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

February 19, 2020

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

Reference: **Notice of Intent (NOI) - Remediation General Permit (RGP)**
Grafton Library
35 Grafton Common
Grafton, Massachusetts

Dear Sir/Madam:

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

Site Information

This NOI has been prepared for the management of water that will be generated during dewatering activities associated with the construction of a new addition for the Grafton Library located at 35 Grafton Common in Grafton, Massachusetts (the Site). The construction activities are anticipated to be completed within twelve months. A Site Locus is provided as **Figure 1.** A Site Plan satisfying the requirements of RGP Appendix IV Part I.B and I.D is provided as **Figure 2**.

Regulatory Status

MassDEP RTN 2-21121

The subject site has been assigned Release Tracking Number (RTN) 2-21121 by the Massachusetts Department of Environmental Protection (MassDEP), effective January 13, 2020. RTN 2-21121 was issued due to the discovery of Total Petroleum Hydrocarbons in soil exceeding the applicable MassDEP RCS-1 reportable concentration, which constituted a 120-day reporting condition. Limited information is available at this time.

Work Summary

The project includes the construction of a new addition for the existing Grafton Library building, including foundation, utilities, a retaining pond and a parking lot. To complete portions of the excavations in the dry, dewatering will be required to lower the groundwater table as the work is being performed. To do this, filtered sumps will be placed in low spots within the excavation. The water generated during dewatering (Source water) will be pumped to a treatment system prior to discharge to a storm drain with a final outfall in Lake Ripple. To characterize groundwater from the proposed excavation area, LRT collected representative groundwater samples from a monitoring well on site on February 3, 2020. A sample of the receiving water (Lake Ripple) was collected on the same day. The samples were analyzed for various parameters in accordance with the NPDES RGP Activity Category III-G.

Discharge and Receiving Surface Water Information

A summary of the analytical results is provided as **Tables 1** and **2** included within **Appendix A**. Copies of the laboratory analytical reports are provided in **Appendix B**. To meet the NPDES RGP effluent standards, Source water will undergo treatment that includes primary settling, followed by bag filtration and carbon treatment prior to discharge. Details of the water treatment system are provided below.

Water Treatment System

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

Source water will be pumped to a treatment system with a design flow of up to 100 gallons per minute (gpm); the average effluent flow of the system is estimated to be 75 gpm, and the maximum flow will not exceed 100 gpm. Source water will enter one 18,000-gallon weir tank at the head of the system. From the weir tank, the water will be pumped to a triple-bag filter skid (with three single bag filters) for bag filtration, followed by two carbon vessels plumbed in series. Each carbon vessel will contain 2,000 pounds of reactivated liquid-phase carbon. Discharge from the carbon vessel will pass through a flow meter/totalizer prior to discharge into a storm drain with an outfall in Lake Ripple. If free product is found during the dewatering and/or construction activities, an oil water separator (OWS) will be added after the weir tank to remove the product prior to passing through the treatment system. The discharge of treated water will be at one location (Discharge Location 001) as depicted on **Figure 2**. Effluent sampling will correspond with this discharge location.

Consultation with Federal Services

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

Habitats of Rare Species, Estimated Habitats of Rare Wildlife. The existing Grafton Library building at the Site is listed as a historic building in Massachusetts, however a determination was made that the proposed discharge activities will not impact the historic building. Documentation and determinations are included in **Appendix D**.

Coverage under NPDES RGP

It is our opinion that the proposed discharge is eligible for coverage under the NPDES RGP. On behalf of the Town of Grafton, we are requesting coverage under the NPDES RGP for the discharge of treated wastewater to Lake Ripple in support of construction dewatering activities that are to take place at the Grafton Library.

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

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

Sincerely,
Lockwood Remediation Technologies, LLC

Jacob Jennings

Jacob Jennings
Staff Scientist

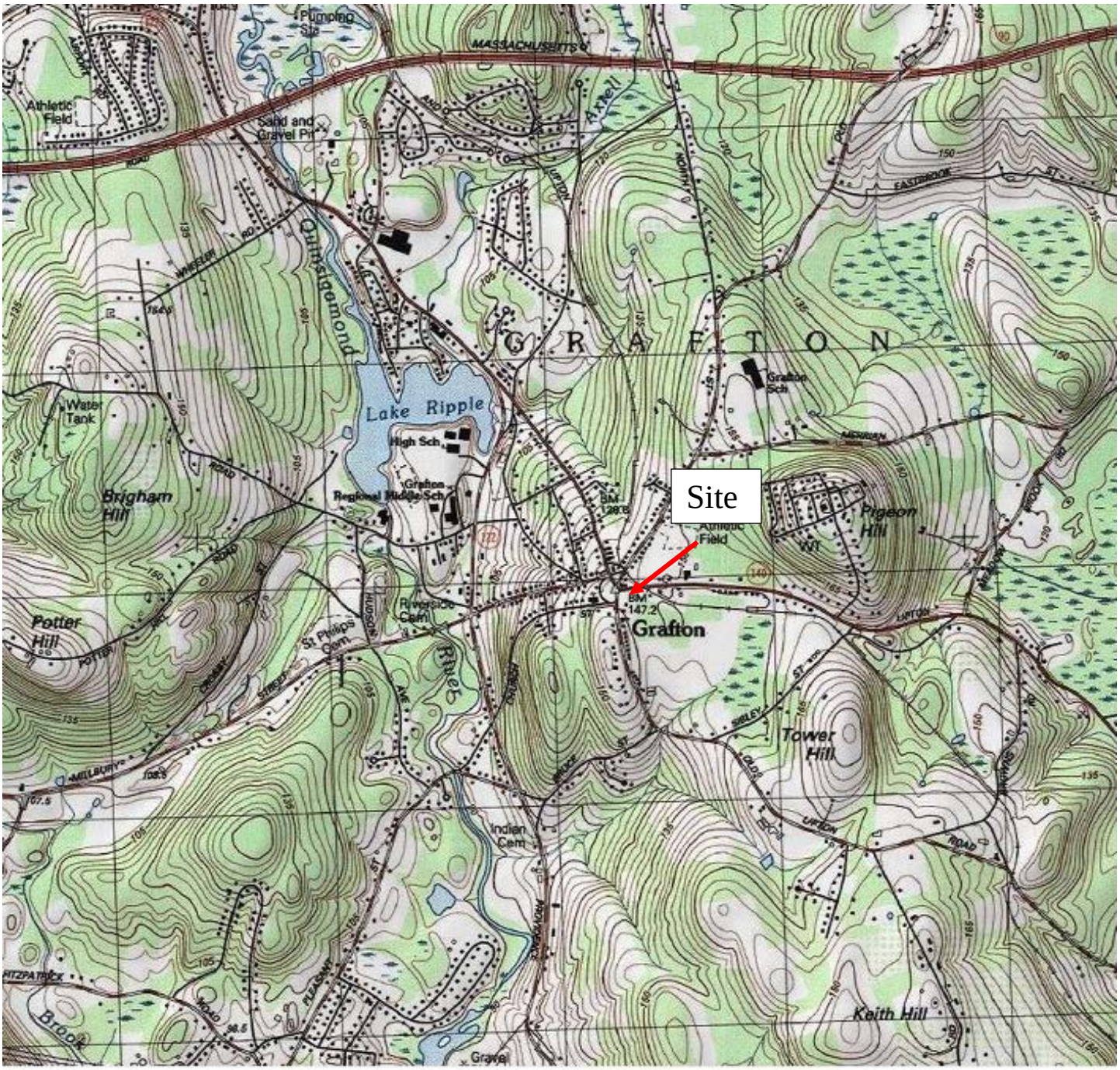
Brian Caccavale

Brian Caccavale
Project Manager

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

cc: Andrew Deschenes – Town of Grafton (via email)
Michael Macinnes – J. Derenzo Company (via email)
Catherine Vakalopoulos – MassDEP (via email)

Figures



Source: Arc GIS online

Notes

1. Figure is not to scale.

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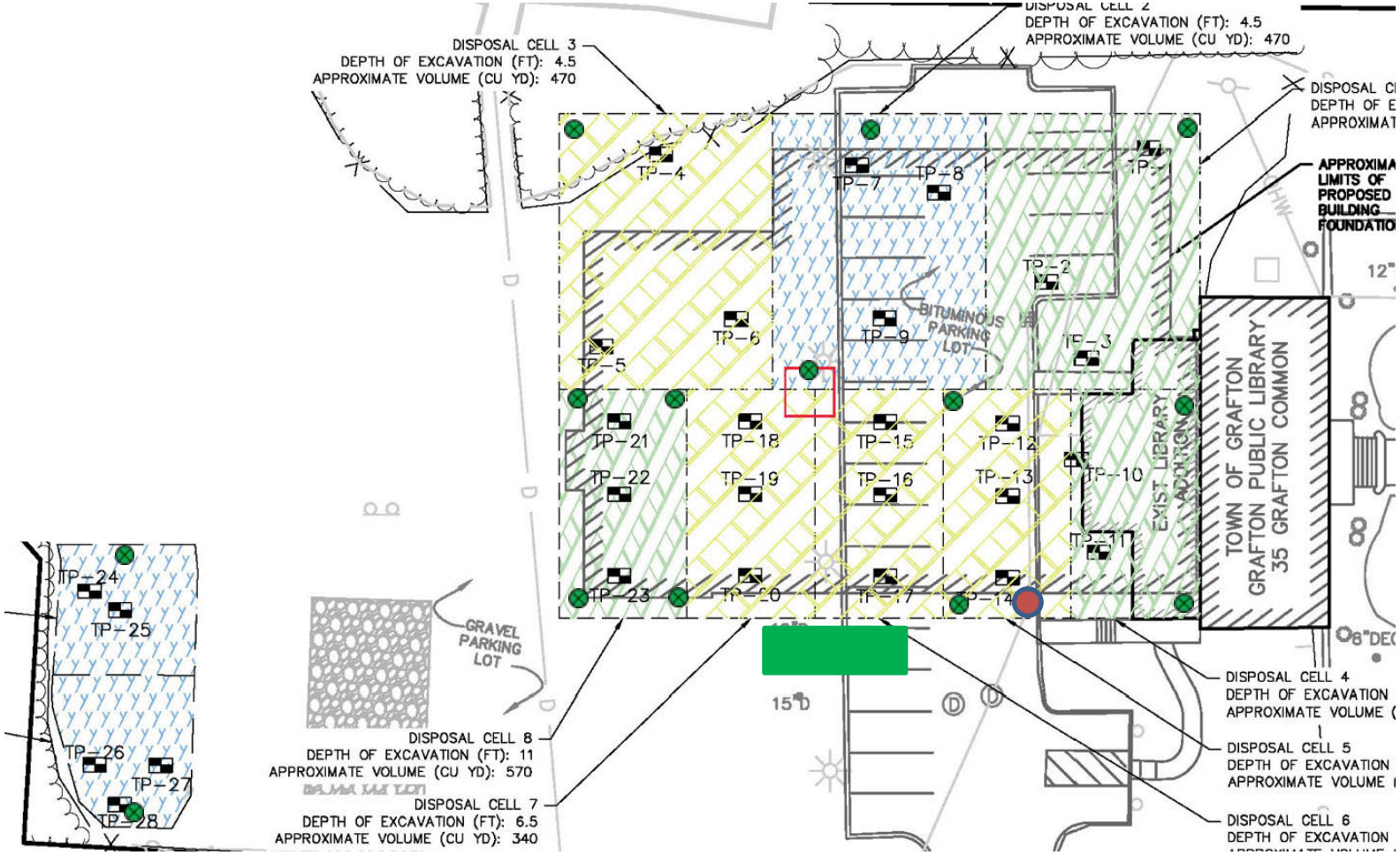
Figure 1 – Locus Plan
Grafton Public Library
35 Grafton Common
Grafton, MA



Notes

1. Figure is not to scale

Key:
Dewatering Sump
Discharge Point
Water Treatment System

Lockwood Remediation Technologies LLC

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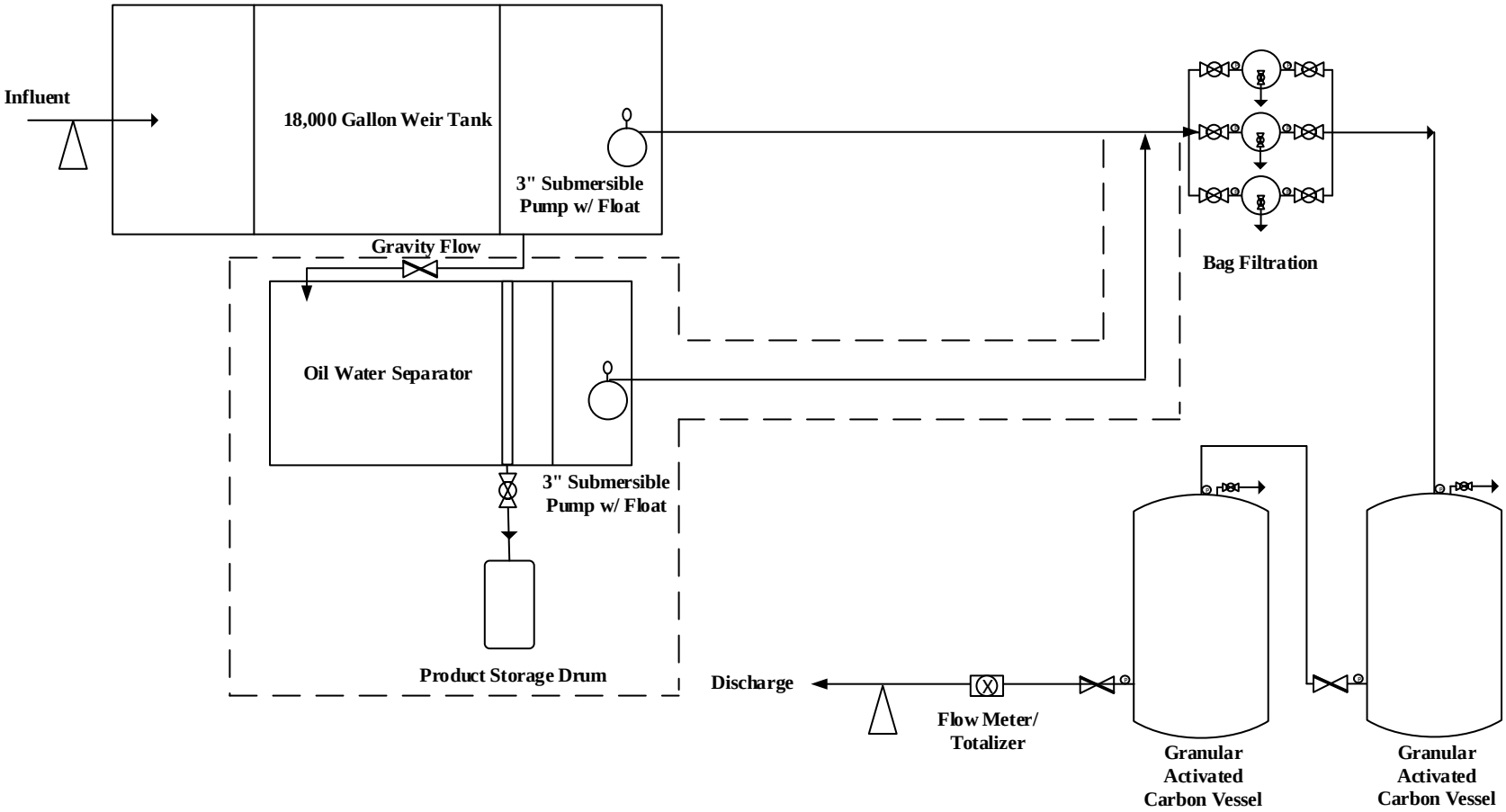
Figure 2 – Site Plan
Grafton Public Library
35 Grafton Common
Grafton, MA



Notes:

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

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

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

DESIGNED BY: LRT DRAWN BY: JHJ

CHECKED BY: DATE: 2/13/2020

Figure 4 - Water Treatment System Schematic

Grafton Public Library
35 Grafton Common
Grafton, MA

PROJECT No. 2-1979

FIGURE No. 3

Appendix A
NOI Form

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

A. General site information:

<table>
<tr><td rowspan="2">1. Name of site:
Grafton Public Library</td><td colspan="3">Site address: 35 Grafton Common
Street:</td></tr>
<tr><td>City: Grafton</td><td>State: MA</td><td>Zip: 01519</td></tr>
<tr><td rowspan="4">2. Site owner
Town of Grafton

Owner is (check one): ☐ Federal ■ State/Tribal ☐ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Andrew Deschenes</td></tr>
<tr><td colspan="2">Telephone: 774-922-4512</td><td>Email: deschenesa@grafton-ma.gov</td></tr>
<tr><td colspan="3">Mailing address: 30 Providence Road
Street:</td></tr>
<tr><td>City: Grafton</td><td>State: MA</td><td>Zip: 01519</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner</td><td colspan="3">Contact Person:</td></tr>
<tr><td colspan="2">Telephone:</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street:</td></tr>
<tr><td>City:</td><td>State:</td><td>Zip:</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
2-21121
☐ 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):
Lake Ripple	MA51135	Class B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. No TMDLs aquatic plants

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.	0.0161
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.	1.07

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: 2/4/2020

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: Inorgancis, Non-Halogenated Semi-Volatile Organic Compounds	
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in the RGP? (check one): ☐ Yes ☐ No If yes, indicate the contaminant(s) and the maximum concentration present in accordance with the instructions in Appendix VIII.	b. For a source water that is a surface water other than the receiving water, potable water or other, indicate any contaminants present at the maximum concentration in accordance with the instructions in Appendix VIII? (check one): ☐ Yes ☐ No
3. Has the source water been previously chlorinated or otherwise contains residual chlorine? (check one): ☐ Yes ■ No	

