1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00407	0.00010	mg/L	0.00400		102	85-115	2.42	20	
Duplicate (B253984-DUP1)		**Source: 20C0372-01**		Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	ND	0.00010	mg/L		ND			NC	30	
Matrix Spike (B253984-MS1)		**Source: 20C0372-01**		Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00383	0.00010	mg/L	0.00400	ND	95.8	70-130			
Batch B253995 - EPA 200.7 Dissolved										
Blank (B253995-BLK1)				Prepared & Analyzed: 03/11/20						
Iron	ND	0.050	mg/L							
LCS (B253995-BS1)				Prepared & Analyzed: 03/11/20						
Iron	4.06	0.050	mg/L	4.00		102	85-115			
LCS Dup (B253995-BSD1)				Prepared & Analyzed: 03/11/20						
Iron	4.08	0.050	mg/L	4.00		102	85-115	0.360	20	
Duplicate (B253995-DUP1)		**Source: 20C0372-01**		Prepared & Analyzed: 03/11/20						
Iron	ND	0.050	mg/L		ND			NC	20	
Matrix Spike (B253995-MS1)		**Source: 20C0372-01**		Prepared & Analyzed: 03/11/20						
Iron	4.30	0.050	mg/L	4.00	0.0440	106	70-130			
Batch B253996 - EPA 200.8 Dissolved										
Blank (B253996-BLK1)				Prepared & Analyzed: 03/11/20						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							

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QUALITY CONTROL

Metals Analyses (Dissolved) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253996 - EPA 200.8 Dissolved										
LCS (B253996-BS1)				Prepared & Analyzed: 03/11/20						
Antimony	528	10	µg/L	500		106	85-115			
Arsenic	535	8.0	µg/L	500		107	85-115			
Cadmium	546	2.0	µg/L	500		109	85-115			
Chromium	523	10	µg/L	500		105	85-115			
Copper	1020	10	µg/L	1000		102	85-115			
Lead	520	5.0	µg/L	500		104	85-115			
Nickel	537	50	µg/L	500		107	85-115			
Selenium	536	50	µg/L	500		107	85-115			
Silver	506	2.0	µg/L	500		101	85-115			
Zinc	1060	100	µg/L	1000		106	85-115			
LCS Dup (B253996-BSD1)				Prepared & Analyzed: 03/11/20						
Antimony	541	10	µg/L	500		108	85-115	2.53	20	
Arsenic	544	8.0	µg/L	500		109	85-115	1.65	20	
Cadmium	558	2.0	µg/L	500		112	85-115	2.27	20	
Chromium	529	10	µg/L	500		106	85-115	1.14	20	
Copper	1040	10	µg/L	1000		104	85-115	1.13	20	
Lead	524	5.0	µg/L	500		105	85-115	0.748	20	
Nickel	542	50	µg/L	500		108	85-115	0.892	20	
Selenium	542	50	µg/L	500		108	85-115	1.08	20	
Silver	515	2.0	µg/L	500		103	85-115	1.72	20	
Zinc	1090	100	µg/L	1000		109	85-115	3.32	20	
Duplicate (B253996-DUP1)	**Source: 20C0372-01**			Prepared & Analyzed: 03/11/20						
Antimony	ND	1.0	µg/L		ND			NC	20	
Arsenic	ND	0.80	µg/L		ND			NC	20	
Cadmium	ND	0.20	µg/L		ND			NC	20	
Chromium	ND	1.0	µg/L		ND			NC	20	
Copper	3.86	1.0	µg/L		3.58			7.48	20	
Lead	ND	0.50	µg/L		ND			NC	20	
Nickel	ND	5.0	µg/L		ND			NC	20	
Selenium	ND	5.0	µg/L		ND			NC	20	
Silver	ND	0.20	µg/L		ND			NC	20	
Zinc	37.0	10	µg/L		36.5			1.37	20	
Matrix Spike (B253996-MS1)	**Source: 20C0372-01**			Prepared & Analyzed: 03/11/20						
Antimony	558	10	µg/L	500	ND	112	70-130			
Arsenic	565	8.0	µg/L	500	ND	113	70-130			
Cadmium	559	2.0	µg/L	500	ND	112	70-130			
Chromium	538	10	µg/L	500	ND	108	70-130			
Copper	1070	10	µg/L	1000	ND	107	70-130			
Lead	547	5.0	µg/L	500	ND	109	70-130			
Nickel	548	50	µg/L	500	ND	110	70-130			
Selenium	554	50	µg/L	500	ND	111	70-130			
Silver	512	2.0	µg/L	500	ND	102	70-130			
Zinc	1150	100	µg/L	1000	36.5	111	70-130			