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): 001	Outfall location(s): (Latitude, Longitude) 42.206291, -71684135
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Treated water will be discharged to a storm water catch basin with a final outfall in Ripple Lake ☐ 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: 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): 3/1/2020 - 10/31/2020 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	1	4500NH3	24	298	298	Report mg/L	---
Chloride		✔	1	300.0	25000	89000	89000	Report µg/l	---
Total Residual Chlorine	✔		1	4500CL	20	<20	<20	0.2 mg/L	12
Total Suspended Solids		✔	1	2540D	830	2300	2300	30 mg/L	---
Antimony	✔		1	200.8	1	<1	<1	206 µg/L	
Arsenic		✔	1	200.8	0.80	2.3	2.3	104 µg/L	
Cadmium		✔	1	200.8	0.2	0.36	0.36	10.2 µg/L	0.3166
Chromium III	✔		1	200.8	1	<1	<1	323 µg/L	
Chromium VI	✔		1	3500CR	8	<8	<8	323 µg/L	
Copper		✔	1	200.8	1	11	11	242 µg/L	
Iron		✔	1	200.7	50	4600	4600	5,000 µg/L	1011
Lead		✔	1	200.8	0.5	5.3	5.3	160 µg/L	4.30
Mercury	✔		1	245.1	0.01	<0.01	<0.01	0.739 µg/L	
Nickel	✔		1	200.8	5	<5	<5	1,450 µg/L	
Selenium	✔		1	200.8	5	<5	<5	235.8 µg/L	
Silver	✔		1	200.8	0.2	<0.2	<0.2	35.1 µg/L	
Zinc		✔	1	200.8	10	87	87	420 µg/L	
Cyanide	✔		1	4500CN	5	<5	<5	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔			624.1		<		100 µg/L	---
Benzene	✔		1	624.1	0.180	<0.180	<0.180	5.0 µg/L	---
1,4 Dioxane	✔		1	624.1	22.5	<22.5	<22.5	200 µg/L	---
Acetone	✔		1	624.1	3.79	<3.79	<3.79	7.97 mg/L	---
Phenol	✔		1	625.1	9.80	<9.80	<9.80	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	624.1	0.110	<0.110	<0.110	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	624.1	0.160	<0.160	<0.160	600 µg/L	---
1,3 Dichlorobenzene	✔		1	624.1	0.120	<0.120	<0.120	320 µg/L	---
1,4 Dichlorobenzene	✔		1	624.1	0.130	<0.130	<0.130	5.0 µg/L	---
Total dichlorobenzene	✔			624.1				763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624.1	0.160	<0.160	<0.160	70 µg/L	---
1,2 Dichloroethane	✔		1	624.1	0.410	<0.410	<0.410	5.0 µg/L	---
1,1 Dichloroethylene			1	624.1	0.320	<0.320	<0.320	3.2 µg/L	---
Ethylene Dibromide	✔		1	504.1	0.013	<0.013	<0.013	0.05 µg/L	---
Methylene Chloride	✔		1	624.1	0.340	<0.340	<0.340	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624.1	0.200	<0.200	<0.200	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624.1	0.160	<0.160	<0.160	5.0 µg/L	---
Trichloroethylene	✔		1	624.1	0.240	<0.240	<0.240	5.0 µg/L	---
Tetrachloroethylene	✔		1	624.1	0.180	<0.180	<0.180	5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	624.1	0.310	<0.310	<0.310	70 µg/L	---
Vinyl Chloride	✔		1	624.1	0.450	<0.450	<0.450	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔			625.1		<2.2	<2.2	190 µg/L	
Diethylhexyl phthalate	✔		1	625.1	9.8	<9.8	<9.8	101 µg/L	
Total Group I PAHs		✔		625.1		0.031	0.031	1.0 µg/L	---
Benzo(a)anthracene		✔	1	625.1	0.016	0.016	0.016	As Total PAHs	0.0041
Benzo(a)pyrene	✔		1	625.1	0.012	<0.012	<0.012		
Benzo(b)fluoranthene	✔		1	625.1	0.015	<0.015	<0.015		
Benzo(k)fluoranthene	✔		1	625.1	0.012	<0.012	<0.012		
Chrysene		✔	1	625.1	0.015	0.015	0.015		0.0041
Dibenzo(a,h)anthracene	✔		1	625.1	0.017	<0.017	<0.017		
Indeno(1,2,3-cd)pyrene	✔		1	625.1	0.018	<0.018	<0.018		

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		✔		625.1		6.61	6.61	100 µg/L	---
Naphthalene	✔		1	625.1	4.90	<4.90	<4.90	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608.3	0.0985	<.0.0985	<.0.0985	0.000064 µg/L	---
Pentachlorophenol	✔		1	625.1	0.33	<0.33	<0.33	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		1	1664B	1600	<1600	<1600	5.0 mg/L	---
Ethanol	✔		1	624.1	10.5	<10.5	<10.5	Report mg/L	---
Methyl-tert-Butyl Ether	✔		1	624.1	0.25	<0.25	<0.25	70 µg/L	
tert-Butyl Alcohol	✔		1	624.1	4.17	<4.17	<4.17	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624.1	0.140	<0.140	<0.140	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		✔				6.7	6.7		
Hardness		✔	1	200.7		130000	130000		
Receiving water									
Arsenic		✔	1	200.8	0.80	0.83	0.83		
Chromium III		✔	1		1.0	1.6	1.6		
Copper		✔	1	200.8	1.0	3.5	3.5		
Iron		✔	1	200.7	50	850	850		
Lead		✔	1	200.8	0.5	2.3	2.3		
Zinc		✔	1	200.8	10	17	17		
Hardness		✔	1	200.7	1400	35000	35000		
Ammonia		✔	1	4500 HN3	2.4	31	31		
pH		✔				7.0	7.0		

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.

Source water will be pumped from the excavation to a 18,000 gallon weir tank for primary settling. water will then be pumped to a triple bag filter skid (with three single bag filter housings), followed by two carbon vessels plumbed in series. Each carbon vessel will contain 2,000 pounds of reactivated carbon. Discharge from the carbon vessles will pass through a flow meter/totalizer prior to discharge to a catch basin that has a final outfall in Ripple Lake. An oil water separator will be added after the weir tank if free product is found during dewatering.

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: Carbon Vessels Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	100
Provide the proposed maximum effluent flow in gpm.	100
Provide the average effluent flow in gpm.	75
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

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

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

J. Certification requirement

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

BMPP certification statement: A BMPP will be developed and maintained to meet the requirements of this permit. The BMPP will be implemented on-site prior to the initiation of discharge.

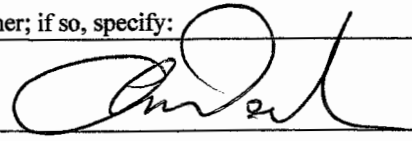
Notification provided to the appropriate State, including a copy of this NOI, if required. Check one: Yes ■ No ☐

Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested. Check one: Yes ■ No ☐

Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested. Check one: Yes ■ No ☐ NA ☐

Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission. Check one: Yes ■ No ☐ NA ☐

Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify: Check one: Yes ☐ No ☐ NA ■

Signature:  Date: 2/18/2020

Print Name and Title: Andrew Deschenes, Project Manager

Enter number values in green boxes below

Enter values in the units specified

↓

0.0104	Q_R = Enter upstream flow in **MGD**
0.144	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

1.07

Enter values in the units specified

↓

130	C_d = Enter influent hardness in **mg/L** $CaCO_3$
35	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7	pH in **Standard Units**
1.2	Temperature in **^oC**
0.031	Ammonia in **mg/L**
35	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0.83	Arsenic in **µg/L**
0	Cadmium in **µg/L**
1.6	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
3.5	Copper in **µg/L**
850	Iron in **µg/L**
2.3	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
17	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0	Ammonia in **mg/L**
0	Antimony in **µg/L**
2.3	Arsenic in **µg/L**
0.36	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
11	Copper in **µg/L**
4600	Iron in **µg/L**
5.3	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
87	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0.016	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0.015	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Dilution Factor	1.1			
	TBEL applies if bolded		WQBEL applies if bolded	
A. Inorganics				
Ammonia	**Report**	mg/L	---	
Chloride	**Report**	µg/L	---	
Total Residual Chlorine	0.2	mg/L	**12**	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	686	µg/L
Arsenic	**104**	µg/L	11	µg/L
Cadmium	10.2	µg/L	**0.3166**	µg/L
Chromium III	**323**	µg/L	109.8	µg/L
Chromium VI	**323**	µg/L	12.3	µg/L
Copper	**242**	µg/L	11.7	µg/L
Iron	5000	µg/L	**1011**	µg/L
Lead	160	µg/L	**4.30**	µg/L
Mercury	**0.739**	µg/L	0.97	µg/L
Nickel	**1450**	µg/L	66.9	µg/L
Selenium	**235.8**	µg/L	5.4	µg/L
Silver	**35.1**	µg/L	5.8	µg/L
Zinc	**420**	µg/L	152.5	µg/L
Cyanide	**178**	mg/L	5.6	µg/L
B. Non-Halogenated VOCs				
Total BTEX	**100**	µg/L	---	
Benzene	**5.0**	µg/L	---	
1,4 Dioxane	**200**	µg/L	---	
Acetone	**7970**	µg/L	---	
Phenol	**1,080**	µg/L	322	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	1.7	µg/L
1,2 Dichlorobenzene	**600**	µg/L	---	
1,3 Dichlorobenzene	**320**	µg/L	---	
1,4 Dichlorobenzene	**5.0**	µg/L	---	
Total dichlorobenzene	**---**	µg/L	---	
1,1 Dichloroethane	**70**	µg/L	---	
1,2 Dichloroethane	**5.0**	µg/L	---	
1,1 Dichloroethylene	**3.2**	µg/L	---	
Ethylene Dibromide	**0.05**	µg/L	---	
Methylene Chloride	**4.6**	µg/L	---	
1,1,1 Trichloroethane	**200**	µg/L	---	
1,1,2 Trichloroethane	**5.0**	µg/L	---	
Trichloroethylene	**5.0**	µg/L	---	
Tetrachloroethylene	**5.0**	µg/L	3.5	µg/L
cis-1,2 Dichloroethylene	**70**	µg/L	---	

Vinyl Chloride	**2.0**	µg/L	---	
D. Non-Halogenated SVOCs				
Total Phthalates	**190**	µg/L	---	µg/L
Diethylhexyl phthalate	**101**	µg/L	2.4	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	1.0	µg/L	**0.0041**	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0041	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0041	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0041	µg/L
Chrysene	1.0	µg/L	**0.0041**	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0041	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0041	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---	
Naphthalene	**20**	µg/L	---	
E. Halogenated SVOCs				
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---	
Pentachlorophenol	**1.0**	µg/L	---	
F. Fuels Parameters				
Total Petroleum Hydrocarbons	**5.0**	mg/L	---	
Ethanol	**Report**	mg/L	---	
Methyl-tert-Butyl Ether	**70**	µg/L	21	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

Stormwater Outfall Map

From:	Jamie Bennett
To:	Jake Jennings
Subject:	FW: [Town of Grafton MA] NPDES Permit - Grafton Library Construction (Sent by James Bennett, jbennett@lrt-llc.net)
Date:	Tuesday, January 21, 2020 12:42:27 PM

See the NPDES Info from the town of Grafton

James Bennett
Project Manager/Estimator

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
O: 774-450-7177
C: 774-450-5269
jbennett@lrt-llc.net

-----Original Message-----
From: Paul Cournoyer <cournoyerp@grafton-ma.gov>
Sent: Tuesday, January 21, 2020 12:39 PM
To: Jamie Bennett <jbennett@lrt-llc.net>; Brian Szczurko <szczurkob@grafton-ma.gov>
Cc: Andy Deschenes <deschenesa@grafton-ma.gov>
Subject: RE: [Town of Grafton MA] NPDES Permit - Grafton Library Construction (Sent by James Bennett, jbennett@lrt-llc.net)

Attached is the drainage map of the area. The drains on Upton Street and South tie together just off the map and flow to an outfall at Lake Ripple, so either location will work. The pipe in Upton Street is 15". Please let us know if you need any further information or clarification.

Paul F. Cournoyer
Town of Grafton
Director of Public Works
30 Providence Road
Grafton, MA.01519
508-839-8526 cournoyerp@grafton-ma.gov

-----Original Message-----
From: cmsmailer@civicplus.com [mailto:cmsmailer@civicplus.com]
Sent: Monday, January 20, 2020 9:10 AM
To: DPW@grafton-ma.gov
Subject: [Town of Grafton MA] NPDES Permit - Grafton Library Construction (Sent by James Bennett, jbennett@lrt-llc.net)

Hello Department of Public Works and Engineering,

James Bennett (jbennett@lrt-llc.net) has sent you a message via your contact form (https://www.grafton-ma.gov/user/14826/contact) at Town of Grafton MA.

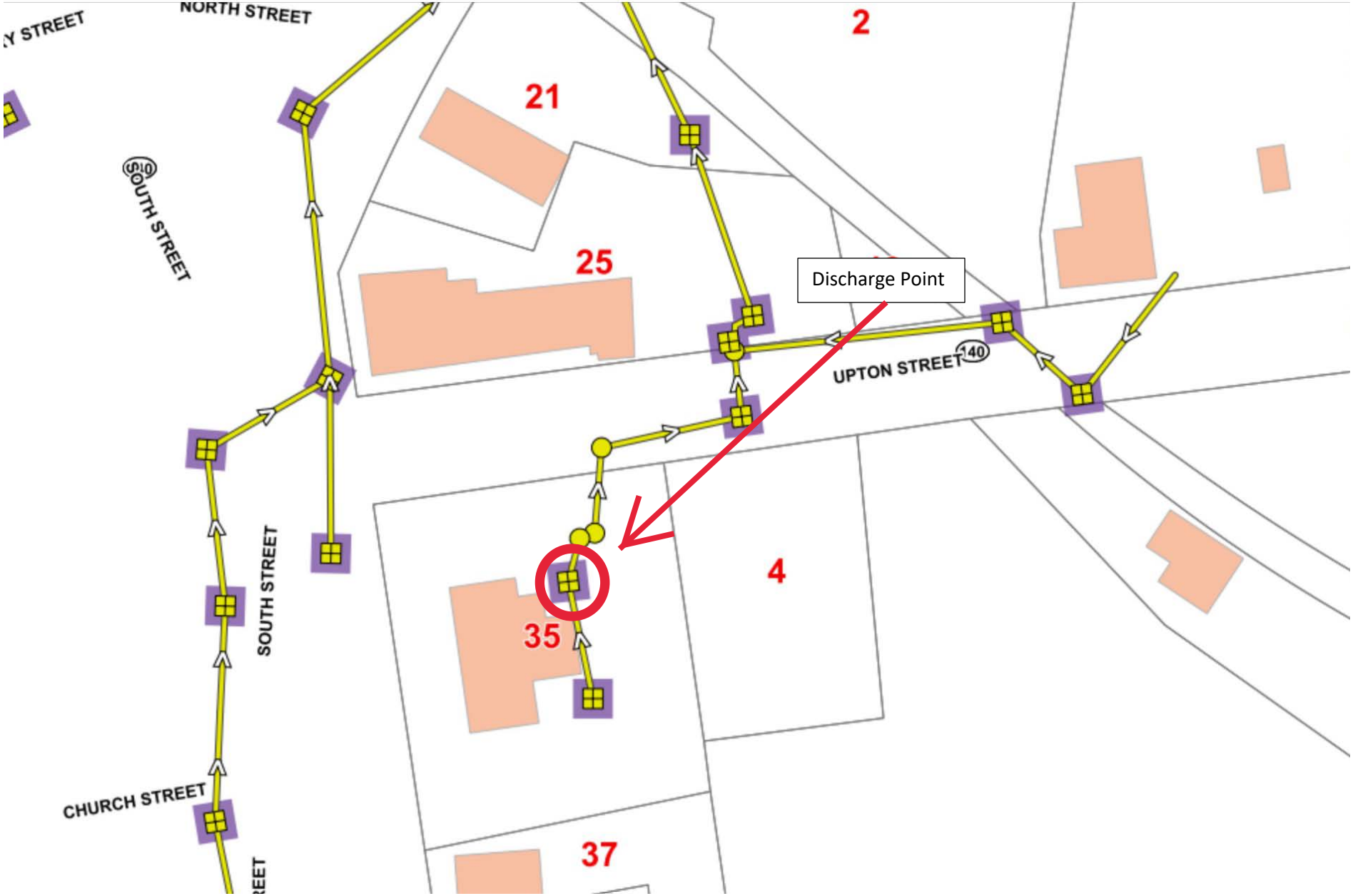
If you don't want to receive such e-mails, you can change your settings at https://www.grafton-ma.gov/user/14826/edit.

Message:

To whom it may concern:
We are working with the J.Derenzo Company (JDC) to facilitate the excavation activities associated with the construction of the new Grafton Library building. Specifically, our firm will be assisting JDC with the dewatering of the excavation and the water treatment portion of the project. We are looking for the Town's assistance in obtaining a NPDES permit to conduct the construction dewatering. Kindly advise us on the location of the nearest catch basin to the 35 Grafton Common property and the location of the outfall. Thank you in advance for your assistance on this project.

James Bennett
Project Manager/Estimator

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
O: 774-450-7177
C: 774-450-5269
jbennett@lrt-llc.net


NORTH STREET
SOUTH STREET
SOUTH STREET
CHURCH STREET
UPTON STREET
140
Discharge Point
2
21
25
4
35
37

Dilution Factor

Confirmation, Stream Stats

Report and Dilution

Calculations

From: Vakalopoulos, Catherine (DEP)
To: Jake Jennings
Cc: Ruan, Xiaodan (DEP); Brian Caccavale
Subject: RE: Dilution Calcs Grafton Library
Date: Tuesday, February 4, 2020 6:40:45 PM

Hi Jake,
Your dilution factor calculation for this proposed dewatering discharge (with a design flow of 100 gpm) from 35 Grafton Commons in Grafton to Lake Ripple is correct. Normally there is no dilution granted to lakes because StreamStats can't calculate a 7Q10 but in this case there is enough inflow and outflow to be able to calculate a very small DF of 1.07.

Lake Ripple is identified as MA51135, is classified as Class B, is not an ORW, has no approved TMDLs, and is impaired by aquatic plants.

Since the work is for the Grafton Public Library, owned by a municipality, you do not have to submit the fee to MassDEP.

Take care,

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection
1 Winter St., Boston, MA 02108, 617-348-4026

From: Jake Jennings [mailto:JJennings@lrt-llc.net]
Sent: Tuesday, February 04, 2020 8:41 AM
To: Vakalopoulos, Catherine (DEP)
Cc: Ruan, Xiaodan (DEP); Brian Caccavale
Subject: Dilution Calcs Grafton Library

Hi Cathy,

Please see attached streamstats report along with our dilution calcs for your review and confirmation.

The project:

Based on my discussion with the town the receiving water is Lake Ripple. I couldn't find it listed in the surface water classifications.
Grafton Library
35 Grafton Commons
Grafton, MA

The 7 Day 10 Year Low Flow value from the streamstats report is 0.0161 cfs and the calculated dilution factor is 1.07.

Can you please confirm these values are appropriate.

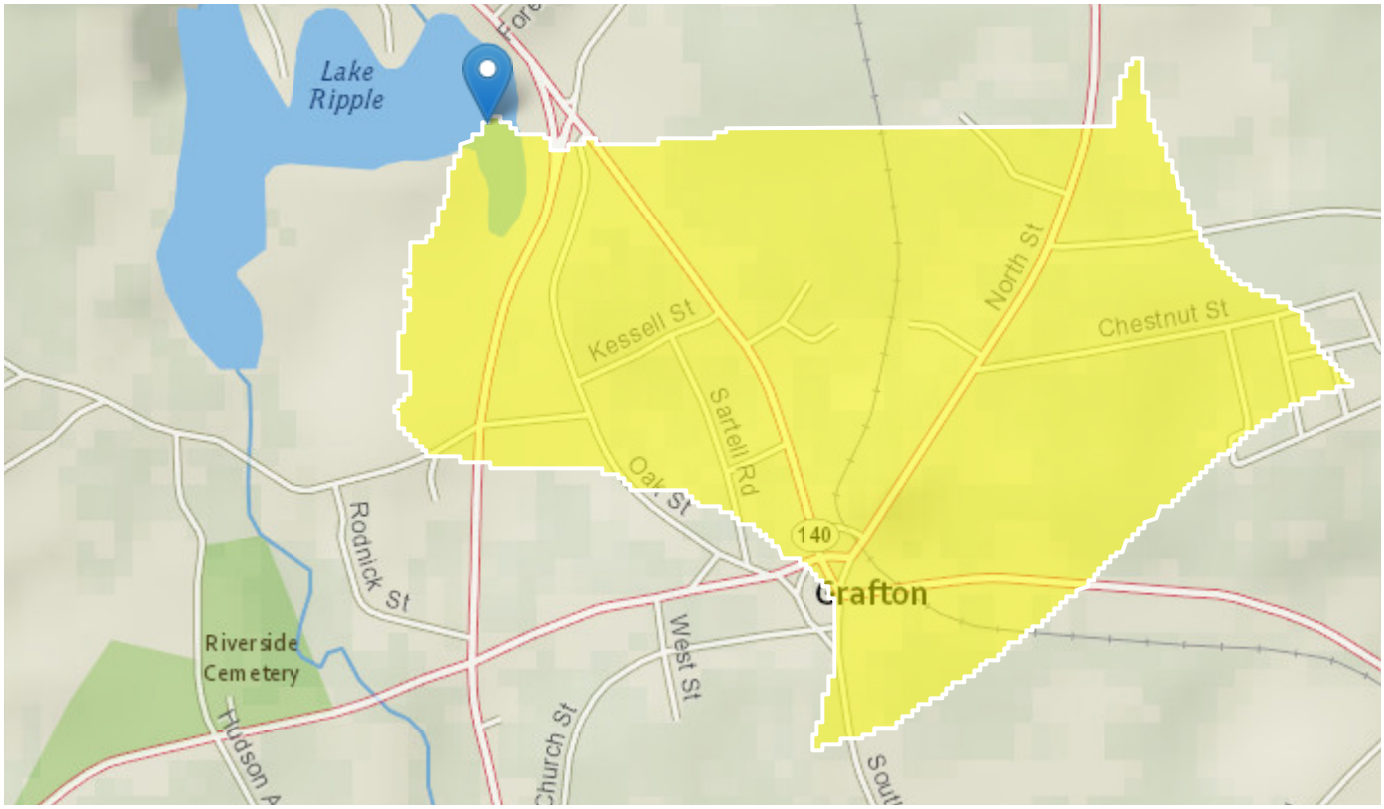
Thank you,

Jake Jennings

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

StreamStats Report

Region ID: MA
Workspace ID: MA20200204130512531000
Clicked Point (Latitude, Longitude): 42.21368, -71.69257
Time: 2020-02-04 08:05:27 -0500



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	0.42	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	4.354	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.22	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	0.42	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	4.354	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.22	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	0.0364	ft^3/s
7 Day 10 Year Low Flow	0.0161	ft^3/s

Low-Flow Statistics Citations

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

Application Version: 4.3.11

DILUTION CALCULATIONS
Grafton Library
Grafton, MA

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

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

ASSUMPTIONS FOR 100 GPM SYSTEM

7Q10 is 0.0161 cubic feet per second (cfs) - from StreamStats 4.0
A conversion of 7.48 is used to convert cubic feet to gallons
A design flow rate of 100 gallons per minute (gpm) is assumed

CALCULATIONS

7q10 Low Flow Value (Q_S)

$$Q_S = \frac{0.0161 ft^3}{sec} \times \frac{7.48 \text{ gallons}}{ft^3} \times \frac{86{,}400 \text{ sec}}{day} \times \frac{1 \text{ MG}}{1{,}000{,}000 \text{ gallons}} = 0.0104 \text{ MGD}$$

Discharge Flow Rate (Q_D)

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

Dilution Factor (DF)

$$DF = \frac{Q_S + Q_D}{Q_D} = \frac{0.0104 \text{ MGD} + 0.144 \text{ MDG}}{0.144 \text{ MGD}} = 1.07$$

Appendix B
Laboratory Data

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

February 13, 2020

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

Project Location: Grafton Library
Client Job Number:
Project Number: 2-1979
Laboratory Work Order Number: 20B0045

Enclosed are results of analyses for samples received by the laboratory on February 3, 2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kerry K. McGee
Project Manager

Table of Contents

Table of Contents (continued)

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

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, MA 01453
ATTN: Brian Caccavale

REPORT DATE: 2/13/2020

PURCHASE ORDER NUMBER: 2-1979

PROJECT NUMBER: 2-1979

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 20B0045

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

PROJECT LOCATION: Grafton Library

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Influent	20B0045-01	Ground Water		608.3	
				624.1	
				625.1	
				EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 504.1	
				SM19-22 4500 NH3 C	MA M-MA-086/CT PH-0574/NY11148
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 CN E	MA M-MA-086/CT PH-0574/NY11148
				Tri Chrome Calc.	
Receiving Water	20B0045-02	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	
				Tri Chrome Calc.	

con-test® ANALYTICAL LABORATORY

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

CASE NARRATIVE SUMMARY

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

625.1

Qualifications:

L-07

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

Analyte & Samples(s) Qualified:

N-Nitrosodimethylamine
B251486-BS1

L-07A

Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.

Analyte & Samples(s) Qualified:

Benzidine
B251486-BSD1

R-05

Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.

Analyte & Samples(s) Qualified:

Benzidine
20B0045-01[Influent], B251486-BLK1, B251486-BS1

V-04

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

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol
B251486-BLK1, B251486-BS1, B251486-BSD1, S045321-CCV1

4,6-Dinitro-2-methylphenol
B251486-BLK1, B251486-BS1, B251486-BSD1, S045321-CCV1

Benzidine
20B0045-01[Influent], B251486-BLK1, B251486-BS1, B251486-BSD1, S045321-CCV1

V-05

Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

Analyte & Samples(s) Qualified:

Benzidine
20B0045-01[Influent], B251486-BLK1, B251486-BS1, B251486-BSD1, S045321-CCV1

Hexachlorocyclopentadiene
20B0045-01[Influent]

SM21-22 3500 Cr B

Qualifications:

DL-03

Elevated reporting limit due to matrix interference.

Analyte & Samples(s) Qualified:

Hexavalent Chromium
20B0045-01[Influent], 20B0045-02[Receiving Water]

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

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: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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	<3.79	50.0	3.79	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
tert-Amyl Methyl Ether (TAME)	<0.140	0.500	0.140	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Benzene	<0.180	1.00	0.180	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Bromodichloromethane	<0.160	2.00	0.160	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Bromoform	<0.460	2.00	0.460	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Bromomethane	<0.780	2.00	0.780	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
tert-Butyl Alcohol (TBA)	<4.17	20.0	4.17	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Carbon Tetrachloride	<0.110	2.00	0.110	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Chlorobenzene	<0.150	2.00	0.150	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Chlorodibromomethane	<0.210	2.00	0.210	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Chloroethane	<0.350	2.00	0.350	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Chloroform	<0.170	2.00	0.170	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Chloromethane	<0.450	2.00	0.450	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,2-Dichlorobenzene	<0.160	2.00	0.160	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,3-Dichlorobenzene	<0.120	2.00	0.120	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,4-Dichlorobenzene	<0.130	2.00	0.130	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,2-Dichloroethane	<0.410	2.00	0.410	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,1-Dichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,1-Dichloroethylene	<0.320	2.00	0.320	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
trans-1,2-Dichloroethylene	<0.310	2.00	0.310	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,2-Dichloropropane	<0.200	2.00	0.200	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
cis-1,3-Dichloropropene	<0.130	2.00	0.130	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,4-Dioxane	<22.5	50.0	22.5	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
trans-1,3-Dichloropropene	<0.230	2.00	0.230	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Ethanol	<10.5	50.0	10.5	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Ethylbenzene	<0.130	2.00	0.130	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Methyl tert-Butyl Ether (MTBE)	<0.250	2.00	0.250	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Methylene Chloride	<0.340	5.00	0.340	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,1,2,2-Tetrachloroethane	<0.220	2.00	0.220	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Tetrachloroethylene	<0.180	2.00	0.180	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Toluene	<0.140	1.00	0.140	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,1,1-Trichloroethane	<0.200	2.00	0.200	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
1,1,2-Trichloroethane	<0.160	2.00	0.160	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Trichloroethylene	<0.240	2.00	0.240	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Trichlorofluoromethane (Freon 11)	<0.330	2.00	0.330	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
Vinyl Chloride	<0.450	2.00	0.450	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
m+p Xylene	<0.300	2.00	0.300	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD
o-Xylene	<0.170	1.00	0.170	µg/L	1		624.1	2/4/20	2/4/20 21:04	LBD

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	94.6	70-130		2/4/20 21:04
Toluene-d8	103	70-130		2/4/20 21:04
4-Bromofluorobenzene	102	70-130		2/4/20 21:04

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene (SIM)	0.016	0.049	0.016	µg/L	1	J	625.1	2/4/20	2/6/20 17:45	CLA
Benzo(a)pyrene (SIM)	<0.012	0.098	0.012	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Benzo(b)fluoranthene (SIM)	<0.015	0.049	0.015	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Benzo(k)fluoranthene (SIM)	<0.012	0.20	0.012	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Bis(2-ethylhexyl)phthalate (SIM)	<0.42	0.98	0.42	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Chrysene (SIM)	0.015	0.20	0.015	µg/L	1	J	625.1	2/4/20	2/6/20 17:45	CLA
Dibenz(a,h)anthracene (SIM)	<0.017	0.098	0.017	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Indeno(1,2,3-cd)pyrene (SIM)	<0.018	0.098	0.018	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA
Pentachlorophenol (SIM)	<0.33	0.98	0.33	µg/L	1		625.1	2/4/20	2/6/20 17:45	CLA

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol (SIM)	46.6	15-110		2/6/20 17:45
Phenol-d6 (SIM)	36.8	15-110		2/6/20 17:45
Nitrobenzene-d5	78.6	30-130		2/6/20 17:45
2-Fluorobiphenyl	62.6	30-130		2/6/20 17:45
2,4,6-Tribromophenol (SIM)	79.5	15-110		2/6/20 17:45
p-Terphenyl-d14	63.5	30-130		2/6/20 17:45

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Acenaphthylene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Anthracene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Benzidine	<19.6	19.6	µg/L	1	V-04, V-05, R-05	625.1	2/4/20	2/6/20 22:32	KLB
Benzo(g,h,i)perylene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
4-Bromophenylphenylether	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Butylbenzylphthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
4-Chloro-3-methylphenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Bis(2-chloroethyl)ether	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Bis(2-chloroisopropyl)ether	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2-Chloronaphthalene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2-Chlorophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
4-Chlorophenylphenylether	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Di-n-butylphthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
1,3-Dichlorobenzene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
1,4-Dichlorobenzene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
1,2-Dichlorobenzene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
3,3-Dichlorobenzidine	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,4-Dichlorophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Diethylphthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,4-Dimethylphenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Dimethylphthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
4,6-Dinitro-2-methylphenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,4-Dinitrophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,4-Dinitrotoluene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,6-Dinitrotoluene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Di-n-octylphthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
1,2-Diphenylhydrazine/Azobenzene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Bis(2-Ethylhexyl)phthalate	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Fluoranthene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Fluorene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Hexachlorobenzene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Hexachlorobutadiene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Hexachlorocyclopentadiene	<9.80	9.80	µg/L	1	V-05	625.1	2/4/20	2/6/20 22:32	KLB
Hexachloroethane	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Isophorone	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Naphthalene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Nitrobenzene	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2-Nitrophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
4-Nitrophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
N-Nitrosodimethylamine	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
N-Nitrosodiphenylamine	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
N-Nitrosodi-n-propylamine	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2-Methylnaphthalene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

Sample Matrix: Ground Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Phenanthrene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2-Methylphenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Phenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
3/4-Methylphenol	<19.6	19.6	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
Pyrene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
1,2,4-Trichlorobenzene	<4.90	4.90	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB
2,4,6-Trichlorophenol	<9.80	9.80	µg/L	1		625.1	2/4/20	2/6/20 22:32	KLB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	51.4	15-110		2/6/20 22:32
Phenol-d6	37.8	15-110		2/6/20 22:32
Nitrobenzene-d5	83.9	30-130		2/6/20 22:32
2-Fluorobiphenyl	103	30-130		2/6/20 22:32
2,4,6-Tribromophenol	98.5	15-110		2/6/20 22:32
p-Terphenyl-d14	84.9	30-130		2/6/20 22:32

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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]	<0.0911	0.0990	0.0911	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1221 [1]	<0.0797	0.0990	0.0797	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1232 [1]	<0.0985	0.0990	0.0985	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1242 [1]	<0.0856	0.0990	0.0856	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1248 [1]	<0.0941	0.0990	0.0941	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1254 [1]	<0.0520	0.0990	0.0520	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG
Aroclor-1260 [1]	<0.0970	0.0990	0.0970	µg/L	1		608.3	2/5/20	2/7/20 11:55	TG

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
Decachlorobiphenyl [1]	52.4	30-150		2/7/20 11:55
Decachlorobiphenyl [2]	54.0	30-150		2/7/20 11:55
Tetrachloro-m-xylene [1]	47.2	30-150		2/7/20 11:55
Tetrachloro-m-xylene [2]	52.0	30-150		2/7/20 11:55

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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	2/4/20	2/5/20 11:27	QNW
Arsenic	2.3	0.80		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Cadmium	0.36	0.20		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Chromium	ND	1.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Chromium, Trivalent	0.0			mg/L	1		Tri Chrome Calc.	2/4/20	2/5/20 11:27	QNW
Copper	11	1.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Iron	4.6	0.050		mg/L	1		EPA 200.7	2/4/20	2/5/20 13:43	TBC
Lead	5.3	0.50		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	2/4/20	2/4/20 12:59	CJV
Nickel	ND	5.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Zinc	87	10		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:27	QNW
Hardness	130	1.4		mg/L	1		EPA 200.7	2/4/20	2/5/20 13:43	TBC

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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	89	25		mg/L	25		EPA 300.0	2/5/20	2/5/20 15:32	KMV
Chlorine, Residual	ND	0.020		mg/L	1		SM21-22 4500 CL G	2/3/20	2/3/20 22:00	KMV
Hexavalent Chromium	ND	0.0080		mg/L	2	DL-03	SM21-22 3500 Cr B	2/3/20	2/3/20 22:15	KMV
Total Suspended Solids	2.3	0.83		mg/L	1		SM21-22 2540D	2/4/20	2/4/20 13:30	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.6		mg/L	1		EPA 1664B	2/4/20	2/4/20 10:20	LL

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

Sample Matrix: Ground Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (2)	ND	0.021	0.013	µg/L	1		EPA 504.1	2/12/20	2/12/20 21:59	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual		
1,3-Dibromopropane (2)	110	70-130			2/12/20 21:59

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Influent | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-01

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	0.298	0.075	0.024	mg/L	1		SM19-22 4500 NH3 C		2/5/20 21:39	AAL
Cyanide	ND	0.005	0.001	mg/L	1		SM21-22 4500 CN E		2/6/20 12:16	AAL

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Receiving Water | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-02

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	2/4/20	2/5/20 11:30	QNW
Arsenic	0.83	0.80		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Cadmium	ND	0.20		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Chromium	1.6	1.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Chromium, Trivalent	0.0016			mg/L	1		Tri Chrome Calc.	2/4/20	2/5/20 11:30	QNW
Copper	3.5	1.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Iron	0.85	0.050		mg/L	1		EPA 200.7	2/4/20	2/5/20 13:48	TBC
Lead	2.3	0.50		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Mercury	ND	0.00010		mg/L	1		EPA 245.1	2/4/20	2/4/20 13:00	CJV
Nickel	ND	5.0		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Selenium	ND	5.0	1.6	µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Silver	ND	0.20		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Zinc	17	10		µg/L	1		EPA 200.8	2/4/20	2/5/20 11:30	QNW
Hardness	35	1.4		mg/L	1		EPA 200.7	2/4/20	2/5/20 13:48	TBC

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Receiving Water | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-02

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	0.0080		mg/L	2	DL-03	SM21-22 3500 Cr B	2/3/20	2/3/20 22:15	KMV

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

Project Location: Grafton Library | Sample Description: | Work Order: 20B0045

Date Received: 2/3/2020

Field Sample #: Receiving Water | Sampled: 2/3/2020 10:30

Sample ID: 20B0045-02

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	0.031	0.075	0.024	mg/L	1		SM19-22 4500 NH3 C		2/5/20 21:40	AAL

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Sample Extraction Data

Prep Method: SW-846 3510C-608.3

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251598	1010	5.00	02/05/20

Prep Method: SW-846 5030B-624.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251481	5	5.00	02/04/20

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251486	1020	1.00	02/04/20

Prep Method: SW-846 3510C-625.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251586	1020	1.00	02/04/20

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]		Date
20B0045-01 [Influent]	B251466	900		02/04/20

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251522	50.0	50.0	02/04/20
20B0045-01 [Influent]	B251522	50.0		02/04/20
20B0045-02 [Receiving Water]	B251522	50.0	50.0	02/04/20
20B0045-02 [Receiving Water]	B251522	50.0		02/04/20

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251523	50.0	50.0	02/04/20
20B0045-02 [Receiving Water]	B251523	50.0	50.0	02/04/20

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251471	6.00	6.00	02/04/20
20B0045-02 [Receiving Water]	B251471	6.00	6.00	02/04/20

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date

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Sample Extraction Data

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251583	10.0	10.0	02/05/20

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B252095	33.4	35.0	02/12/20

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
20B0045-01 [Influent]	B251463	600	02/04/20

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251448	50.0	50.0	02/03/20
20B0045-02 [Receiving Water]	B251448	50.0	50.0	02/03/20

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
20B0045-01 [Influent]	B251441	100	100	02/03/20

Prep Method: EPA 200.8-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
20B0045-01 [Influent]	B251523	50.0	02/04/20
20B0045-02 [Receiving Water]	B251523	50.0	02/04/20