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253851 - SM21-22 3500 Cr B										
Blank (B253851-BLK1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B253851-BS1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		105	83.9-121			
LCS Dup (B253851-BSD1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		107	83.9-121	2.43	10	
Batch B253856 - SM21-22 4500 CL G										
Blank (B253856-BLK1)				Prepared & Analyzed: 03/09/20						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B253856-BS1)				Prepared & Analyzed: 03/09/20						
Chlorine, Residual	1.3	0.020	mg/L	1.28		101	66.3-134			
LCS Dup (B253856-BSD1)				Prepared & Analyzed: 03/09/20						
Chlorine, Residual	1.3	0.020	mg/L	1.28		103	66.3-134	1.31	9.96	
Duplicate (B253856-DUP1)		**Source: 20C0372-01**		Prepared & Analyzed: 03/09/20						
Chlorine, Residual	ND	0.20	mg/L		ND			NC	32.5	W-06
Matrix Spike (B253856-MS1)		**Source: 20C0372-01**		Prepared & Analyzed: 03/09/20						
Chlorine, Residual	8.8	0.20	mg/L	10.0	ND	88.5	10-167			
Batch B253862 - SM21-22 2540D										
Blank (B253862-BLK1)				Prepared & Analyzed: 03/10/20						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B253862-BS1)				Prepared & Analyzed: 03/10/20						
Total Suspended Solids	186	10	mg/L	200		93.0	57.6-118			
Batch B254079 - EPA 300.0										
Blank (B254079-BLK1)				Prepared & Analyzed: 03/15/20						
Chloride	ND	1.0	mg/L							
LCS (B254079-BS1)				Prepared & Analyzed: 03/15/20						
Chloride	9.6		mg/L	10.0		96.1	90-110			

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B254079 - EPA 300.0										
LCS Dup (B254079-BSD1)				Prepared & Analyzed: 03/15/20						
Chloride	9.6		mg/L	10.0		96.2	90-110	0.105	20	
Duplicate (B254079-DUP1)	**Source: 20C0372-01**			Prepared & Analyzed: 03/15/20						
Chloride	170	10	mg/L		170			0.0259	20	
Matrix Spike (B254079-MS1)	**Source: 20C0372-01**			Prepared & Analyzed: 03/15/20						
Chloride	260	10	mg/L	100	170	85.7	80-120			
Batch B254164 - EPA 1664B										
Blank (B254164-BLK1)				Prepared & Analyzed: 03/13/20						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B254164-BS1)				Prepared & Analyzed: 03/13/20						
Silica Gel Treated HEM (SGT-HEM)	11		mg/L	10.0		106	64-132			
Batch B254574 - SM21-22 4500 H B										
LCS (B254574-BS1)				Prepared & Analyzed: 03/18/20						
pH	6.00		pH Units	6.00		100	90-110			

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253938 - SM21-22 3500 Cr B										
Blank (B253938-BLK1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B253938-BS1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		105	83.9-121			
LCS Dup (B253938-BSD1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		107	83.9-121	2.43	10	

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

608.3

LCS

Lab Sample ID: B254013-BS1 Date(s) Analyzed: 03/12/2020 03/12/2020

Instrument ID (1): ECD3 Instrument ID (2): ECD3

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.518	
	2	0.000	0.000	0.000	0.465	11.2
Aroclor-1260	1	0.000	0.000	0.000	0.507	
	2	0.000	0.000	0.000	0.442	14.3

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

608.3

LCS Dup

Lab Sample ID: B254013-BSD1 Date(s) Analyzed: 03/12/2020 03/12/2020

Instrument ID (1): ECD3 Instrument ID (2): ECD3

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Aroclor-1016	1	0.000	0.000	0.000	0.490	
	2	0.000	0.000	0.000	0.437	11.4
Aroclor-1260	1	0.000	0.000	0.000	0.486	
	2	0.000	0.000	0.000	0.412	17.3

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
W-06	Elevated method reporting limit due to intense color of sample

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
608.3 in Water	
Aroclor-1016	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1016 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1221 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1232 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1242 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1248 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1254 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260	CT,MA,NH,NY,RI,NC,ME,VA
Aroclor-1260 [2C]	CT,MA,NH,NY,RI,NC,ME,VA
624.1 in Water	
Acetone	CT,NY,MA,NH
tert-Amyl Methyl Ether (TAME)	MA
Benzene	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,2-Dichloroethylene	NY,MA
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
Ethanol	NY,MA,NH
Ethylbenzene	CT,NY,MA,NH,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NY,MA,NH,NC
Methylene Chloride	CT,NY,MA,NH,RI,NC,ME,VA
Naphthalene	NY,MA,NC
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,1,1-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Trichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
Vinyl Chloride	CT,NY,MA,NH,RI,NC,ME,VA
m+p Xylene	CT,NY,MA,NH,RI,NC
o-Xylene	CT,NY,MA,NH,RI,NC
625.1 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
625.1 in Water	
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,RI,NY,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 CN E in Water	
Cyanide	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 4500 H B in Water	
pH	CT,MA,RI

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

KLF

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20C0351 2

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

http://www.contestlabs.com

Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name:	Kleinfelder
Address:	One Beacon Street, Suite 8100, Boston, MA
Phone:	617-498-4679
Project Name:	CFI Hanover
Project Location:	1969 & 1987 Washington Street, Hanover, MA
Project Number:	20183351.006A
Project Manager:	Emily Straley
Con-Test Quote Name/Number:	
Invoice Recipient:	Emily Straley
Sampled By:	A. Bayliss, J. Fontaine

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: X 5-DAY TAT

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

Data Delivery
Format: PDF ☑ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐
Email To: msoule@kleinfelder.com; estraley
Fax To #:

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	Ammonia via 4500 NH3 C titration, Cyanide via method 4500 CN E Total Residual Chlorine-4500-Cl G and E; Chloride-300.0	Total Suspended Solids via SM2540D; Total Cr6 via 3500; pH -	Total Metals via 200.7 (iron), 200.8, 245.1 (mercury)*** Hardness via 200.8 -	Dissolved Metals via 200.7 (iron), 200.8, 245.1 (mercury)***	USEPA VOCs via 624* + ethanol	PAHs & phenols via 625 SIM**	Total PCBs 608	TPH via 1664 SGT HEM	
	RGP Sample	03-09-2020 0830	03-09-2020			GW	U									
1	RGP Sample	03-09-2020 0830	03-09-2020 0830		X	GW	U	X	X	X	X	X	X	X	X	
2	Trip Blank	03-09-2020 0000	03-09-2020 0000		X	GW	U					X				

# of Containers	1/1 | 1 | 2 | 3 | 2 | 5's | 15 | 2 | 2 | 1
[2] Preservation Code	S/X | I | I | N 4 | N 1 | H | 1/S | I | S |
[3] Container Code	P | P | P | P | P | V | A | A | A | V

Dissolved Metals Samples
✖ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

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

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

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

Comments: * Report full RGP list except for EDB and 1,4-dioxane (not required). 2 unpreserved voa vials included as TB
**Total Phthalates, Diethylhexyl phthalate, Group I and II PAHs, Napthalene, phenol, pentachlorophenol
***Sb, As, Cd, Cr3, Cr6, Cu, Fe (via 200.7), Pb, Hg, Ni, Se, Ag, Zn, Hg by 245.1, Cr6 via 3500

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

	Date/Time:
Relinquished by: (signature)	3/9/20 1200
Received by: (signature) KLF Sample Room	3/9/20 1200
Relinquished by: (signature)	3/9/2020
Received by: (signature)	3/9/2020 1430
Relinquished by: (signature)	3/9/2020
Received by: (signature)	Date/Time:

3.8, 5°7 3/9 1425

Detection Limit Requirements
MA
CT

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

Other: NPDES RGP
PWSID #

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

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

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Doc# 277 Rev 5 2017

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

Client Kleinfelder

Received By SA Date 3/9 Time 1825

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

Direct from Sampling ____ Ambient ____ Melted Ice ____

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 3.8, 5.7

By Blank # ____ Actual Temp - ____

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

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

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

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

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

Are Sample labels filled out and legible? T

Are there Lab to Filters? F

Are there Rushes? F

Are there Short Holds? (RW) F T

Is there enough Volume? T

Is there Headspace where applicable? F

Proper Media/Containers Used? T

Were trip blanks received? T

Do all samples have the proper pH? Acid IpHc2 T Base IpH712

Who was notified? ____

Who was notified? ____

Who was notified? Kahe

MS/MSD? F

Is splitting samples required? F

On COC? T

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	8	1 Liter Plastic	4	16 oz Amb.	
HCL-	5	500 mL Amb.	1	500 mL Plastic	2	8oz Amb/Clear	
Meoh-		250 mL Amb.	1	250 mL Plastic	5	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

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

Comments:

608 were neutral

ATTACHMENT D

Receiving Water Laboratory Analytical Data

con-test® ANALYTICAL LABORATORY
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March 16, 2020

Madeline Soule
Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108

Project Location: 1969 & 1987 Washington St, Hanover, MA
Client Job Number:
Project Number: 20183351.006A
Laboratory Work Order Number: 20C0373

Enclosed are results of analyses for samples received by the laboratory on March 9, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

Table of Contents

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

Kleinfelder - Cambridge, MA
1 Beacon Street, Suite 8100
Boston, MA 02108
ATTN: Madeline Soule

REPORT DATE: 3/16/2020

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 20183351.006A

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20C0373

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

PROJECT LOCATION: 1969 & 1987 Washington St, Hanover, MA

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Wetland	20C0373-01	Ground Water		EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 3500 Cr B	
				SM21-22 4500 H B	
				Tri Chrome Calc.	