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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 B251481 - SW-846 5030B										
Blank (B251481-BLK1)				Prepared & Analyzed: 02/04/20						
Acetone	ND	50.0	µg/L							
tert-Amyl Methyl Ether (TAME)	ND	0.500	µg/L							
Benzene	ND	1.00	µg/L							
Bromodichloromethane	ND	2.00	µg/L							
Bromoform	ND	2.00	µg/L							
Bromomethane	ND	2.00	µg/L							
tert-Butyl Alcohol (TBA)	ND	20.0	µg/L							
Carbon Tetrachloride	ND	2.00	µg/L							
Chlorobenzene	ND	2.00	µg/L							
Chlorodibromomethane	ND	2.00	µg/L							
Chloroethane	ND	2.00	µg/L							
Chloroform	ND	2.00	µg/L							
Chloromethane	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							
1,1-Dichloroethane	ND	2.00	µg/L							
1,1-Dichloroethylene	ND	2.00	µg/L							
trans-1,2-Dichloroethylene	ND	2.00	µg/L							
1,2-Dichloropropane	ND	2.00	µg/L							
cis-1,3-Dichloropropene	ND	2.00	µg/L							
1,4-Dioxane	ND	50.0	µg/L							
trans-1,3-Dichloropropene	ND	2.00	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							
1,1,2,2-Tetrachloroethane	ND	2.00	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							
Trichlorofluoromethane (Freon 11)	ND	2.00	µg/L							
Vinyl Chloride	ND	2.00	µg/L							
m+p Xylene	ND	2.00	µg/L							
o-Xylene	ND	1.00	µg/L							
Surrogate: 1,2-Dichloroethane-d4	*23.6*		µg/L	25.0		94.3	70-130			
Surrogate: Toluene-d8	*25.8*		µg/L	25.0		103	70-130			
Surrogate: 4-Bromofluorobenzene	*25.6*		µg/L	25.0		103	70-130			
LCS (B251481-BS1)				Prepared & Analyzed: 02/04/20						
Acetone	220	50.0	µg/L	200		109	70-160			†
tert-Amyl Methyl Ether (TAME)	21	0.500	µg/L	20.0		105	70-130			
Benzene	23	1.00	µg/L	20.0		115	65-135			
Bromodichloromethane	20	2.00	µg/L	20.0		102	65-135			
Bromoform	20	2.00	µg/L	20.0		99.7	70-130			
Bromomethane	21	2.00	µg/L	20.0		103	15-185			
tert-Butyl Alcohol (TBA)	220	20.0	µg/L	200		109	40-160			†
Carbon Tetrachloride	22	2.00	µg/L	20.0		112	70-130			
Chlorobenzene	20	2.00	µg/L	20.0		99.8	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 B251481 - SW-846 5030B										
LCS (B251481-BS1)				Prepared & Analyzed: 02/04/20						
Chlorodibromomethane	22	2.00	µg/L	20.0		111	70-135			
Chloroethane	22	2.00	µg/L	20.0		108	40-160			
Chloroform	19	2.00	µg/L	20.0		94.4	70-135			
Chloromethane	22	2.00	µg/L	20.0		108	20-205			
1,2-Dichlorobenzene	19	2.00	µg/L	20.0		95.4	65-135			
1,3-Dichlorobenzene	20	2.00	µg/L	20.0		98.2	70-130			
1,4-Dichlorobenzene	19	2.00	µg/L	20.0		94.7	65-135			
1,2-Dichloroethane	19	2.00	µg/L	20.0		97.3	70-130			
1,1-Dichloroethane	24	2.00	µg/L	20.0		120	70-130			
1,1-Dichloroethylene	21	2.00	µg/L	20.0		106	50-150			
trans-1,2-Dichloroethylene	24	2.00	µg/L	20.0		119	70-130			
1,2-Dichloropropane	24	2.00	µg/L	20.0		119	35-165			
cis-1,3-Dichloropropene	21	2.00	µg/L	20.0		105	25-175			
1,4-Dioxane	230	50.0	µg/L	200		116	40-130			†
trans-1,3-Dichloropropene	22	2.00	µg/L	20.0		108	50-150			
Ethanol	220	50.0	µg/L	200		112	40-160			
Ethylbenzene	19	2.00	µg/L	20.0		96.6	60-140			
Methyl tert-Butyl Ether (MTBE)	22	2.00	µg/L	20.0		109	70-130			
Methylene Chloride	25	5.00	µg/L	20.0		126	60-140			
1,1,2,2-Tetrachloroethane	21	2.00	µg/L	20.0		103	60-140			
Tetrachloroethylene	22	2.00	µg/L	20.0		109	70-130			
Toluene	21	1.00	µg/L	20.0		103	70-130			
1,1,1-Trichloroethane	21	2.00	µg/L	20.0		105	70-130			
1,1,2-Trichloroethane	23	2.00	µg/L	20.0		114	70-130			
Trichloroethylene	22	2.00	µg/L	20.0		109	65-135			
Trichlorofluoromethane (Freon 11)	18	2.00	µg/L	20.0		89.9	50-150			
Vinyl Chloride	23	2.00	µg/L	20.0		116	5-195			
m+p Xylene	37	2.00	µg/L	40.0		93.2	70-130			
o-Xylene	19	1.00	µg/L	20.0		93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	*23.2*		µg/L	25.0		92.7	70-130			
Surrogate: Toluene-d8	*26.4*		µg/L	25.0		106	70-130			
Surrogate: 4-Bromofluorobenzene	*26.2*		µg/L	25.0		105	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 B251586 - SW-846 3510C										
Blank (B251586-BLK1)				Prepared: 02/04/20 Analyzed: 02/05/20						
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: Nitrobenzene-d5	*73.7*		µg/L	100		73.7	30-130			
Surrogate: 2-Fluorobiphenyl	*61.4*		µg/L	100		61.4	30-130			
Surrogate: p-Terphenyl-d14	*65.5*		µg/L	100		65.5	30-130			
LCS (B251586-BS1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Benzo(a)anthracene (SIM)	42.8	1.0	µg/L	50.0		85.6	33-143			
Benzo(a)pyrene (SIM)	44.4	2.0	µg/L	50.0		88.8	17-163			
Benzo(b)fluoranthene (SIM)	47.2	1.0	µg/L	50.0		94.4	24-159			
Benzo(k)fluoranthene (SIM)	48.8	4.0	µg/L	50.0		97.6	11-162			
Bis(2-ethylhexyl)phthalate (SIM)	52.2	20	µg/L	50.0		104	8-158			
Chrysene (SIM)	43.0	4.0	µg/L	50.0		86.0	17-168			
Dibenz(a,h)anthracene (SIM)	46.1	2.0	µg/L	50.0		92.2	10-227			
Indeno(1,2,3-cd)pyrene (SIM)	47.5	2.0	µg/L	50.0		95.1	10-171			
Pentachlorophenol (SIM)	40.0	20	µg/L	50.0		80.0	14-176			
Surrogate: Nitrobenzene-d5	*80.4*		µg/L	100		80.4	30-130			
Surrogate: 2-Fluorobiphenyl	*77.3*		µg/L	100		77.3	30-130			
Surrogate: p-Terphenyl-d14	*67.4*		µg/L	100		67.4	30-130			
LCS Dup (B251586-BSD1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Benzo(a)anthracene (SIM)	38.6	1.0	µg/L	50.0		77.3	33-143	10.2	53	
Benzo(a)pyrene (SIM)	40.0	2.0	µg/L	50.0		80.1	17-163	10.3	72	
Benzo(b)fluoranthene (SIM)	42.7	1.0	µg/L	50.0		85.3	24-159	10.1	71	
Benzo(k)fluoranthene (SIM)	42.0	4.0	µg/L	50.0		84.0	11-162	14.9	63	
Bis(2-ethylhexyl)phthalate (SIM)	47.3	20	µg/L	50.0		94.6	8-158	9.81	82	
Chrysene (SIM)	38.6	4.0	µg/L	50.0		77.2	17-168	10.8	87	
Dibenz(a,h)anthracene (SIM)	42.0	2.0	µg/L	50.0		84.0	10-227	9.31	126	
Indeno(1,2,3-cd)pyrene (SIM)	43.2	2.0	µg/L	50.0		86.3	10-171	9.66	99	‡
Pentachlorophenol (SIM)	35.7	20	µg/L	50.0		71.5	14-176	11.2	86	
Surrogate: Nitrobenzene-d5	*72.6*		µg/L	100		72.6	30-130			
Surrogate: 2-Fluorobiphenyl	*71.1*		µg/L	100		71.1	30-130			
Surrogate: p-Terphenyl-d14	*60.6*		µg/L	100		60.6	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 B251486 - SW-846 3510C										
Blank (B251486-BLK1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Acenaphthene	ND	5.00	µg/L							
Acenaphthylene	ND	5.00	µg/L							
Anthracene	ND	5.00	µg/L							
Benzidine	ND	20.0	µg/L							R-05, V-04, V-05
Benzo(g,h,i)perylene	ND	5.00	µg/L							
4-Bromophenylphenylether	ND	10.0	µg/L							
Butylbenzylphthalate	ND	10.0	µg/L							
4-Chloro-3-methylphenol	ND	10.0	µg/L							
Bis(2-chloroethyl)ether	ND	10.0	µg/L							
Bis(2-chloroisopropyl)ether	ND	10.0	µg/L							
2-Chloronaphthalene	ND	10.0	µg/L							
2-Chlorophenol	ND	10.0	µg/L							
4-Chlorophenylphenylether	ND	10.0	µg/L							
Di-n-butylphthalate	ND	10.0	µg/L							
1,3-Dichlorobenzene	ND	5.00	µg/L							
1,4-Dichlorobenzene	ND	5.00	µg/L							
1,2-Dichlorobenzene	ND	5.00	µg/L							
3,3-Dichlorobenzidine	ND	10.0	µg/L							
2,4-Dichlorophenol	ND	10.0	µg/L							
Diethylphthalate	ND	10.0	µg/L							
2,4-Dimethylphenol	ND	10.0	µg/L							
Dimethylphthalate	ND	10.0	µg/L							
4,6-Dinitro-2-methylphenol	ND	10.0	µg/L							V-04
2,4-Dinitrophenol	ND	10.0	µg/L							V-04
2,4-Dinitrotoluene	ND	10.0	µg/L							
2,6-Dinitrotoluene	ND	10.0	µg/L							
Di-n-octylphthalate	ND	10.0	µg/L							
1,2-Diphenylhydrazine/Azobenzene	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							
Hexachlorobenzene	ND	10.0	µg/L							
Hexachlorobutadiene	ND	10.0	µg/L							
Hexachlorocyclopentadiene	ND	10.0	µg/L							
Hexachloroethane	ND	10.0	µg/L							
Isophorone	ND	10.0	µg/L							
Naphthalene	ND	5.00	µg/L							
Nitrobenzene	ND	10.0	µg/L							
2-Nitrophenol	ND	10.0	µg/L							
4-Nitrophenol	ND	10.0	µg/L							
N-Nitrosodimethylamine	ND	10.0	µg/L							
N-Nitrosodiphenylamine	ND	10.0	µg/L							
N-Nitrosodi-n-propylamine	ND	10.0	µg/L							
2-Methylnaphthalene	ND	5.00	µg/L							
Phenanthrene	ND	5.00	µg/L							
2-Methylphenol	ND	10.0	µg/L							
Phenol	ND	10.0	µg/L							
3/4-Methylphenol	ND	20.0	µg/L							
Pyrene	ND	5.00	µg/L							
1,2,4-Trichlorobenzene	ND	5.00	µg/L							
2,4,6-Trichlorophenol	ND	10.0	µg/L							
Surrogate: 2-Fluorophenol	*87.4*		µg/L	200		43.7	15-110			

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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 B251486 - SW-846 3510C											
Blank (B251486-BLK1)				Prepared: 02/04/20 Analyzed: 02/05/20							
Surrogate: Phenol-d6	*63.7*		µg/L	200		31.9		15-110			
Surrogate: Nitrobenzene-d5	*62.2*		µg/L	100		62.2		30-130			
Surrogate: 2-Fluorobiphenyl	*83.0*		µg/L	100		83.0		30-130			
Surrogate: 2,4,6-Tribromophenol	*156*		µg/L	200		78.1		15-110			
Surrogate: p-Terphenyl-d14	*80.3*		µg/L	100		80.3		30-130			
LCS (B251486-BS1)				Prepared: 02/04/20 Analyzed: 02/05/20							
Acenaphthene	36.3	5.00	µg/L	50.0		72.7		47-145			
Acenaphthylene	36.8	5.00	µg/L	50.0		73.6		33-145			
Anthracene	38.3	5.00	µg/L	50.0		76.7		27-133			
Benzidine	26.0	20.0	µg/L	50.0		52.1		40-140			V-05, R-05, V-04
Benzo(g,h,i)perylene	38.6	5.00	µg/L	50.0		77.3		10-219			
4-Bromophenylphenylether	36.9	10.0	µg/L	50.0		73.8		53-127			
Butylbenzylphthalate	38.4	10.0	µg/L	50.0		76.8		10-152			
4-Chloro-3-methylphenol	37.1	10.0	µg/L	50.0		74.3		22-147			
Bis(2-chloroethyl)ether	31.7	10.0	µg/L	50.0		63.3		12-158			
Bis(2-chloroisopropyl)ether	37.1	10.0	µg/L	50.0		74.1		36-166			
2-Chloronaphthalene	32.0	10.0	µg/L	50.0		64.0		60-120			
2-Chlorophenol	31.3	10.0	µg/L	50.0		62.5		23-134			
4-Chlorophenylphenylether	37.6	10.0	µg/L	50.0		75.2		25-158			
Di-n-butylphthalate	38.2	10.0	µg/L	50.0		76.4		10-120			
1,3-Dichlorobenzene	25.4	5.00	µg/L	50.0		50.8		10-172			
1,4-Dichlorobenzene	25.9	5.00	µg/L	50.0		51.8		20-124			
1,2-Dichlorobenzene	26.7	5.00	µg/L	50.0		53.4		32-129			
3,3-Dichlorobenzidine	43.0	10.0	µg/L	50.0		86.0		10-262			
2,4-Dichlorophenol	35.4	10.0	µg/L	50.0		70.9		39-135			
Diethylphthalate	37.5	10.0	µg/L	50.0		75.0		10-120			
2,4-Dimethylphenol	33.4	10.0	µg/L	50.0		66.7		32-120			
Dimethylphthalate	38.9	10.0	µg/L	50.0		77.8		10-120			
4,6-Dinitro-2-methylphenol	36.7	10.0	µg/L	50.0		73.4		10-181			V-04
2,4-Dinitrophenol	37.3	10.0	µg/L	50.0		74.7		10-191			V-04
2,4-Dinitrotoluene	38.2	10.0	µg/L	50.0		76.4		39-139			
2,6-Dinitrotoluene	40.6	10.0	µg/L	50.0		81.2		50-158			
Di-n-octylphthalate	37.6	10.0	µg/L	50.0		75.3		4-146			
1,2-Diphenylhydrazine/Azobenzene	36.9	10.0	µg/L	50.0		73.8		40-140			
Bis(2-Ethylhexyl)phthalate	39.0	10.0	µg/L	50.0		78.0		8-158			
Fluoranthene	39.1	5.00	µg/L	50.0		78.1		26-137			
Fluorene	37.8	5.00	µg/L	50.0		75.6		59-121			
Hexachlorobenzene	37.0	10.0	µg/L	50.0		73.9		10-152			
Hexachlorobutadiene	30.1	10.0	µg/L	50.0		60.3		24-120			
Hexachlorocyclopentadiene	30.9	10.0	µg/L	50.0		61.8		40-140			
Hexachloroethane	26.0	10.0	µg/L	50.0		52.0		40-120			
Isophorone	37.6	10.0	µg/L	50.0		75.2		21-196			
Naphthalene	34.4	5.00	µg/L	50.0		68.8		21-133			
Nitrobenzene	32.8	10.0	µg/L	50.0		65.5		35-180			
2-Nitrophenol	34.8	10.0	µg/L	50.0		69.6		29-182			
4-Nitrophenol	21.6	10.0	µg/L	50.0		43.2		10-132			
N-Nitrosodimethylamine	18.8	10.0	µg/L	50.0		**37.5**	*	40-140			L-07
N-Nitrosodiphenylamine	ND	10.0	µg/L	50.0			*	40-140			
N-Nitrosodi-n-propylamine	35.6	10.0	µg/L	50.0		71.2		10-230			
2-Methylnaphthalene	38.6	5.00	µg/L	50.0		77.3		40-140			
Phenanthrene	38.6	5.00	µg/L	50.0		77.2		54-120			

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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 B251486 - SW-846 3510C												
LCS (B251486-BS1)				Prepared: 02/04/20 Analyzed: 02/05/20								
2-Methylphenol	30.9	10.0	µg/L	50.0		61.9		40-140				
Phenol	15.7	10.0	µg/L	50.0		31.4		5-120				
3/4-Methylphenol	29.8	20.0	µg/L	50.0		59.5		40-140				
Pyrene	39.9	5.00	µg/L	50.0		79.9		52-120				
1,2,4-Trichlorobenzene	30.9	5.00	µg/L	50.0		61.8		44-142				
2,4,6-Trichlorophenol	37.1	10.0	µg/L	50.0		74.2		37-144				
Surrogate: 2-Fluorophenol	*83.2*		µg/L	200		41.6		15-110				
Surrogate: Phenol-d6	*67.5*		µg/L	200		33.7		15-110				
Surrogate: Nitrobenzene-d5	*65.0*		µg/L	100		65.0		30-130				
Surrogate: 2-Fluorobiphenyl	*90.0*		µg/L	100		90.0		30-130				
Surrogate: 2,4,6-Tribromophenol	*165*		µg/L	200		82.7		15-110				
Surrogate: p-Terphenyl-d14	*81.7*		µg/L	100		81.7		30-130				
LCS Dup (B251486-BSD1)				Prepared: 02/04/20 Analyzed: 02/05/20								
Acenaphthene	37.3	5.00	µg/L	50.0		74.6		47-145	2.69		48	
Acenaphthylene	37.0	5.00	µg/L	50.0		74.0		33-145	0.542		74	
Anthracene	39.3	5.00	µg/L	50.0		78.6		27-133	2.42		66	
Benzidine	15.2	20.0	µg/L	50.0		**30.3**	*	40-140	**52.9**	*	30	L-07A, V-04, V-05
Benzo(g,h,i)perylene	40.2	5.00	µg/L	50.0		80.3		10-219	3.83		97	
4-Bromophenylphenylether	37.0	10.0	µg/L	50.0		74.1		53-127	0.379		43	
Butylbenzylphthalate	40.2	10.0	µg/L	50.0		80.4		10-152	4.63		60	
4-Chloro-3-methylphenol	38.9	10.0	µg/L	50.0		77.8		22-147	4.58		73	
Bis(2-chloroethyl)ether	33.3	10.0	µg/L	50.0		66.5		12-158	4.93		108	
Bis(2-chloroisopropyl)ether	37.6	10.0	µg/L	50.0		75.3		36-166	1.53		76	
2-Chloronaphthalene	32.7	10.0	µg/L	50.0		65.3		60-120	2.07		24	
2-Chlorophenol	32.1	10.0	µg/L	50.0		64.2		23-134	2.71		61	
4-Chlorophenylphenylether	37.9	10.0	µg/L	50.0		75.9		25-158	0.953		61	
Di-n-butylphthalate	39.1	10.0	µg/L	50.0		78.2		10-120	2.33		47	
1,3-Dichlorobenzene	26.9	5.00	µg/L	50.0		53.8		10-172	5.78		30	
1,4-Dichlorobenzene	26.3	5.00	µg/L	50.0		52.5		20-124	1.46		30	
1,2-Dichlorobenzene	28.3	5.00	µg/L	50.0		56.6		32-129	5.75		30	
3,3-Dichlorobenzidine	43.2	10.0	µg/L	50.0		86.4		10-262	0.394		108	
2,4-Dichlorophenol	37.2	10.0	µg/L	50.0		74.5		39-135	4.90		50	
Diethylphthalate	38.7	10.0	µg/L	50.0		77.3		10-120	3.07		100	
2,4-Dimethylphenol	35.4	10.0	µg/L	50.0		70.8		32-120	5.88		58	
Dimethylphthalate	39.4	10.0	µg/L	50.0		78.9		10-120	1.38		183	
4,6-Dinitro-2-methylphenol	38.7	10.0	µg/L	50.0		77.3		10-181	5.26		203	V-04
2,4-Dinitrophenol	39.1	10.0	µg/L	50.0		78.2		10-191	4.58		132	V-04
2,4-Dinitrotoluene	39.5	10.0	µg/L	50.0		79.0		39-139	3.40		42	
2,6-Dinitrotoluene	42.3	10.0	µg/L	50.0		84.6		50-158	4.15		48	
Di-n-octylphthalate	39.3	10.0	µg/L	50.0		78.5		4-146	4.24		69	
1,2-Diphenylhydrazine/Azobenzene	38.1	10.0	µg/L	50.0		76.2		40-140	3.25		30	
Bis(2-Ethylhexyl)phthalate	40.1	10.0	µg/L	50.0		80.2		8-158	2.81		82	
Fluoranthene	40.0	5.00	µg/L	50.0		80.1		26-137	2.45		66	
Fluorene	39.0	5.00	µg/L	50.0		78.0		59-121	3.07		38	
Hexachlorobenzene	37.7	10.0	µg/L	50.0		75.4		10-152	1.98		55	
Hexachlorobutadiene	29.9	10.0	µg/L	50.0		59.8		24-120	0.800		62	
Hexachlorocyclopentadiene	31.1	10.0	µg/L	50.0		62.2		40-140	0.548		30	
Hexachloroethane	26.4	10.0	µg/L	50.0		52.7		40-120	1.26		52	
Isophorone	38.8	10.0	µg/L	50.0		77.6		21-196	3.11		93	
Naphthalene	34.6	5.00	µg/L	50.0		69.1		21-133	0.551		65	
Nitrobenzene	33.6	10.0	µg/L	50.0		67.3		35-180	2.62		62	