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CASE NARRATIVE SUMMARY

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

SM21-22 4500 H B

Qualifications:

H-05

Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

Analyte & Samples(s) Qualified:

pH

20C0373-01[Wetland]

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

Lisa A. Worthington
Technical Representative

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0373

Date Received: 3/9/2020

Field Sample #: Wetland Sampled: 3/9/2020 08:15

Sample ID: 20C0373-01

Sample Matrix: Ground Water

Metals Analyses (Total)

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Arsenic	ND	0.80		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Cadmium	ND	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Chromium	ND	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Chromium, Trivalent	0.0			mg/L	1		Tri Chrome Calc.	3/11/20	3/11/20 20:39	QNW
Copper	1.7	1.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Iron	0.57	0.050		mg/L	1		EPA 200.7	3/10/20	3/10/20 22:04	TBC
Lead	1.5	0.50		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	3/11/20	3/12/20 9:39	CJV
Nickel	ND	5.0		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Zinc	ND	10		µg/L	1		EPA 200.8	3/11/20	3/11/20 20:39	QNW
Hardness	36	1.4		mg/L	1		EPA 200.7	3/10/20	3/10/20 22:04	TBC

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Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0373

Date Received: 3/9/2020

Field Sample #: Wetland Sampled: 3/9/2020 08:15

Sample ID: 20C0373-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	3/9/20	3/9/20 20:25	KMV
pH @17.2°C	6.8			pH Units	1	H-05	SM21-22 4500 H B	3/11/20	3/11/20 19:30	KMV

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

Project Location: 1969 & 1987 Washington St, Han Sample Description: Work Order: 20C0373

Date Received: 3/9/2020

Field Sample #: Wetland Sampled: 3/9/2020 08:15

Sample ID: 20C0373-01

Sample Matrix: Ground Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.074	0.075	0.024	mg/L	1		SM19-22 4500 NH3 C		3/12/20 21:40	AAL

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Sample Extraction Data

Prep Method: EPA 200.7 **Analytical Method: EPA 200.7**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0373-01 [Wetland]	B253931	50.0	50.0	03/10/20
20C0373-01 [Wetland]	B253931	50.0		03/10/20

Prep Method: EPA 200.8 **Analytical Method: EPA 200.8**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0373-01 [Wetland]	B253992	50.0	50.0	03/11/20

Prep Method: EPA 245.1 **Analytical Method: EPA 245.1**

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0373-01 [Wetland]	B253977	6.00	6.00	03/11/20

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20C0373-01 [Wetland]	B253851	50.0	50.0	03/09/20

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0373-01 [Wetland]	B254039	50.0	03/11/20

Prep Method: EPA 200.8 **Analytical Method: Tri Chrome Calc.**

Lab Number [Field ID]	Batch	Initial [mL]	Date
20C0373-01 [Wetland]	B253992	50.0	03/11/20

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253931 - EPA 200.7										
Blank (B253931-BLK1)				Prepared & Analyzed: 03/10/20						
Iron	ND	0.050	mg/L							
Hardness	ND	1.4	mg/L							
LCS (B253931-BS1)				Prepared & Analyzed: 03/10/20						
Iron	4.13	0.050	mg/L	4.00		103	85-115			
Hardness	27	1.4	mg/L	26.5		102	85-115			
LCS Dup (B253931-BSD1)				Prepared & Analyzed: 03/10/20						
Iron	4.18	0.050	mg/L	4.00		105	85-115	1.23	20	
Hardness	27	1.4	mg/L	26.5		103	85-115	0.399	20	
Batch B253977 - EPA 245.1										
Blank (B253977-BLK1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	ND	0.00010	mg/L							
LCS (B253977-BS1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00384	0.00010	mg/L	0.00400		95.9	85-115			
LCS Dup (B253977-BSD1)				Prepared: 03/11/20 Analyzed: 03/12/20						
Mercury	0.00393	0.00010	mg/L	0.00400		98.3	85-115	2.44	20	
Batch B253992 - EPA 200.8										
Blank (B253992-BLK1)				Prepared & Analyzed: 03/11/20						
Antimony	ND	1.0	µg/L							
Arsenic	ND	0.80	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	1.0	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	10	µg/L							
LCS (B253992-BS1)				Prepared & Analyzed: 03/11/20						
Antimony	532	10	µg/L	500		106	85-115			
Arsenic	535	8.0	µg/L	500		107	85-115			
Cadmium	543	2.0	µg/L	500		109	85-115			
Chromium	525	10	µg/L	500		105	85-115			
Copper	1030	10	µg/L	1000		103	85-115			
Lead	527	5.0	µg/L	500		105	85-115			
Nickel	540	50	µg/L	500		108	85-115			
Selenium	535	50	µg/L	500		107	85-115			
Silver	504	2.0	µg/L	500		101	85-115			
Zinc	1090	100	µg/L	1000		109	85-115			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253992 - EPA 200.8										
LCS Dup (B253992-BSD1)				Prepared & Analyzed: 03/11/20						
Antimony	545	10	µg/L	500		109	85-115	2.32	20	
Arsenic	543	8.0	µg/L	500		109	85-115	1.41	20	
Cadmium	555	2.0	µg/L	500		111	85-115	2.11	20	
Chromium	527	10	µg/L	500		105	85-115	0.428	20	
Copper	1060	10	µg/L	1000		106	85-115	2.34	20	
Lead	532	5.0	µg/L	500		106	85-115	0.840	20	
Nickel	544	50	µg/L	500		109	85-115	0.803	20	
Selenium	540	50	µg/L	500		108	85-115	0.763	20	
Silver	511	2.0	µg/L	500		102	85-115	1.30	20	
Zinc	1090	100	µg/L	1000		109	85-115	0.133	20	