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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 B251486 - SW-846 3510C											
LCS Dup (B251486-BSD1)				Prepared: 02/04/20 Analyzed: 02/05/20							
2-Nitrophenol	35.6	10.0	µg/L	50.0		71.2		29-182	2.33	55	
4-Nitrophenol	21.8	10.0	µg/L	50.0		43.6		10-132	0.922	131	
N-Nitrosodimethylamine	20.3	10.0	µg/L	50.0		40.6		40-140	8.04	30	
N-Nitrosodiphenylamine	ND	10.0	µg/L	50.0			*	40-140	NC	30	
N-Nitrosodi-n-propylamine	37.1	10.0	µg/L	50.0		74.2		10-230	4.10	87	
2-Methylnaphthalene	39.4	5.00	µg/L	50.0		78.7		40-140	1.85	30	
Phenanthrene	38.8	5.00	µg/L	50.0		77.7		54-120	0.671	39	
2-Methylphenol	32.5	10.0	µg/L	50.0		64.9		40-140	4.86	30	
Phenol	16.6	10.0	µg/L	50.0		33.1		5-120	5.27	64	
3/4-Methylphenol	30.6	20.0	µg/L	50.0		61.3		40-140	2.85	30	
Pyrene	41.2	5.00	µg/L	50.0		82.4		52-120	3.13	49	
1,2,4-Trichlorobenzene	31.4	5.00	µg/L	50.0		62.9		44-142	1.76	50	
2,4,6-Trichlorophenol	38.9	10.0	µg/L	50.0		77.8		37-144	4.63	58	
Surrogate: 2-Fluorophenol	*89.4*		µg/L	200		44.7		15-110			
Surrogate: Phenol-d6	*71.6*		µg/L	200		35.8		15-110			
Surrogate: Nitrobenzene-d5	*68.0*		µg/L	100		68.0		30-130			
Surrogate: 2-Fluorobiphenyl	*93.3*		µg/L	100		93.3		30-130			
Surrogate: 2,4,6-Tribromophenol	*176*		µg/L	200		87.9		15-110			
Surrogate: p-Terphenyl-d14	*86.0*		µg/L	100		86.0		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 B251598 - SW-846 3510C										
Blank (B251598-BLK1)				Prepared: 02/05/20 Analyzed: 02/06/20						
Aroclor-1016	ND	0.100	µg/L							
Aroclor-1016 [2C]	ND	0.100	µg/L							
Aroclor-1221	ND	0.100	µg/L							
Aroclor-1221 [2C]	ND	0.100	µg/L							
Aroclor-1232	ND	0.100	µg/L							
Aroclor-1232 [2C]	ND	0.100	µg/L							
Aroclor-1242	ND	0.100	µg/L							
Aroclor-1242 [2C]	ND	0.100	µg/L							
Aroclor-1248	ND	0.100	µg/L							
Aroclor-1248 [2C]	ND	0.100	µg/L							
Aroclor-1254	ND	0.100	µg/L							
Aroclor-1254 [2C]	ND	0.100	µg/L							
Aroclor-1260	ND	0.100	µg/L							
Aroclor-1260 [2C]	ND	0.100	µg/L							
Surrogate: Decachlorobiphenyl	*0.655*		µg/L	1.00		65.5	30-150			
Surrogate: Decachlorobiphenyl [2C]	*0.632*		µg/L	1.00		63.2	30-150			
Surrogate: Tetrachloro-m-xylene	*0.680*		µg/L	1.00		68.0	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*0.619*		µg/L	1.00		61.9	30-150			
LCS (B251598-BS1)				Prepared: 02/05/20 Analyzed: 02/06/20						
Aroclor-1016	0.454	0.200	µg/L	0.500		90.9	50-140			
Aroclor-1016 [2C]	0.440	0.200	µg/L	0.500		88.0	50-140			
Aroclor-1260	0.417	0.200	µg/L	0.500		83.4	8-140			
Aroclor-1260 [2C]	0.413	0.200	µg/L	0.500		82.6	8-140			
Surrogate: Decachlorobiphenyl	*1.55*		µg/L	2.00		77.3	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.55*		µg/L	2.00		77.5	30-150			
Surrogate: Tetrachloro-m-xylene	*1.43*		µg/L	2.00		71.6	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.35*		µg/L	2.00		67.4	30-150			
LCS Dup (B251598-BSD1)				Prepared: 02/05/20 Analyzed: 02/06/20						
Aroclor-1016	0.476	0.200	µg/L	0.500		95.1	50-140	4.56		
Aroclor-1016 [2C]	0.448	0.200	µg/L	0.500		89.6	50-140	1.82		
Aroclor-1260	0.442	0.200	µg/L	0.500		88.5	8-140	5.90		
Aroclor-1260 [2C]	0.424	0.200	µg/L	0.500		84.8	8-140	2.62		
Surrogate: Decachlorobiphenyl	*1.64*		µg/L	2.00		81.8	30-150			
Surrogate: Decachlorobiphenyl [2C]	*1.59*		µg/L	2.00		79.7	30-150			
Surrogate: Tetrachloro-m-xylene	*1.46*		µg/L	2.00		73.1	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	*1.38*		µg/L	2.00		68.8	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 B251471 - EPA 245.1										
Blank (B251471-BLK1)				Prepared & Analyzed: 02/04/20						
Mercury	ND	0.00010	mg/L							
LCS (B251471-BS1)				Prepared & Analyzed: 02/04/20						
Mercury	0.00397	0.00010	mg/L	0.00400		99.2	85-115			
LCS Dup (B251471-BSD1)				Prepared & Analyzed: 02/04/20						
Mercury	0.00401	0.00010	mg/L	0.00400		100	85-115	1.11	20	
Batch B251522 - EPA 200.7										
Blank (B251522-BLK1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Iron	ND	0.050	mg/L							
LCS (B251522-BS1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Iron	4.09	0.050	mg/L	4.00		102	85-115			
LCS Dup (B251522-BSD1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Iron	3.96	0.050	mg/L	4.00		99.0	85-115	3.28	20	
Batch B251523 - EPA 200.8										
Blank (B251523-BLK1)				Prepared: 02/04/20 Analyzed: 02/05/20						
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 (B251523-BS1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Antimony	504	10	µg/L	500		101	85-115			
Arsenic	517	8.0	µg/L	500		103	85-115			
Cadmium	522	2.0	µg/L	500		104	85-115			
Chromium	501	10	µg/L	500		100	85-115			
Copper	1010	10	µg/L	1000		101	85-115			
Lead	497	5.0	µg/L	500		99.3	85-115			
Nickel	507	50	µg/L	500		101	85-115			
Selenium	522	50	µg/L	500		104	85-115			
Silver	495	2.0	µg/L	500		99.0	85-115			
Zinc	1030	100	µg/L	1000		103	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 B251523 - EPA 200.8										
LCS Dup (B251523-BSD1)				Prepared: 02/04/20 Analyzed: 02/05/20						
Antimony	499	10	µg/L	500		99.7	85-115	1.06	20	
Arsenic	513	8.0	µg/L	500		103	85-115	0.698	20	
Cadmium	518	2.0	µg/L	500		104	85-115	0.721	20	
Chromium	486	10	µg/L	500		97.3	85-115	3.03	20	
Copper	973	10	µg/L	1000		97.3	85-115	3.36	20	
Lead	488	5.0	µg/L	500		97.6	85-115	1.75	20	
Nickel	487	50	µg/L	500		97.3	85-115	4.16	20	
Selenium	516	50	µg/L	500		103	85-115	1.10	20	
Silver	487	2.0	µg/L	500		97.4	85-115	1.69	20	
Zinc	1010	100	µg/L	1000		101	85-115	2.01	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 B251441 - SM21-22 4500 CL G										
Blank (B251441-BLK1)				Prepared & Analyzed: 02/03/20						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B251441-BS1)				Prepared & Analyzed: 02/03/20						
Chlorine, Residual	1.3	0.020	mg/L	1.28		104	66.3-134			
LCS Dup (B251441-BSD1)				Prepared & Analyzed: 02/03/20						
Chlorine, Residual	1.3	0.020	mg/L	1.28		104	66.3-134	0.332	9.96	
Batch B251448 - SM21-22 3500 Cr B										
Blank (B251448-BLK1)				Prepared & Analyzed: 02/03/20						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B251448-BS1)				Prepared & Analyzed: 02/03/20						
Hexavalent Chromium	0.098	0.0040	mg/L	0.100		97.9	83.9-121			
LCS Dup (B251448-BSD1)				Prepared & Analyzed: 02/03/20						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		102	83.9-121	3.82	10	
Batch B251463 - SM21-22 2540D										
Blank (B251463-BLK1)				Prepared & Analyzed: 02/04/20						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B251463-BS1)				Prepared & Analyzed: 02/04/20						
Total Suspended Solids	198	10	mg/L	200		99.0	57.6-118			
Batch B251466 - EPA 1664B										
Blank (B251466-BLK1)				Prepared & Analyzed: 02/04/20						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B251466-BS1)				Prepared & Analyzed: 02/04/20						
Silica Gel Treated HEM (SGT-HEM)	12		mg/L	10.0		117	64-132			
Duplicate (B251466-DUP1)		**Source: 20B0045-01**		Prepared & Analyzed: 02/04/20						
Silica Gel Treated HEM (SGT-HEM)	ND	1.6	mg/L		ND			NC	18	
Matrix Spike (B251466-MS1)		**Source: 20B0045-01**		Prepared & Analyzed: 02/04/20						
Silica Gel Treated HEM (SGT-HEM)	93	14	mg/L	100	ND	93.0	64-132			

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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 B251583 - EPA 300.0										
Blank (B251583-BLK1)				Prepared & Analyzed: 02/05/20						
Chloride	ND	1.0	mg/L							
LCS (B251583-BS1)				Prepared & Analyzed: 02/05/20						
Chloride	4.5	1.0	mg/L	5.00		90.5	90-110			
LCS Dup (B251583-BSD1)				Prepared & Analyzed: 02/05/20						
Chloride	4.5	1.0	mg/L	5.00		90.9	90-110	0.415	20	

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QUALITY CONTROL

Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B252095 - EPA 504 water										
Blank (B252095-BLK1)				Prepared & Analyzed: 02/12/20						
1,2-Dibromoethane (EDB) [2C]	ND	0.021	µg/L							
Surrogate: 1,3-Dibromopropane [2C]	*1.08*		µg/L	1.05		103	70-130			
LCS (B252095-BS1)				Prepared & Analyzed: 02/12/20						
1,2-Dibromoethane (EDB) [2C]	0.194	0.021	µg/L	0.185		105	70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.08*		µg/L	1.06		102	70-130			
LCS Dup (B252095-BSD1)				Prepared & Analyzed: 02/12/20						
1,2-Dibromoethane (EDB) [2C]	0.203	0.021	µg/L	0.183		111	70-130	4.78		
Surrogate: 1,3-Dibromopropane [2C]	*1.21*		µg/L	1.05		115	70-130			
MRL Check (B252095-MRL1)				Prepared & Analyzed: 02/12/20						
1,2-Dibromoethane (EDB) [2C]	0.0192	0.021	µg/L	0.0213		90.0	0-200			J
Surrogate: 1,3-Dibromopropane [2C]	*1.09*		µg/L	1.07		102	70-130			
MRL Check (B252095-MRL2)				Prepared & Analyzed: 02/12/20						
1,2-Dibromoethane (EDB) [2C]	0.0253	0.021	µg/L	0.0211		120	0-200			
Surrogate: 1,3-Dibromopropane [2C]	*1.08*		µg/L	1.06		102	70-130			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

608.3

LCS

Lab Sample ID: B251598-BS1 Date(s) Analyzed: 02/06/2020 02/06/2020

Instrument ID (1): ECD4 Instrument ID (2): ECD4

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	0.454	
	2	0.000	0.000	0.000	0.440	2.3
Aroclor-1260	1	0.000	0.000	0.000	0.417	
	2	0.000	0.000	0.000	0.413	1.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

608.3

LCS Dup

Lab Sample ID: B251598-BSD1 Date(s) Analyzed: 02/06/2020 02/06/2020

Instrument ID (1): ECD4 Instrument ID (2): ECD4

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	0.476	
	2	0.000	0.000	0.000	0.448	6.9
Aroclor-1260	1	0.000	0.000	0.000	0.442	
	2	0.000	0.000	0.000	0.424	3.7

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS

Lab Sample ID: B252095-BS1 Date(s) Analyzed: 02/12/2020 02/12/2020

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

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	2.920	0.000	0.000	0.194	7.5

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS Dup

Lab Sample ID: B252095-BSD1 Date(s) Analyzed: 02/12/2020 02/12/2020

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

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
	2	2.920	0.000	0.000	0.203	6.6

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
DL-03	Elevated reporting limit due to matrix interference.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
L-07A	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD outside of control limits. Reduced precision anticipated for any reported result for this compound.
R-05	Laboratory fortified blank duplicate RPD is outside of control limits. Reduced precision is anticipated for any reported value for this compound.
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria. Reported result is estimated.
V-05	Continuing calibration verification (CCV) did not meet method specifications and was biased on the low side for this compound.

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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
Bromodichloromethane	CT,NY,MA,NH,RI,NC,ME,VA
Bromoform	CT,NY,MA,NH,RI,NC,ME,VA
Bromomethane	CT,NY,MA,NH,RI,NC,ME,VA
tert-Butyl Alcohol (TBA)	NY,MA
Carbon Tetrachloride	CT,NY,MA,NH,RI,NC,ME,VA
Chlorobenzene	CT,NY,MA,NH,RI,NC,ME,VA
Chlorodibromomethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Chloroform	CT,NY,MA,NH,RI,NC,ME,VA
Chloromethane	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
1,1-Dichloroethane	CT,NY,MA,NH,RI,NC,ME,VA
1,1-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
trans-1,2-Dichloroethylene	CT,NY,MA,NH,RI,NC,ME,VA
1,2-Dichloropropane	CT,NY,MA,NH,RI,NC,ME,VA
cis-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
1,4-Dioxane	MA
trans-1,3-Dichloropropene	CT,NY,MA,NH,RI,NC,ME,VA
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
1,1,2,2-Tetrachloroethane	CT,NY,MA,NH,RI,NC,ME,VA
Tetrachloroethylene	CT,NY,MA,NH,RI,NC,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
624.1 in Water	
Toluene	CT,NY,MA,NH,RI,NC,ME,VA
1,2,4-Trichlorobenzene	MA,NC
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
Trichlorofluoromethane (Freon 11)	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
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine/Azobenzene	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
625.1 in Water	
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA
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
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
SM21-22 4500 CL G in Water	

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
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

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

CHAIN OF CUSTODY RECORD

con-test ANALYTICAL LABORATORY
Phone: 413-525-2332 20B0045
Fax: 413-525-6405
Email: info@contestlabs.com
39 Spruce Street
East Longmeadow, MA 01028

Company Name: Lockwood Remediation Technologies
Address: 89 Crawford Street, Leominster, MA 01453
Phone: (774) 450-7177
Project Name: Grafton Library
Project Location:
Project Number: 2-1979
Project Manager: Brain Caccavale
Con-Test Quote Name/Number:
Invoice Recipient:
Sampled By:

Requested Turnaround Time
7-Day ☐ 10-Day ☐
Due Date: 5-day

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

Data Delivery
Format: PDF ☑ EXCEL ☐
Other:
CLP Like Data Pkg Required: ☐
Email To: jjennings@lrt-llc.net
CC: bcaccavale@lrt-llc.net

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	[1]Matrix Code	Conc Code	Ammonia	Chloride	TRC	Total Metals (Sb,As,Cd, Cr III, Cu, Fe, Pb, Hg, Ni, Se, Ag, Zn)	Cyanide	Voc's	Semi-Voc's	PCB's	TPH	TSS	EDB	Hardness	Chromium VI
	# of Containers							2	1	1	2	1	3	2	2	2	1	3	2	2
	[2] Preservation Code							S	I	I	N	X	H	I	I	S	I	T	N	I
	[3] Container Code							P	P	p	P	P	V	A	A	A	P	V	P	P
1	Influent	2/3 10:30	2/3 10:30		x	GW	U	x	x	x	x	x	x	x	x	x	x	x	x	x
2	Receiving Water	2/3 10:30	2/3 10:30		x	GW	U	x			x								x	x

ANALYSIS REQUESTED

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Comments: PH 6.7

Samples are for NPDES RGP Parameters.

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: 2/3 2:30	
Received by: (signature)	Date/Time: 2/3/20 2:30	
Relinquished by: (signature)	Date/Time: 2/3/20 7:15	
Received by: (signature) 4.6	Date/Time: 2/3/20 19:15	
Relinquished by: (signature)	Date/Time:	
Received by: (signature)	Date/Time:	

Detection Limit Requirements
MA
CT
Other:

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

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 LRT

Received By AP Date 2/3/20 Time 15:15

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 # 2 Actual Temp - 4.6 By Blank # ____ Actual Temp - ____

Was Custody Seal Intact? N/A Were Samples Tampered with? N/A

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 F 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? T Who was notified? katie

Is there enough Volume? T

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

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

Were trip blanks received? F On COC? F

Do all samples have the proper pH? Acid TG Base ____

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	6	1 Liter Plastic	1	16 oz Amb.	
HCL-	3	500 mL Amb.		500 mL Plastic		8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	11	4oz Amb/Clear	
Bisulfate-		Flashpoint		Col./Bacteria		2oz Amb/Clear	
DI-		Other Glass		Other Plastic		Encore	
Thiosulfate-	3	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:

Appendix C
Water Treatment System
Cutsheets

LB Series

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

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

LB Series Features

LB(T)-1500:

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

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

Up to 70' shut off head

Slimline design allows pumps to fit into 8" pipes.