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B253851 - SM21-22 3500 Cr B										
Blank (B253851-BLK1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B253851-BS1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		105	83.9-121			
LCS Dup (B253851-BSD1)				Prepared & Analyzed: 03/09/20						
Hexavalent Chromium	0.11	0.0040	mg/L	0.100		107	83.9-121	2.43	10	
Batch B254039 - SM21-22 4500 H B										
LCS (B254039-BS1)				Prepared & Analyzed: 03/11/20						
pH	5.98		pH Units	6.00		99.6	90-110			

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

FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
Hardness	CT,MA,NH,NY,RI,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 H B in Water	
pH	CT,MA,RI

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2017	100033	03/1/2022
MA	Massachusetts DEP	M-MA100	06/30/2020
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2021
NY	New York State Department of Health	10899 NELAP	04/1/2020
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2021
RI	Rhode Island Department of Health	LAO00112	12/30/2020
NC	North Carolina Div. of Water Quality	652	12/31/2020
NJ	New Jersey DEP	MA007 NELAP	06/30/2020
FL	Florida Department of Health	E871027 NELAP	06/30/2020
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2020
ME	State of Maine	2011028	06/9/2021
VA	Commonwealth of Virginia	460217	12/14/2020
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2020
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2020
NC-DW	North Carolina Department of Health	25703	07/31/2020
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2020

RTT

con-test ANALYTICAL LABORATORY

20C0513

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

http://www.contestlabs.com

Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

39 Spruce Street
East Longmeadow, MA 01028

Company Name:	Kleinfelder
Address:	One Beacon St, Suite 8100, Boston, MA 02108
Phone:	617-497-7800
Project Name:	CFI Hanover
Project Location:	1969 & 1987 Washington Street, Hanover, MA
Project Number:	20183351.006A
Project Manager:	Emily Straley
Con-Test Quote Name/Number:	
Invoice Recipient:	Emily Straley
Sampled By:	A. Bayliss

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: X 5 DAY TAT

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

Data Delivery
Format: PDF ☑ EXCEL ☑
Other:
CLP Like Data Pkg Required: ☐
Email To: msoule@kleinfelder.com; estraley
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	Ammonia via method4500 NH3 C titration;	Hardness via 200.8	Total Metals via 200.7 (iron), 200.8, 245.1 (mercury)*** + Hardness via 1	Total hexavalent chromium via 3500; pH											
								1	1	1	1											
								S	S	S	N											
								P	P	P	P											
1	Wetland	03-09-20 0815	03-09-20 0815		☑	GW	U	X	X	X	X											

ANALYSIS REQUESTED

# of Containers	
[2] Preservation Code	
[3] Container Code	

Dissolved Metals Samples
☒ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Comments: ***Sb, As, Cd, Cr3, Cr6, Cu, Fe (via 200.7), Pb, Hg, Ni, Se, Ag, Zn. Hg by 245.1, Cr6 via 3500

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

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

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

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

Relinquished by: (signature)	Date/Time: 3/9/20 1200	
Received by: (signature) KLF Sample Room	Date/Time: 3/9/20 1200	
Relinquished by: (signature)	Date/Time: 3/9/2020 1825	
Received by: (signature)	Date/Time: 3/9/2020 1430	
Relinquished by: (signature)	Date/Time: 3/9/20 1430	
Received by: (signature) 5.7 3/9 1430 1875	Date/Time: SA	

Detection Limit Requirements
MA
CT
Other: NPDES RGP

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

con-test ANALYTICAL LABORATORY
www.contestlabs.com

NELAC and AIHA-LAP, LLC Accredited

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

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

I Have Not Confirmed Sample Container Numbers With Lab Staff Before Relinquishing Over Samples_____

con-test® ANALYTICAL LABORATORY

Doc# 277 Rev 5 2017

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

Client Kleinfelder

Received By SA Date 3/9 Time ~~1130~~ SA 1825

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

Were samples within Temperature? 2-6°C T By Gun # 5 Actual Temp - 5.7
By Blank # _____ Actual Temp - _____

Was Custody Seal Intact? NA Were Samples Tampered with? NA
Was COC Relinquished ? T Does Chain Agree With Samples? T
Are there broken/leaking/loose caps on any samples? F
Is COC in ink/ Legible? T Were samples received within holding time? T
Did COC include all pertinent Information? Client T Analysis T Sampler Name T
Project T ID's T Collection Dates/Times T
Are Sample labels filled out and legible? T
Are there Lab to Filters? F Who was notified? _____
Are there Rushes? F Who was notified? _____
Are there Short Holds? KJ F T Who was notified? Kane.
Is there enough Volume? T
Is there Headspace where applicable? NA MS/MSD? F
Proper Media/Containers Used? T Is splitting samples required? F
Were trip blanks received? F On COC? F
Do all samples have the proper pH? Acid T Base NA