LB Series Features

LB-800:

Designed to fit an 8" pipe.

Up to 60' shut off head.

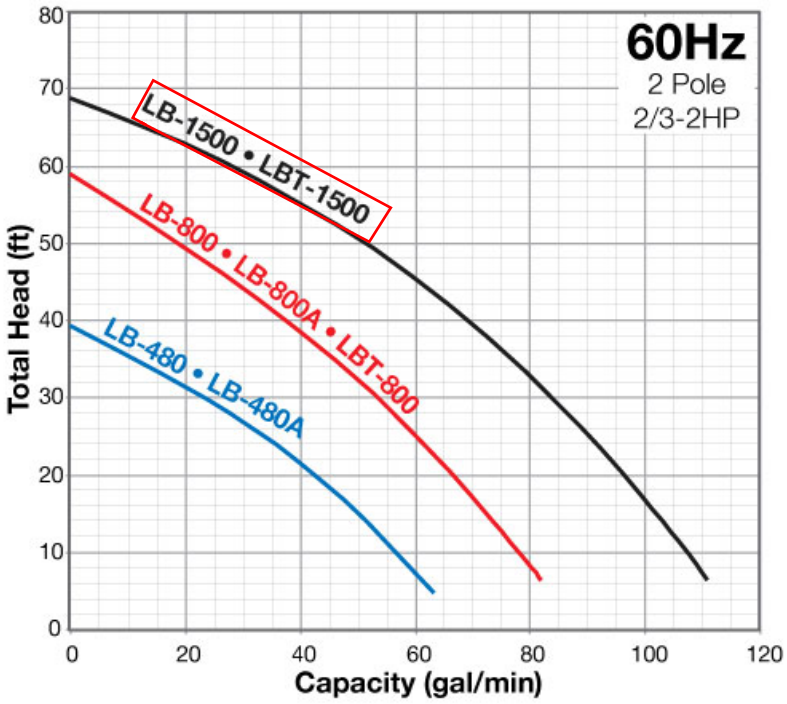
Available in 110V and 220V single-phase with 50 foot cables.

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

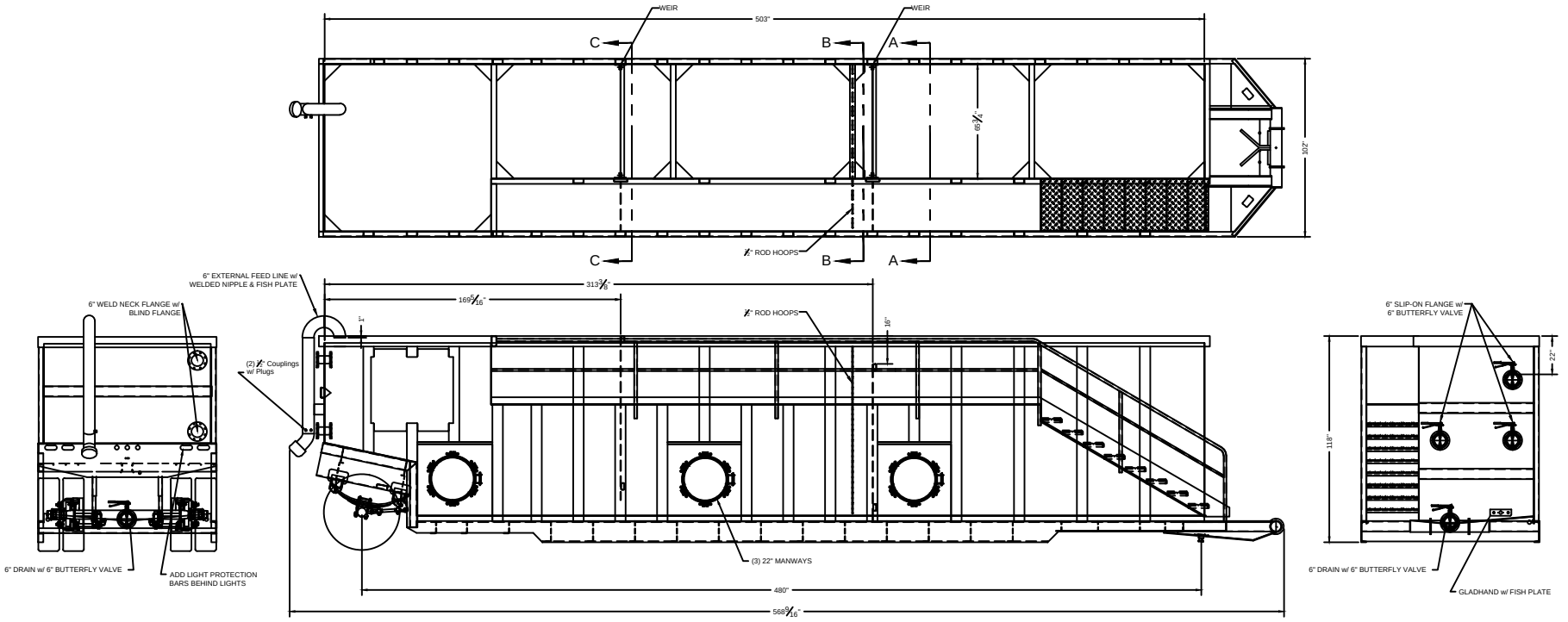
Oil Lifter provides lubrication of the seal faces.

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

Performance Range

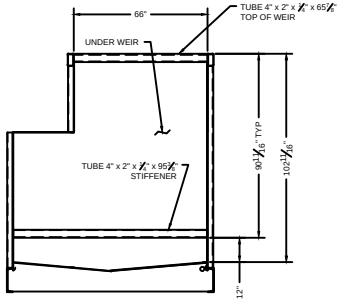


Model	Discharge Size (in.)	Motor Output (HP)	Voltage (V)	Cable Length (ft.)	Diameter (in.)	Height (in.)	Weight (lbs.)
LB-1500	3	2	110V or 220V	50	7 3/8	23 5/16	72
LB-480	2	2/3	110V	32	7 3/8	11 1/4	28
LB-480A	2	2/3	110V	32	8 3/4	11 1/4	30
LB-800	2	1	115V or 230V	50	7 3/8	13 7/16	35
LB-800A	2	1	115 or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

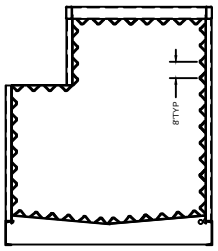


STANDARD SPECIFICATION

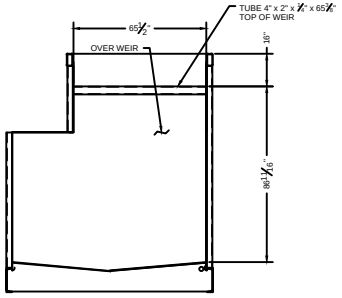
CAPACITY: .... 18,480 GALLONS (440 BBL)
SIDE SHEETS: .... 1/4" A36 PLATE
FRONT SHEET: .... 1/4" A36 PLATE
REAR SHEET: .... 1/4" A36 PLATE
FLOOR: .... 1/4" A36 PLATE
MAIN FLOOR RAILS: .... 12" x 20.7# STRUCTURAL CHANNEL
FLOOR CROSSMEMBERS: .... 1/4" A36 PLATE
SIDE STAKES: .... ONE PIECE 3/16" A36 PLATE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



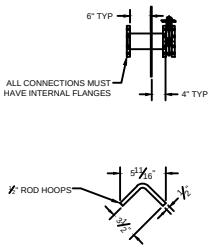
SECTION VIEW "C-C"



SECTION VIEW "B-B"



SECTION VIEW "A-A"



18,000 Gal. Weir Tank

Lockwood Remediation Technologies, LLC

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

Electric Motor Driven

Submersible Pump

Models S3B1-E6 *and* S3B1

Size 3”

PUMP SPECIFICATIONS

Suction Head: Aluminum Alloy 356-T6 With Bonded Nitrile Lining; Maximum Operating Pressure 50 psi (345 kPa).*
Impeller: Ductile Iron 65-45-12.
Seal Plate: Aluminum Alloy 356-T6 With Bonded Nitrile Lining.
Intermediate: Aluminum Alloy 356-T6.
Motor Housing: Aluminum Alloy 356-T6.
Motor Shaft: Stainless Steel 416.
Bearings: Upper, Open Single Row Ball Bearing.
Lower, Two Shield, Double Row Ball Bearing.
Shaft Sleeve: Stainless Steel 304.
Discharge Flange: Aluminum Alloy 356-T6.
Gaskets: Cork with Nitrile Binder (NC710).
O-Rings: Buna-N.
Wetted Hardware: Standard Plated Steel and Stainless Steel.
Strainer: Urethane Coated Steel. 51% Open Area, 0.375” (9,5 mm) Diameter Openings.
Hoisting Bail: Urethane Coated Steel.

Standard Equipment

NEMA Type 3R Rainproof Control Box. *(See Section130, Pages 80 and 85.)*
Provides On-Off, Circuit Breaker and Motor Overload Protection.

Optional Equipment

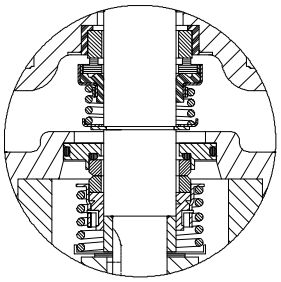
Liquid Level Control: *(See Sec. 130, Page 150.)*
a. Turtle Type Pressure Activated Level Switch.
b. .Float Activated Level Switch.
Staging Adapter Kit.

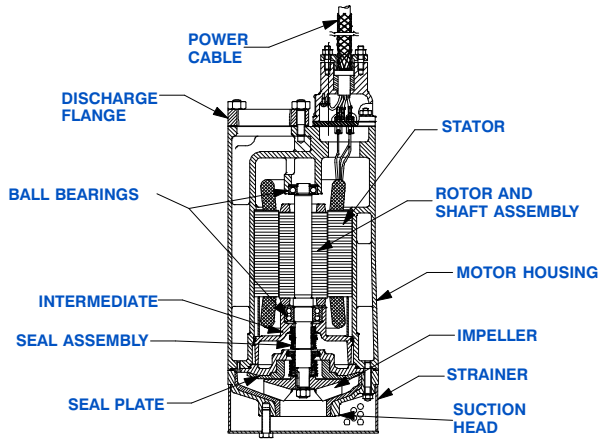
MOTOR/CABLE SPECIFICATIONS

Motor: Oil Filled Enclosure; 6.0 H.P.; 3450 R.P.M.
Single Phase: 230 Volt, 60 Hz, 34 Full Load AMPS, 7.2 kW (Max.)
Three Phase: 200/230/460/575 Volt, 60 Hz, 26.5/23/11.5/9.2 Full Load AMPS, 6.8 kW (Max.)
Power Cable: 4 Wire; Type SO/SOW/SOOW; 10 AWG; 3 Power Conductors, Plus 1 Ground. Nominal Length 50 Feet (15 m). Standard. (*Specify Alternate Length at Time of Order.*)
Recommended Generator Size: 15 kW Across the Line Start.

**Consult Factory for Applications Exceeding Maximum Pressure and/or Temperature Indicated.*

WARNING!
Do not use in explosive atmosphere or for pumping volatile flammable liquids.





SEAL SPECIFICATIONS
Tandem, Oil Lubricated.

Upper Seal: Type 21, Mechanical. Carbon Rotating Face. Ni-Resist Stationary Face. Buna-N Elastomers. Stainless Steel 18-8 Cage and Spring.

Lower Seal: Type 2, Mechanical. Tungsten Titanium Carbide Rotating and Stationary Faces. Stainless Steel 316 Stationary Seat. Fluorocarbon Elastomers (DuPont Viton® or Equivalent). Stainless Steel 303/304 Cage and Spring.

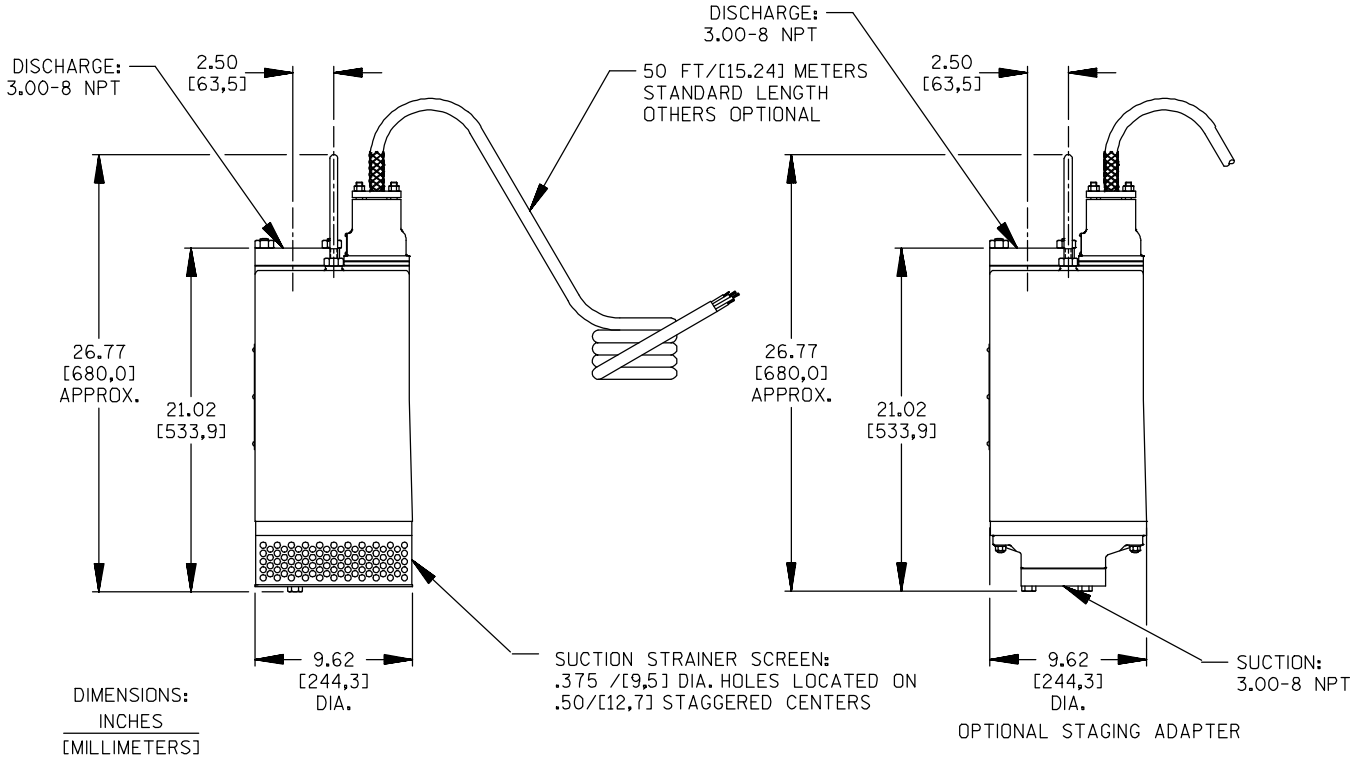
Maximum Temperature of Liquid Pumped, 122°F (50°C).*

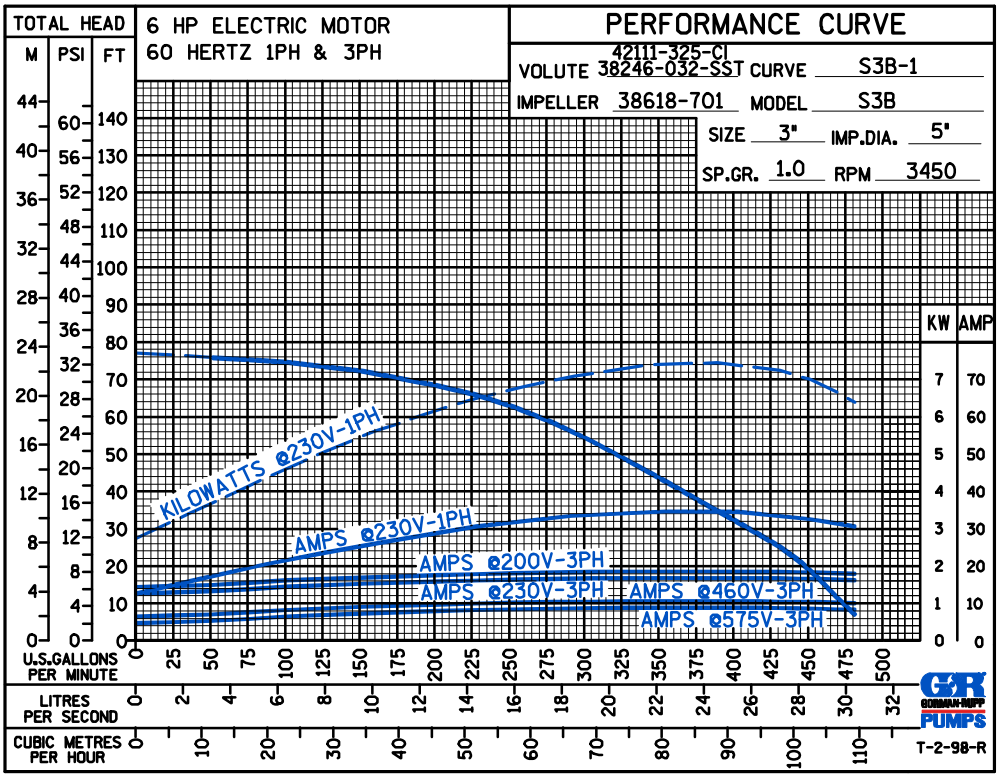
Specification Data

SECTION 130, PAGE 660

APPROXIMATE
DIMENSIONS and WEIGHTS

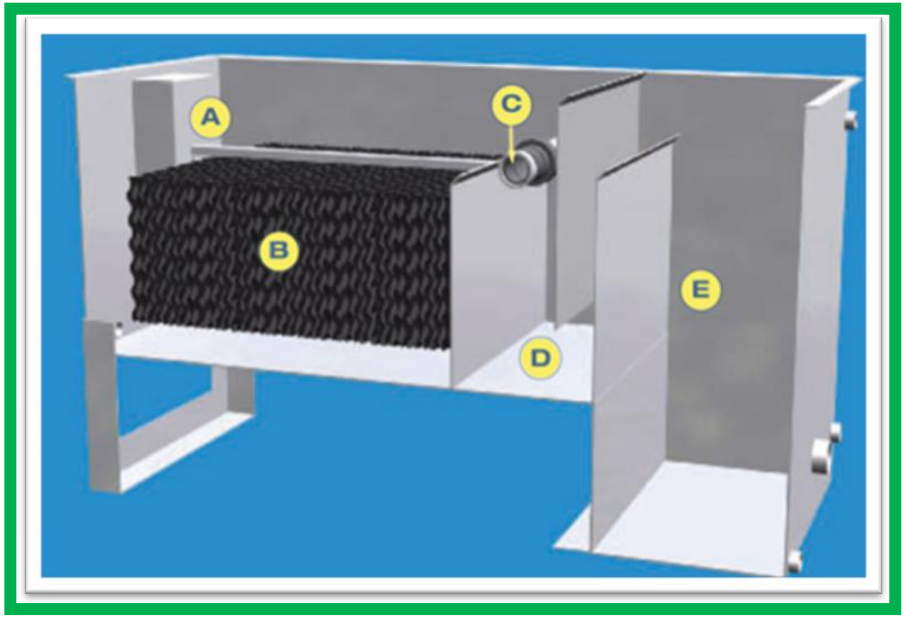
NET WEIGHT:	**145 LBS. (65,8 KG.)**
SHIPPING WEIGHT:	**155 LBS. (70,3 KG.)**
EXPORT CRATE SIZE:	**7.8 CU. FT. (0,22 CU. M.)**





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

LRT Environmental Oil Water Separator



Specifications:

- Rated for 100 gpm
- Manual drain line for NAPL
- Coalescing Media

A: Inlet
B: Separation Chamber with Coalescing Media
C: Drain Line for Oil/NAPL
D: Clarifier with Sludge Drain Line
E: Clean Water Chamber

IF YOU... MIX IT. FILL IT. PACK IT. SHIP IT.

WE HAVE A PRODUCT FOR YOU

55 Gallon Steel Drum, UN Rated, Cover with Bolt Ring Closure

Product Category: Open Head Steel Drums

Part #	26W55D
Capacity	55 gal.
Condition	New
Color	Black
Material	Carbon Steel
Closure	Cover w/ Bolt Ring Closure
Lining	Rust Inhibitor Enamel
Steel Thickness	1.2/0.9/1.2 (Top/Body/Bottom)
Steel Gauge	18/20/18 (Top/Body/Bottom)
Fittings	None
Dimensions	22.5" Dia. X 34"H (inside) 24" Dia. X 34.5"H (outside)
Pallet Pack	4 per layer, 8 drums per pallet
UN Rating Liquid	UN1A2/Y1.6/200

The CARY COMPANY Est. 1895

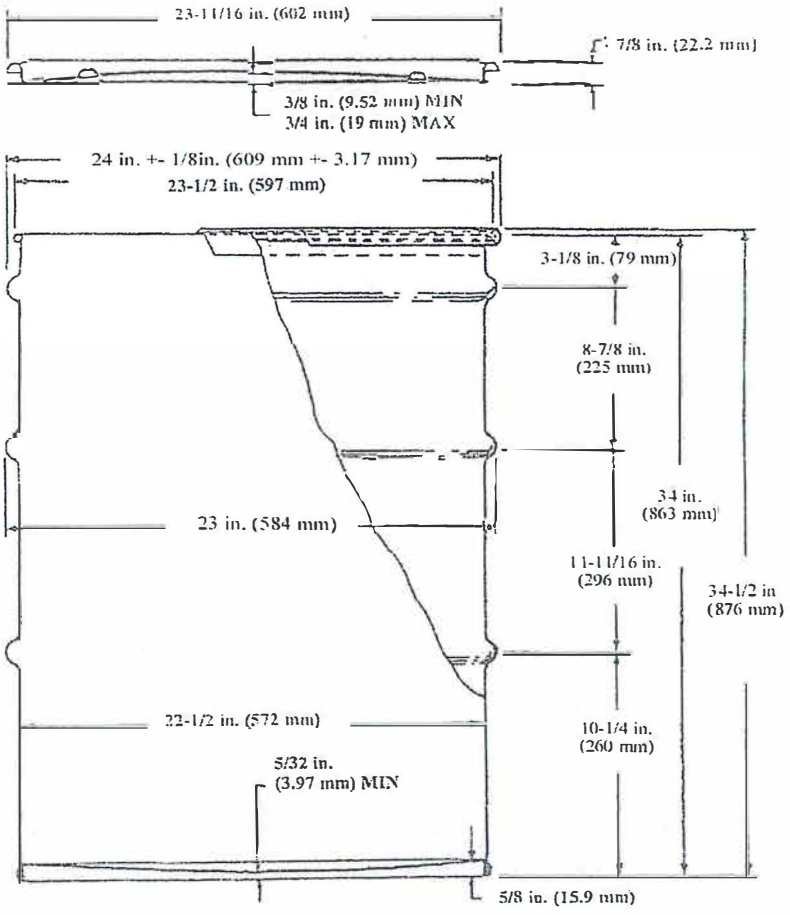
1195 W. Fullerton Ave. | Addison, IL 60101 | T: 630.629.6600 | F:630.629.3690 | TheCaryCompany.com

Drum Dimension

Form 302

Description:	3 Hoop 17-H Drum		
Cover Plugs:	2x3/4" TS Fittings		
Closure Ring:	12 Ga. 5/8" Bolt		
Over All Height:	34 1/2"		+ - 1/8
Over All Diameter:	24"		+ - 1/8
Weight:	0.9	37	+ - 1 Lbs.
	1.1	44	+ - 1 Lbs.
	1.2	48	+ - 1 Lbs.
	1.0/1.1/1.2	45	+ - 1 Lbs.
	1.1/.8/.9	36	+ - 1 Lbs.
	1.1/.8/1.1	37	+ - 1 Lbs.
	1.1/.9/1.1	39	+ - 1 Lbs.
	1.2/.9/1.2	40	+ - 1 Lbs.
	1.2/1.1/1.2	46	+ - 1 Lbs.
	1.4/1.1/1.2	47	+ - 1 Lbs.
	1.4/1.3/1.4	56	+ - 1 Lbs.

Max Volume Capacity: 57.2



Polyester Liquid Filter Bag

Features

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

Applications

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

Sizes

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

Micron Ratings

Available fibers range from 1 to 1500 microns

Options

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

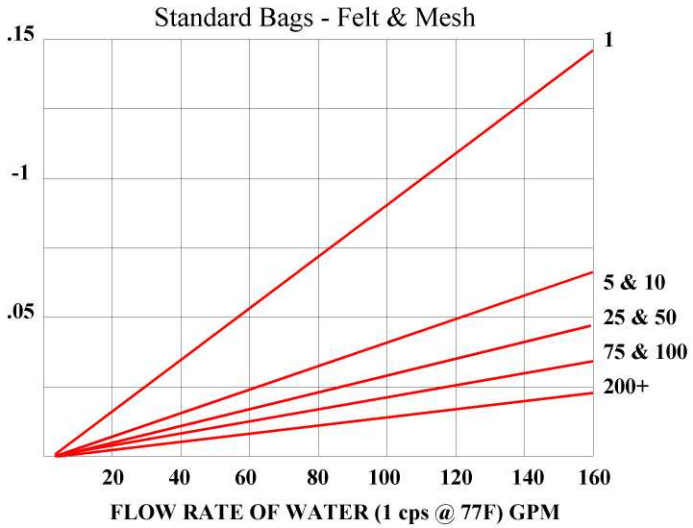
Optional Filter Media

Felt: Nomex, Polyester, Polypropylene

Monofilament: Nylon, Polyester, Polypropylene

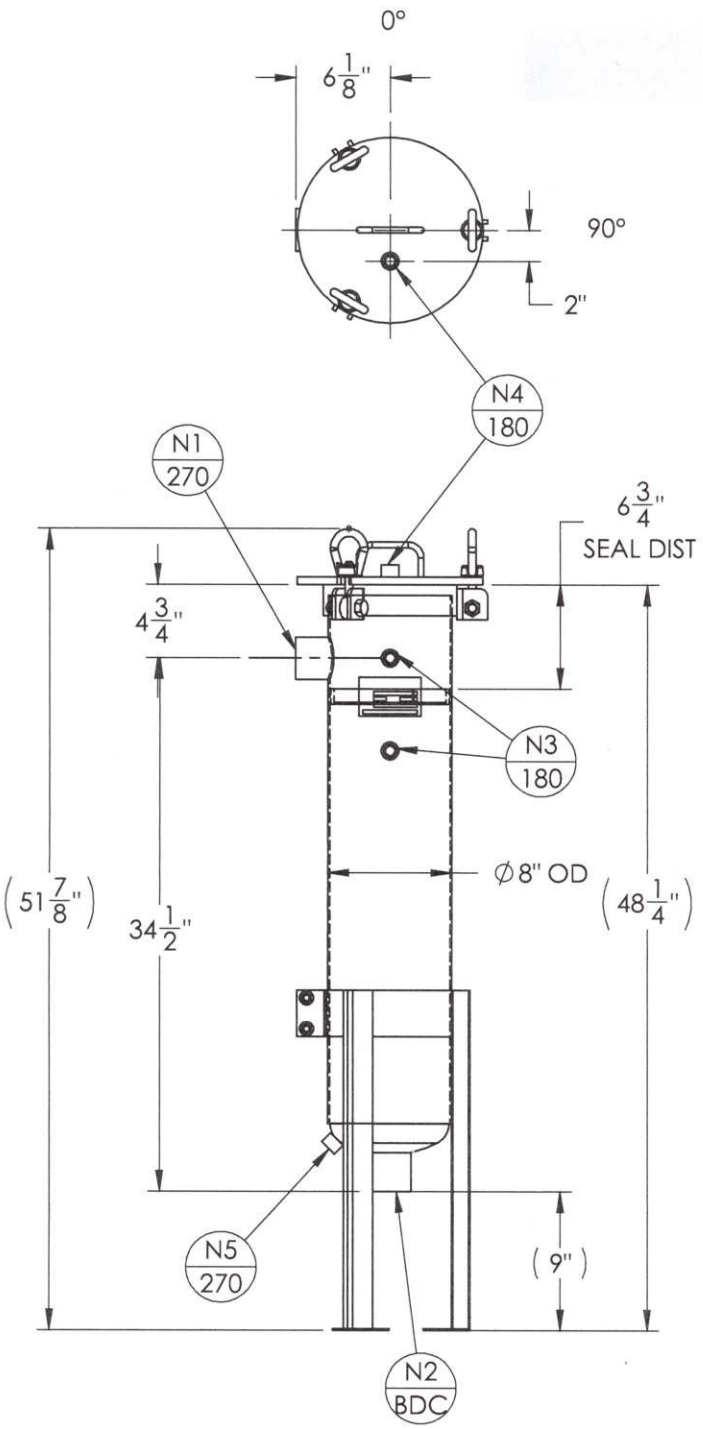
Multifilament: Nylon, Polyester

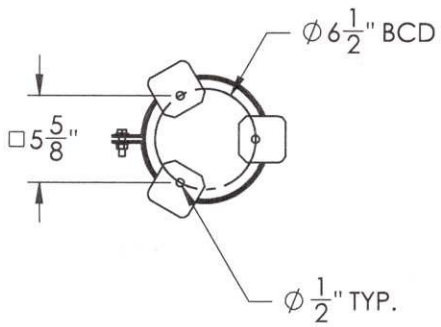
Polypropylene: Oil Removal



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

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





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

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

1:1

THIRD ANGLE PROJECTION

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

REV.	DATE	REVISION	DRAWN	APP'D

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

LRT Provided Bag Filter Housing

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

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

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

FILTRATION MEDIA :
8x30 RE-ACTIVATED CARBON
4x10 RE-ACTIVATED CARBON

GENERAL DESCRIPTION

Select Re-Activated carbon from domestic sources is quality screened during our purchasing process for activity, density and fines. The use of re-activated carbon is recommended as a lower cost alternative for most sites where drinking water quality is not necessary. In many cases our re-activated carbon meets and exceeds imported virgin carbon. In addition all carbon either sold by itself or installed in our filtration units traced by lot number to the installation or sale.

8x30 (Liquid Phase) Standard Specifications:	Standard	Value
Iodine Number	ASTM D-4607	800 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	8x30 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

4*10 (Vapor Phase) Standard Specifications:	Standard	Value
Carbon Tetrachloride Activity Level	ASTM D-3467	40 Minimum
Moisture Content	ASTM D-2867	5% Maximum (as packed)
Particle Size	ASTM D-2862	4x10 US Mesh
Ash		10% Maximum
Total Surface Area (N2BET)		1050 Minimum
Pore Volume (cc/g)		0.75

89 Crawford Street
Leominster, Massachusetts 01453
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Fax: 888.835.0617
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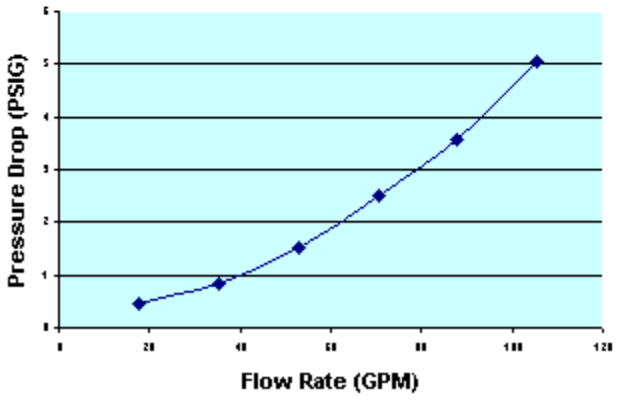
HPAF SERIES FILTERS
MODEL HPAF-2000

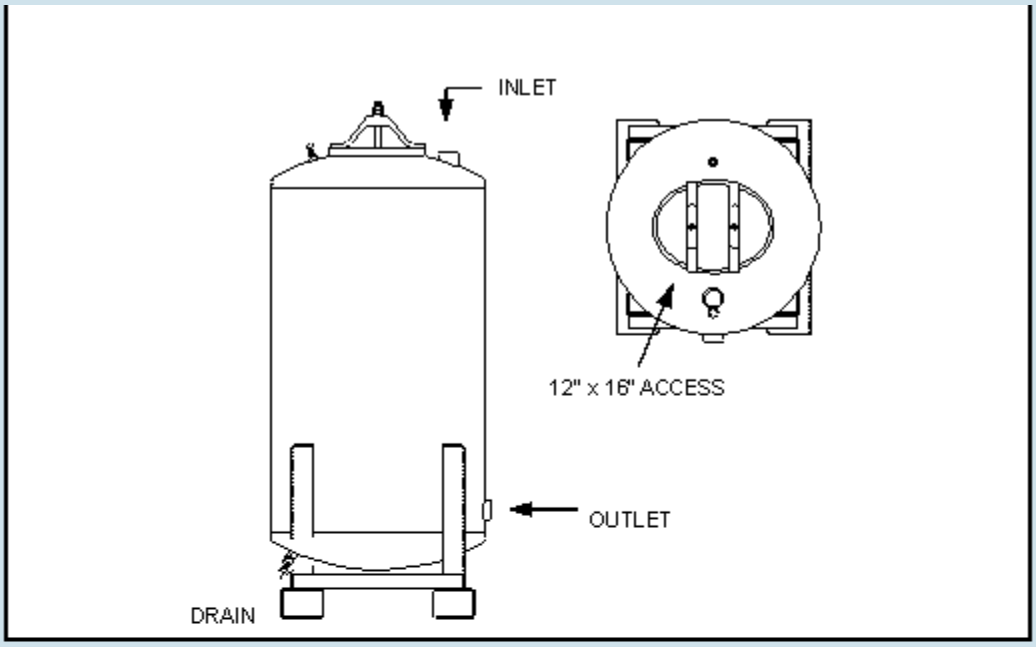
The HPAF-2000 filter is a media filter vessel designed to treat liquid streams. While the typical design application is a activated carbon adsorbtion unit, the filter can easily accommodate many medias. Some applications include:

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

PRESSURE DROP GRAPH

*(As Filled - 8*30 GAC)*





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

GROOVED & SMOOTH-END FLOWMETER MODEL MG/MS100

SPECIFICATIONS

PERFORMANCE

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

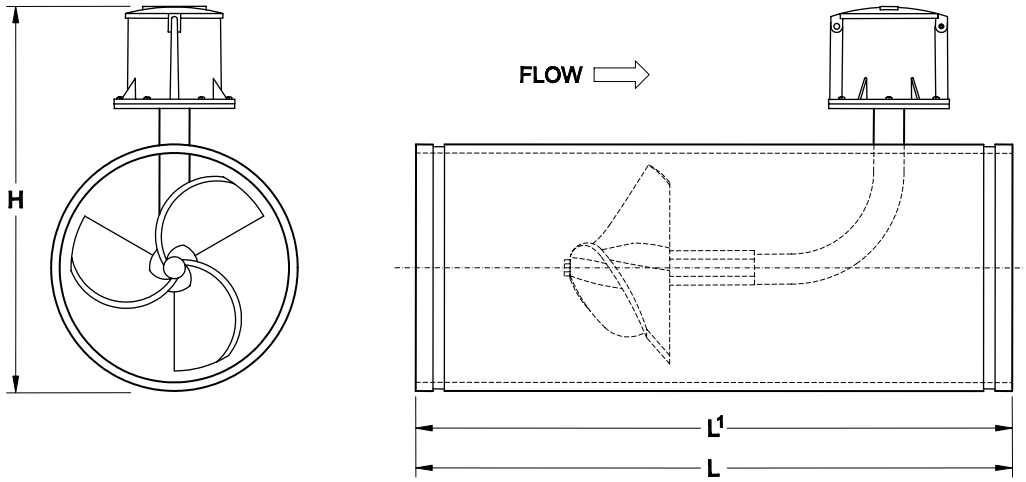
MATERIALS

TUBE: Epoxy-coated carbon steel.
BEARING ASSEMBLY: Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel.
MAGNETS: (Permanent type) Cast or sintered alnico
BEARING HOUSING: Brass; Stainless Steel optional
IMPELLER: Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter. High temperature impeller is optional.

REGISTER: An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged lens cover with locking hasp.
COATING: Fusion-bonded epoxy

OPTIONS

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



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

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

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

Larger flowmeters on special order.