Vials	#	Containers	#		#		#
Unp-		1 Liter Amb.		1 Liter Plastic		16 oz Amb.	
HCL-		500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	3	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

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

Comments:

ATTACHMENT E

Fish and Wildlife Service Consistency Letter

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

IPaC Record Locator: 617-20529287 February 27, 2020

Subject: Consistency letter for the 'CFI Fall River MA8427' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Joseph Fontaine:

The U.S. Fish and Wildlife Service (Service) received on February 27, 2020 your effects determination for the 'CFI Fall River MA8427' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause "take"[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action's effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

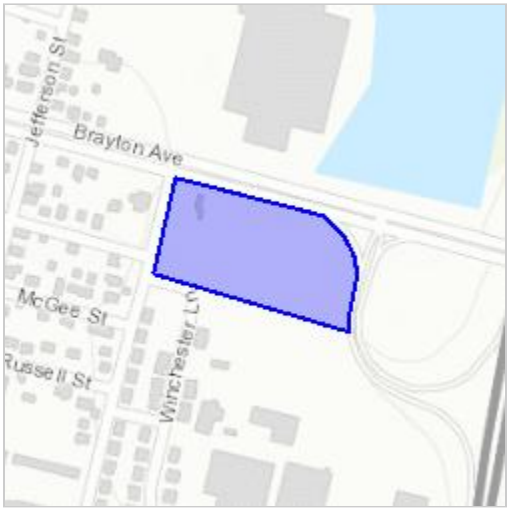
CFI Fall River MA8427

2. Description

The following description was provided for the project 'CFI Fall River MA8427':

> The project involves dewatering for the construction of a new convenience store and service station with a car wash. Dewatering is expected to occur during the installment of new underground storage tanks.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.681251775473655N71.14192621201042W



Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule
This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

   No

2. Will your activity purposefully **Take** northern long-eared bats?

   No

3. Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

   Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

   Yes

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

   No

6. Will the action involve Tree Removal?

   No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?
0

United States Department of the Interior

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

In Reply Refer To: February 27, 2020
Consultation Code: 05E1NE00-2020-SLI-1564
Event Code: 05E1NE00-2020-E-04520
Project Name: CFI Fall River MA8427

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

To Whom It May Concern:

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

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

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

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

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2020-SLI-1564

Event Code: 05E1NE00-2020-E-04520

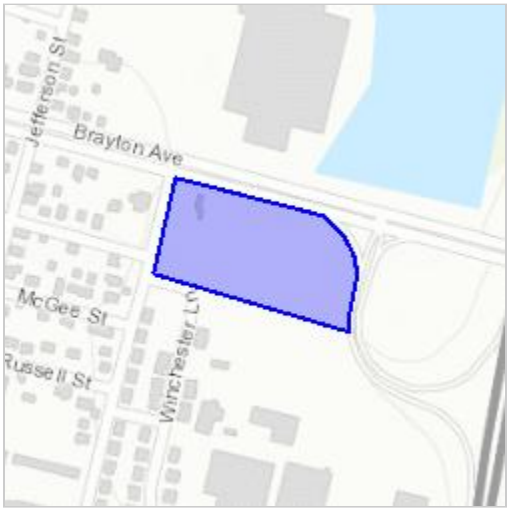
Project Name: CFI Fall River MA8427

Project Type: DREDGE / EXCAVATION

Project Description: The project involves dewatering for the construction of a new convenience store and service station with a car wash. Dewatering is expected to occur during the installment of new underground storage tanks.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/41.681251775473655N71.14192621201042W



Counties: Bristol, 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 Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

---

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

Mammals

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

Critical habitats

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

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: March 05, 2020
Consultation Code: 05E1NE00-2020-SLI-1640
Event Code: 05E1NE00-2020-E-04736
Project Name: CFI Hanover MA8667

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:

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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.

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This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2020-SLI-1640

Event Code: 05E1NE00-2020-E-04736

Project Name: CFI Hanover MA8667

Project Type: DEVELOPMENT

Project Description: The proposed project involves groundwater dewatering for the construction of a new convenience store
and service station within the 1969 and 1987 Washington Street, Hanover, Massachusetts properties. Dewatering is expected to occur during the installment of new underground storage tanks.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.153801948421844N70.8458640192175W

Counties: Plymouth, 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 Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

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

Critical habitats

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

ATTACHMENT F

Historic Properties Information

National Register of Historic Places

National Park Service
U.S. Department of the Interior

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. …

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Hanover; Street Name: washington St; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
HNV.911	North River Bridge Tablets	Old Washington St	Hanover	1904
HNV.224	Cardinal Cushing School - Sisters Inn	Washington St	Hanover	c 1748
HNV.395	Cardinal Cushing Center - Recreation Building	Washington St	Hanover	1959
HNV.398	Cardinal Cushing Center - Portiuncula Chapel	Washington St	Hanover	1953
HNV.399	Cardinal Cushing Center - Portiuncula Gift Shop	Washington St	Hanover	1954
HNV.400	Cardinal Cushing Center - Marian House	Washington St	Hanover	1990
HNV.401	Cardinal Cushing Center - Greenhouse	Washington St	Hanover	1990
HNV.402	Cardinal Cushing Center - Cushing Trader	Washington St	Hanover	c 1780
HNV.403	Cardinal Cushing Center - Bakery	Washington St	Hanover	1992
HNV.404	Cardinal Cushing Center - Freedom Hall	Washington St	Hanover	2003
HNV.405	Cardinal Cushing Center - McCann Hall	Washington St	Hanover	2003
HNV.406	Cardinal Cushing Center - Partnership Hall	Washington St	Hanover	2004
HNV.407	Cardinal Cushing Center - Building 3	Washington St	Hanover	2004
HNV.408	Cardinal Cushing Center - Building 4	Washington St	Hanover	2004
HNV.409	Cardinal Cushing Center - Springtime House	Washington St	Hanover	2004
HNV.410	Cardinal Cushing Center - Becker House	Washington St	Hanover	2004
HNV.411	Cardinal Cushing Center - Washington Street House	Washington St	Hanover	
HNV.412	Cardinal Cushing Center - Storage Barn	Washington St	Hanover	
HNV.413	Cardinal Cushing Center - Recycling Center	Washington St	Hanover	
HNV.913	Cardinal Cushing Center - Stations of the Cross and Path	Washington St	Hanover	1953
HNV.914	Cardinal Cushing Center - Statue of Saint Francis	Washington St	Hanover	1953
HNV.915	Cardinal Cushing Center - Stone Steps, Walls and Terrace	Washington St	Hanover	1953
HNV.916	Cardinal Cushing Center - Stone Wall	Washington St	Hanover	r 1850
HNV.917	Cardinal Cushing Center - Statue of Saint Mary	Washington St	Hanover	1947

Inv. No.	Property Name	Street	Town	Year
HNV.918	Cardinal Cushing Center - Statue of Saint Francis	Washington St	Hanover	1947
HNV.919	Cardinal Cushing Center - Statue of Saint Mary	Washington St	Hanover	1950
HNV.920	Cardinal Cushing Center Tunnel	Washington St	Hanover	1959
HNV.921	Cardinal Cushing Center Playing Field	Washington St	Hanover	c 1955
HNV.922	Cardinal Cushing Center Shipping Container	Washington St	Hanover	r 1980
HNV.923	Cardinal Cushing Center Swimming Pool	Washington St	Hanover	1959
HNV.925	Washington Street Stone Walls	Washington St	Hanover	r 1850
HNV.186	Cushing, Nathaniel and Mehitable Dodge House	25 Washington St	Hanover	c 1805
HNV.473	French, Dr. John Ordway Carriage House	25 Washington St	Hanover	1879
HNV.187	Sylvester, Samuel Salmond and Clara House	37 Washington St	Hanover	r 1885
HNV.379	Sylvester, Nathaniel House	40 Washington St	Hanover	c 1743
HNV.491	Sylvester, Edmund Q. Farm Worker Cottage	51 Washington St	Hanover	r 1912
HNV.492	Sylvester, Edmund Q. Farm Worker Cottage Garage	51 Washington St	Hanover	r 1920
HNV.188	Edwards, Alvin Garfield and Helene F. Morin House	64 Washington St	Hanover	c 1958
HNV.189	Sylvester, Edmund Q. House	65 Washington St	Hanover	c 1850
HNV.490	Sylvester, Edmund Q. Attached Barn	65 Washington St	Hanover	c 1850
HNV.926	Sylvester, Edmund Q. Farm Stone Walls	65 Washington St	Hanover	r 1850
HNV.927	Sylvester, Edmund Q. Farm Agricultural Fields	65 Washington St	Hanover	r 1850
HNV.493	Sylvester, Edmund Q. Former Barn	67 Washington St	Hanover	c 1850
HNV.494	Sylvester, Edmund Q. Farm Worker Cottage	69 Washington St	Hanover	c 1850
HNV.495	Sylvester, Edmund Q. Farm Worker Cottage Garage	69 Washington St	Hanover	c 1950
HNV.496	Sylvester, Edmund Q. Farm Worker Cottage	71 Washington St	Hanover	c 1850
HNV.497	Sylvester, Edmund Q. Farm Worker Cottage Garage	71 Washington St	Hanover	c 1950
HNV.190	Sylvester, Joseph Smith Carriage House	78 Washington St	Hanover	c 1900
HNV.191	Sylvester, Joseph Smith and Mary Ainsworth Lyman House	78 Washington St	Hanover	c 1900
HNV.377	Salmond Tack Factory Duplex	96-98 Washington St	Hanover	r 1853
HNV.474	Salmond Tack Factory Duplex English Barn	96-98 Washington St	Hanover	r 1853
HNV.192	Smith, Albert and Anne Lenthal Eells - Salmond, Samuel and Elizabeth Smith House	128 Washington St	Hanover	c 1810
HNV.475	Salmond, Elizabeth New England Barn	128 Washington St	Hanover	c 1879
HNV.376	Farrar, Henry A. and Martha A. Fairbanks House	148 Washington St	Hanover	c 1881
HNV.476	Farrar, Henry A. Carriage House	148 Washington St	Hanover	c 1881
HNV.477	Sausser, David Asbury House	158 Washington St	Hanover	c 1920
HNV.478	Sausser, David A. Secondary Residence and	158 Washington St	Hanover	c 1920