Appendix D
Supplemental Information

MassDEP - Bureau of Waste Site Cleanup

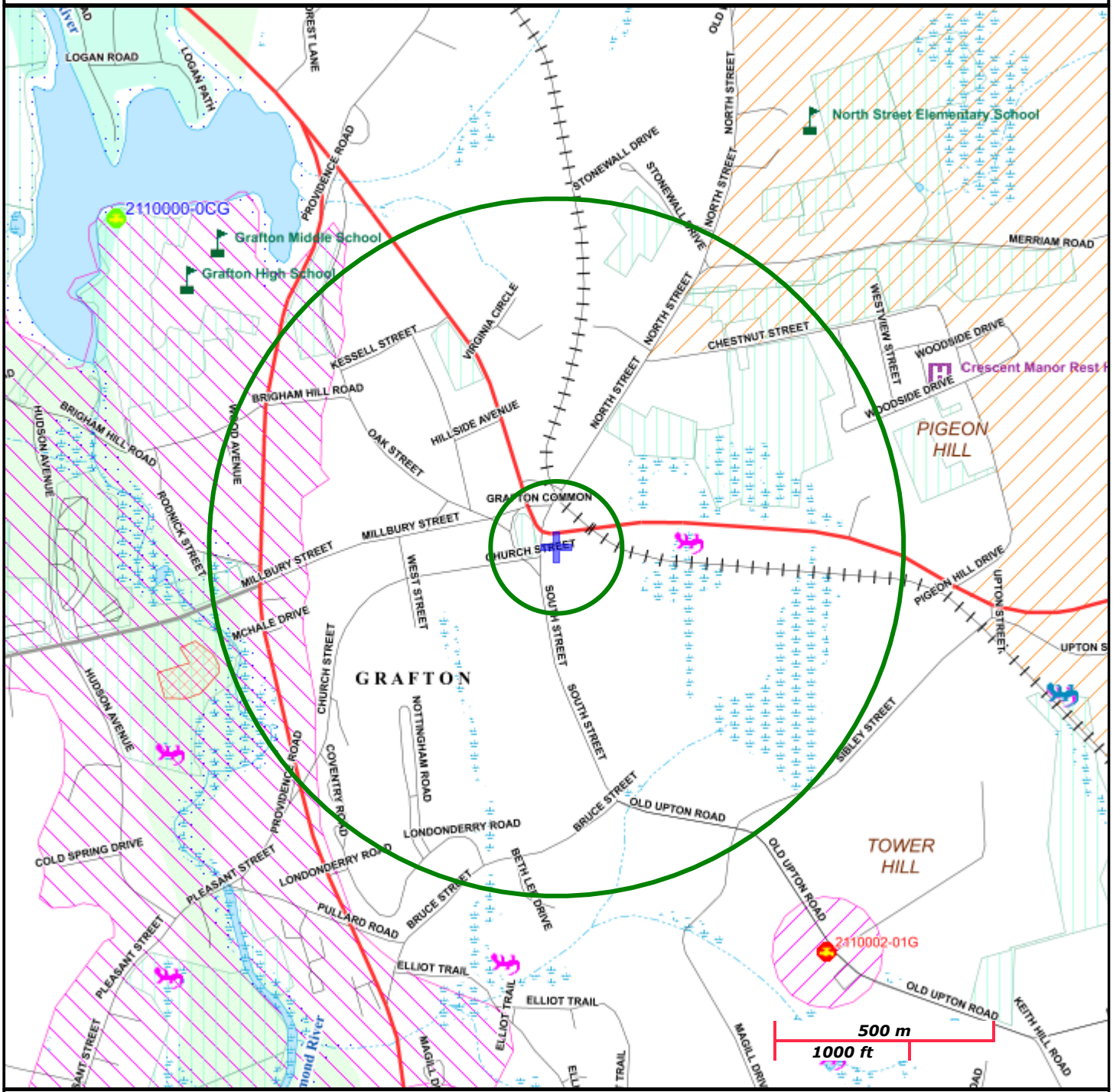
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
GRAFTON LIBRARY
35 GRAFTON COMMONS GRAFTON, MA

NAD83 UTM Meters:
4676136mN , 278377mE (Zone: 19)
January 15, 2020

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail
Boundaries: Town, County, DEP Region; Train; Powerline; Pipeline; Aqueduct
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam
Aquifers: Medium Yield, High Yield, EPA Sole Source
Non Potential Drinking Water Source Area: Medium, High (Yield)
PWS Protection Areas: Zone II, IWPA, Zone A
Hydrography: Open Water, PWS Reservoir, Tidal Flat
Wetlands: Freshwater, Saltwater, Cranberry Bog
FEMA 100yr Floodplain; Protected Open Space; ACEC
Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential
Solid Waste Landfill; PWS: Com.GW,SW, Emerg., Non-Com.

Documentation of the Results of the ESA Eligibility Determination:

Using information in Appendix II of the NPDES RGP, the project is eligible for coverage under this general permit under FWS Criterion B. This project is located in Worcester County. No designated critical habitats were listed in the project area.

An Endangered Species Consultation was conducted on the U.S. Fish & Wildlife Service New England Field Office ECOS IPaC webpage for the Site:

- The Northern long-eared bat was listed as "Threatened" in Worcester County

Based upon a discussion with the U.S. Fish & Wildlife Service (USFWS), temporary dewatering activities at the site are not expected to impact the Northern Long-eared Bat.

Northern long-eared bats spend winter hibernating in caves and mines. They use areas in various sized caves or mines with constant temperatures, high humidity, and no air currents. During the summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities or in crevices of both live trees and snags (dead trees). There are no caves and mines located at the site. There are no trees in the immediate vicinity of the site; and tree removal is not part of the scope of work related to this Notice of Intent. Therefore, temporary dewatering activities will have "no impact" to the Northern Long-eared Bat.

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: January 15, 2020
Consultation Code: 05E1NE00-2020-SLI-1002
Event Code: 05E1NE00-2020-E-02823
Project Name: Grafton Library

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-1002

Event Code: 05E1NE00-2020-E-02823

Project Name: Grafton Library

Project Type: Water Withdrawal / Depletion

Project Description: Construction Dewatering

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.20602876117751N71.68460845467911W

Counties: Worcester, 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.

Documentation of the National Historic Preservation Act Eligibility Determination:

As part of this permit, a determination was made as to whether there were any historic properties or places listed on the national register in the path of the discharge or in the vicinity of the construction of treatment systems or BMPs related to the discharge. A search on the Massachusetts Cultural Resource Information System Database found that the existing Grafton Library, is a historic building. Dewatering for construction of the new addition to the building will not be in the vicinity of the existing building and the property where construction is to take place is not considered historic. A search on the National Register of Historic Places did not list any potential historic properties on or near the project site in the databases. Based on the location of dewatering work in relation to the historic building the proposed discharge will not have the potential to effect historical properties.

Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

Search Criteria: Town(s): Grafton; Street No: 35; Street Name: Grafton Common; Resource Type(s): Area, Building, Burial Ground, Object, Structure;

Inv. No.	Property Name	Street	Town	Year
GRF.13	Grafton Public Library	35 Grafton Common	Grafton	c 1927

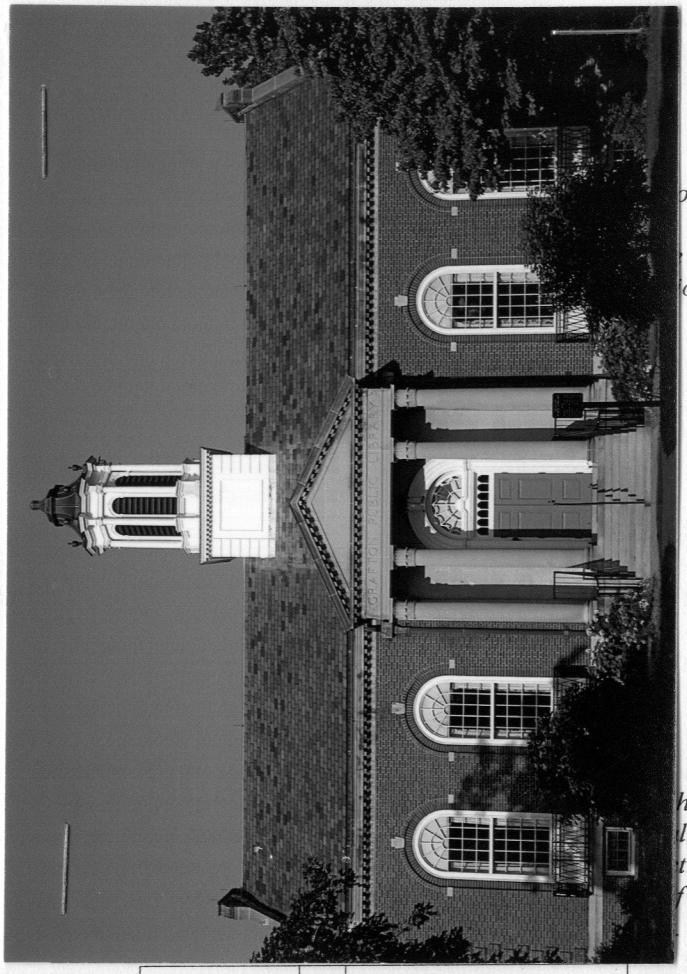
Inventory No:	GRF.13
Historic Name:	Grafton Public Library
Common Name:	
Address:	35 Grafton Common
City/Town:	Grafton
Village/Neighborhood:	Grafton
Local No:	18
Year Constructed:	c 1927
Architect(s):	Thayer, Oscar A.
Architectural Style(s):	Classical Revival
Use(s):	Library
Significance:	Architecture; Community Planning; Education; Politics Government
Area(s):	GRF.A: Grafton Center GRF.BY: Grafton Common Historic District
Designation(s):	Local Historic District (06/01/1981); Nat'l Register District (06/22/1988); Preservation Restriction (06/17/2005)
Building Materials(s):	Roof: Slate; Synthetic Other Wall: Brick; Copper; Limestone; Wrought Iron; Stone, Cut Foundation: Concrete Unspecified

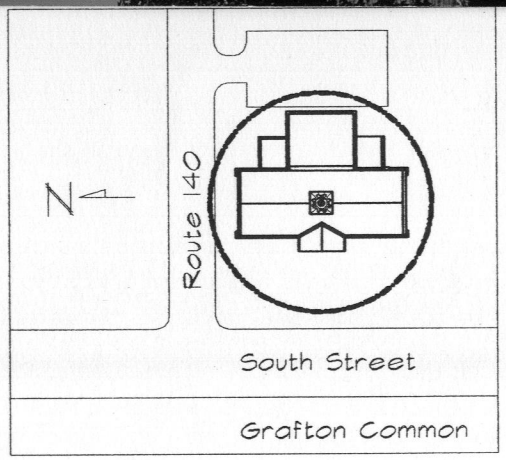
LHD-6/01/81 PR 6/17/05
NRDIS-6/22/88

FORM B – BUILDING

		A, BY GRF.13

MASSACHUSETTS HISTORICAL COMMISSION
MASSACHUSETTS ARCHIVES BUILDING
220 MORRISSEY BOULEVARD





Town Grafton

Place *(neighborhood or village)*

Address 35 Grafton Common

Historic Name The Grafton Center Library

Uses: Present Library

Original Library

Date of Construction 1927

Source Grafton Property index; a survey of Architectural and Cultural resources

Style/Form American Neoclassical

Architect/Builder Mr. Oscar Thayer

Exterior Material: Brick

Foundation Concrete

Wall/Trim Plaster

Roof Slate, Copper and Rubber roofs

Outbuildings/Secondary Structures

Major Alterations *(with dates)*

Condition

Moved X☐ no ☐ yes **Date**

Acreage ~0.5 (26,296 sq. ft.)

Setting The Grafton Library is a contributing member of the Grafton common, a local historical district which is also on the National Register.

Recorded by

Organization

Date *(month / year)* 06/05

Assessor's Number USGS Quad Area(s) Form Number

Follow Massachusetts Historical Commission Survey Manual instructions for completing this form.

BUILDING FORM

ARCHITECTURAL DESCRIPTION ☐ *see continuation sheet*

Describe architectural features. Evaluate the characteristics of this building in terms of other buildings within the community.

The Grafton Center Library is an elegant example of American Neo-classical architecture, and it was designed by Oscar A. Thayer of Boston in 1927. It is a contributing property to the Grafton Common, which is a Local Historic District, and is also listed on the National Historic Register.

The Building is brick with a limestone base. It has wood windows and a slate roof in front. It is crowned with an octagonal cupola, with a copper roof with ornamental spun copper urns. The stack area at the back of the building has flat roofs, which were previously asphalt and are now covered with rubber roofs.

The Library, along with the Evangelical Congregational Church, the Unitarian Universalist Society of Grafton and Upton and the old Town Hall, (now housing stores and offices,) is one of several significant civic buildings on the common. The nearby Baptist Church of Grafton is also a part of this Historic District.

HISTORICAL NARRATIVE ☐ *see continuation sheet*

Discuss the history of the building. Explain its associations with local (or state) history. Include uses of the building, and the role(s) the owners/occupants played within the community.

The origins of the Grafton Public Library date to 1866 when Joseph Leland offered the Town of Grafton $1,000 for a free public library, provided the town would make a matching contribution. Initially it was housed in the Town Hall at the south end of Grafton Common. This continued until 1927 when the present Center Library was built with funds bequeathed by Jerome Wheelock for the construction of a new library or town hall. The 1927 structure has served as Grafton's principle library since. During that time it has been very little altered. In 1964 a third bookstack level was added. Provision for such an addition to the capacity of the library was made in the original plans and the newer stacks appear little different from the older stacks. In 1989 the children's services area was moved from space in the main reading room to the "lecture hall" on the lower level." This change was effected by installation of new shelves and furniture but with little or no alteration of the structure of either area.

Apart from the addition of bookstacks and moving the children's collection, changes have been essentially cosmetic. Exterior doors have been painted many shades of green or white at different times, and the reading room color scheme has been modified perhaps three times, but always utilizing similar beige and tan hues. The advent of computers and other electronic media has resulted in changes to the electrical system, cabling for network connections, and similar additions to the buildings infrastructure. None the less, the building has retained its essential appearance and character with relatively little modification.

BIBLIOGRAPHY and/or REFERENCES ☐ *see continuation sheet*

☐ Recommended for listing in the National Register of Historic Places. *If checked, you must attach a completed National Register Criteria Statement form.*

LHD - 6/1/81
NRDIS - 6/22/88

PR 6/17/05

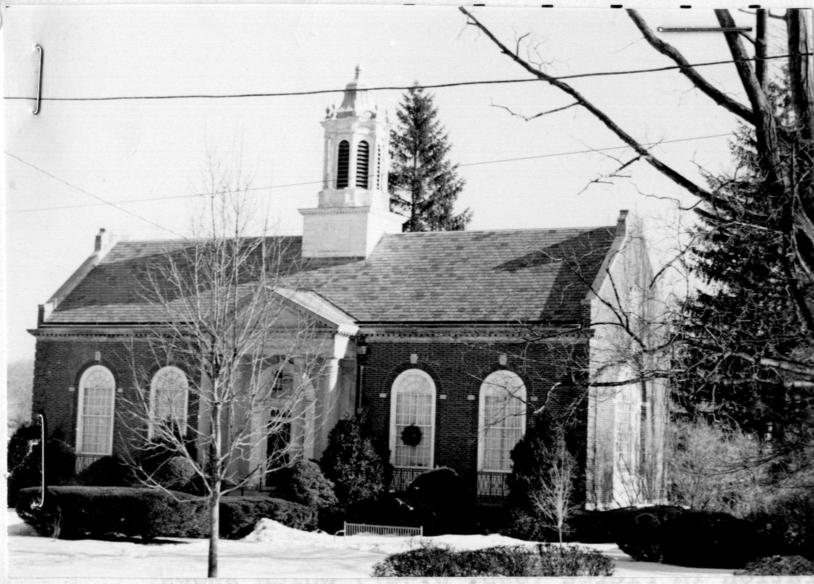
PR - GRAFT 1C

FORM B - BUILDING

In Area no.	Form no.
~~C~~ A&BY	~~18~~ 13

GRF.13

MASSACHUSETTS HISTORICAL COMMISSION
Office of the Secretary, State House, Boston



1. Town **Grafton, Massachusettts**

Address 35 **Central Square**

Name **Grafton Public Library**

Present use **Library**

Present owner **Town of Grafton**

3. Description:

Date **1927/28**

Source **Town records**

Style **Colonial, Georgian Revival**

Architect **Oscar Thayer**

Exterior wall fabric **brick**

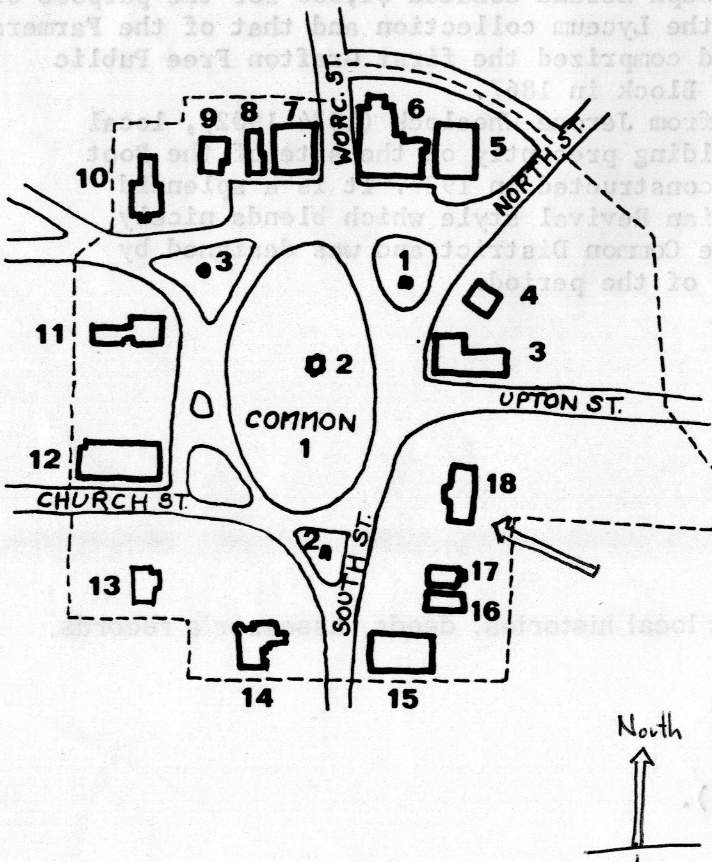
Outbuildings (describe) **none**

Other features **none**

Altered **no** Date

Moved **no** Date

4. Map. Draw sketch of building location in relation to nearest cross streets and other buildings. Indicate north.



5. Lot size:

One acre or less **x** Over one acre

Approximate frontage **190' x 175'**

Approximate distance of building from street **75'**

6. Recorded by **John Perkins**

Organization **Grafton Historical Commission**

Date **March, 1980**

(over)

37M-7-77

7. Original owner (if known) Town of Grafton

Original use Library

Subsequent uses (if any) and dates same

8. Themes (check as many as applicable)

Aboriginal		Conservation		Recreation	x
Agricultural	x/	Education	x	Religion	
Architectural		Exploration/ settlement		Science/ invention	
The Arts	x				
Commerce		Industry		Social/ humanitarian	x
Communication	x	Military			
Community development	x	Political		Transportation	

9. Historical significance (include explanation of themes checked above)

The key to this site is an illustration in Pierce (opp. p.487) which shows Forbush and Brown's Boot and Shoe Manufactory formerly the Hancock Block. To the right of this structure stands the small building described in Area C, Form No. 17 and to the left what is undoubtedly a building constructed ca. 1840 by Lovell Stow, first used as a store and thereafter by the Stockwell Family for tailoring. At one time it also housed the book collection of the Grafton Lyceum organized in 1858. After Joseph Leland donated $1,000 for the purpose of forming a public library in 1866, the Lyceum collection and that of the Farmers' Club were combined with the new gift and comprized the first Grafton Free Public Library which opened in the Warren Block in 1867.

Thanks to a generous bequest from Jerome Wheelock (1834-1902), local engineer/inventor, the library building presently on the site of the Boot Manufactory and Stow building was constructed in 1927. It is a splendid building of sedate, Colonial/Georgian Revival style which blends nicely with the general environment of the Common District and was designed by Oscar Thayer, well-known architect of the period.

10. Bibliography and/or references (such as local histories, deeds, assessor's records, early maps, etc.)

Contemporary accounts.
Library records.
Pierce. HISTORY..... (1879).