Inv. No.	Property Name	Street	Town	Year
	Garage			
HNV.375	Sylvester, Michael Robert House	167 Washington St	Hanover	c 1854
HNV.479	Sylvester, Michael Robert New England Barn	167 Washington St	Hanover	c 1854
HNV.374	Wright, Warren and Ruth J. Haskins House	176 Washington St	Hanover	c 1839
HNV.480	Wright, Warren New England Barn	176 Washington St	Hanover	c 1879
HNV.196	Stockbridge, Benjamin and Mary C. Crocker - David and Sarah B. Crocker Double House	183-185 Washington St	Hanover	c 1814
HNV.481	Bowker, Fred Walker and Lotta Wilson Brownville House	186 Washington St	Hanover	c 1915
HNV.482	Bowker, Fred Walker and Lotta Wilson Brownville Stable	186 Washington St	Hanover	c 1915
HNV.197	Hanover Academy Building	195 Washington St	Hanover	1808
HNV.483	Stetson and Hobill Provisions	195 Washington St	Hanover	r 1889
HNV.198	Bardin, Thomas - Wales, Atherton Tavern	199 Washington St	Hanover	c 1727
HNV.373	Flavell, John Henry Store	209 Washington St	Hanover	c 1885
HNV.214	Eells, Edward and Sarah Stetson House	232 Washington St	Hanover	r 1812
HNV.216	Stetson, Matthew and Hannah Lincoln House	233 Washington St	Hanover	r 1725
HNV.484	Eells Carriage House	233 Washington St	Hanover	r 1850
HNV.215	Cushman, Jotham and Rachel Hobart House	240-242 Washington St	Hanover	c 1812
HNV.217	Eells, Robert and Mary T. Stockbridge House	243 Washington St	Hanover	c 1841
HNV.485	Eells, Robert New England Barn	243 Washington St	Hanover	c 1841
HNV.218	Bates, William Forrest and Fannie S. Whiting House	257 Washington St	Hanover	r 1891
HNV.361	Waterman, Rodolphus C. and M. Adele Tomlinson House	262 Washington St	Hanover	c 1866
HNV.219		265 Washington St	Hanover	c 1853
HNV.220	Barstow, Capt. Nathaniel and Abby Hammett - Cushing, Dea. Thomas and Ruth Turner House	275 Washington St	Hanover	c 1835
HNV.486	Tower, Horace S. and Helen A. Barker House	287 Washington St	Hanover	c 1877
HNV.221	Saint Andrew's Episcopal Church Rectory	288 Washington St	Hanover	1849
HNV.487	Saint Andrew's Episcopal Church Rectory Carriage House	288 Washington St	Hanover	c 1849
HNV.488	Green, William C. and Helen M. Talbot House	309 Washington St	Hanover	c 1926
HNV.489	Mayberry, Frederick Albert and Martina Carmalita Gallagher House	322 Washington St	Hanover	c 1946
HNV.222	Sylvester, Robert and Lucy Bailey - Bailey, John and Ruth Ellis House	323 Washington St	Hanover	c 1796
HNV.396	Cardinal Cushing Center - Kennedy Building	369 Washington St	Hanover	1957
HNV.225	Sylvester, Robert House - Sylvester Mansion	405 Washington St	Hanover	c 1763
HNV.359	Knights of Columbus Culinary Arts Building	405 Washington St	Hanover	c 1824
HNV.393	Cardinal Cushing Center - Adminstration Building	405 Washington St	Hanover	1950

Inv. No.	Property Name	Street	Town	Year
HNV.394	Cardinal Cushing Center - Physiotherapy Center	423 Washington St	Hanover	1971
HNV.228	Perry, Isaac and Betsy Chubbuck House	551 Washington St	Hanover	c 1760
HNV.229		596 Washington St	Hanover	c 1815
HNV.294		1070 Washington St	Hanover	c 1835
HNV.300		1143 Washington St	Hanover	c 1840
HNV.15		1775 Washington St	Hanover	c 1800
HNV.6		2035 Washington St	Hanover	c 1840
HNV.7		2048 Washington St	Hanover	c 1810
HNV.5		2071 Washington St	Hanover	r 1800
HNV.4		2103 Washington St	Hanover	r 1840
HNV.296	Brooks and Young General Store	2108-2110 Washington St	Hanover	c 1840
HNV.2		2122 Washington St	Hanover	r 1850
HNV.1		2144 Washington St	Hanover	r 1700