GWTT
Ground/Water Treatment & Technology, LLC

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Millbury, MA 01527
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February 19, 2021

U.S. Environmental Protection Agency
Office of Ecosystem Protection
EPA/OEP RGP Applications Coordinator
5 Post Office Square, Suite 100 (OEP06-01)
Boston, MA 02109-3912
ATTN: Remediation General Permit NOI Processing

Via Email: NPDES.Generalpermits@epa.gov

Re: Remediation General Permit-MAG910000-Notice of Intent
Temporary Contaminated Site Dewatering
24 East River Street
Orange, MA 01970

To Whom It May Concern:

On behalf of East River Orange, LLC (The Owner) and Williamson Environmental, LLC (The Operator), Ground/Water Treatment and Technology, Inc. (GWTT) requests approval from the United States Environmental Protection Agency (USEPA) of this Notice of Intent (NOI) in accordance with the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for Massachusetts (MAG910000) under Category III Contaminated Site Dewatering. Attached is a copy of the NOI form and supporting documentation pertaining to the treatment and discharge of groundwater generated from a temporary construction dewatering project at 24 East River Street in Orange, MA. The location of the site is shown in Attachment B.

The subject property at 24 East River Street is identified by the Town of Orange Assessor's Office as Lot 60 on Map 110 and totals approximately 1.76 acres. The lot is located at the corner of East River Street and South Main Street, just south of Millers River as shown in the Project Location Plan/Site Layout Drawing in Attachment B. A machine shop is located at the northeast corner of the property, which is adjacent to a historic blacksmith shop/warehouse building. The remainder of the property is vacant commercial land, planned for redevelopment into a gasoline station combined with a convenience store. A review of the current MassDEP Priority Resource Map indicates that the site is not located within a Zone II of a public water supply, an Interim Wellhead Protection Area, or Zone A of a Class A surface water supply reservoir. There are no known private or public water supply wells located either within the site boundaries or within a half mile of the site. A MassDEP Phase I Site Assessment Map is included in Attachment B.

East River Orange, LLC purchased the property on August 23, 2018 and submitted a Release Notification Form (RNF) to the MassDEP on December 2, 2020 due to reportable concentrations of 1.) heavy metals (arsenic and lead) from soil boring data and 2.) chlorinated VOCs and cadmium from groundwater monitoring well data. Samples were obtained from four soil borings and nine groundwater monitoring wells on the property in October 2020 – refer to the Site Plan in Attachment B for locations. The MassDEP issued Release

Tracking Number (RTN) 1-21228 for the site and issued the owner a Notice of Responsibility on December 8, 2020. A Release Abatement Measure (RAM) is planned to be submitted to the MassDEP for the proposed redevelopment activities, including soil excavation and trenching for the building foundation, underground utilities, underground storage tank (UST), and fuel dispenser islands.

This NOI was prepared in anticipation of construction dewatering for the installation of the UST, which involves the deepest and most extensive excavation required for the project. The attached Site Plan shows the proposed location of the UST at the southwest corner of the property, adjacent to South Main Street. Based on the October 2020 subsurface investigation referenced above, depth to groundwater at the site ranged from 2.2-feet to 4.8-feet below ground surface (bgs). The UST excavation is expected to reach approximately 16-feet deep within a sheet pile coffer dam. Dewatering in support of the excavation is expected to commence the first week of April 2021, and last approximately two months in duration. Discharge water from the excavation area will be treated onsite prior to discharge to the municipal storm drain collection system that flows to an outfall to Millers River, just north of the project location under the Rt 122 (South Main Street) bridge as shown on the Site Layout Plan. The proposed onsite groundwater treatment system is depicted in Attachment B. The Town of Orange Highway Department has been notified of the project and has given The Operator permission to discharge to an existing catch basin along South Main Street, which leads to the subject outfall to Millers River.

In accordance with the NOI characterization requirements, water samples were obtained on November 25, 2020 from both the source and receiving water. A source water grab sample was obtained from groundwater monitoring well MW-101, located within the excavation area of the UST. The proposed dewatering activity falls under Activity Category III, Contaminated Site Dewatering with known contamination based on previous site assessment under the Massachusetts Contingency Plan (MCP). Characterization of contamination types A, C, and E as outlined in Table 1, Part 1.1 of the RGP was conducted from the November 25 sampling event. Additional data (Group I and II PAHs and Naphthalene) from the October 2020 investigation was used to supplement the source water characteristics for this NOI filing. Source water contaminants are summarized in Table 1, Attachment C.

A grab sample was obtained at the outfall location on Millers River (Segment ID: MA35-04); results are summarized in Table 2, Attachment C. Receiving water pH and temperature (6.7 SU and 14°C, respectfully) were approximated from median values obtained from the MassDEP's *Millers River Watershed 2000 Water Quality Assessment Report*. Refer to Attachment C for copies of laboratory data for both the source and receiving water. It should be noted that the river segment in question is listed in the MassDEP 2016 Integrated List of Waters as a Category 5 "Waters Requiring a Total Maximum Daily Limit" (TMDL). The pollutant requiring a TMDL is PCBs in fish tissue. To date no TMDL has been developed for this segment for the listed impairment. This is confirmed in the email correspondence with MassDEP referenced below regarding approval for critical flow and dilution factor used for WQBEL estimates.

Based on the analytics, Water Quality Based Effluent Limitations (WQEBLs) were established according to RGP methodology in Appendix V. The StreamStats model estimated a critical low flow (7Q10) of 46.6 ft^3/s. With a maximum design treated discharge flowrate of 100 gpm (0.22 ft^3/s), the estimated dilution factor is 213 (see Attachment D for calculations and MassDEP approval letter). Using the worksheet provided by the USEPA, WQEBL calculations for required pollutants are summarized in Attachment D, along with the RGP Technology Based Effluent Limitations (TBELs).

To meet the TBEL/WQBEL discharge limitations listed in the MW-101 summary table, the proposed on-site treatment system of the source water will use fractionation, equalization, mechanical filtration, and liquid phase granular activated carbon. It is assumed that the metals in the raw water stream are associated with total suspended solids (TSS), which can be removed by sedimentation in the 21,000-gallon fractionation tank and further removed by mechanical filtration using 5-micron bag filters. VOCs in the process water will be

removed by adsorption in the 2,000-pound carbon vessels, arranged in lead lag configuration. Flowrate through the treatment system is equalized at the fractionation tank, using pump float switches to operate the transfer pumps. The maximum design flowrate is 100 gpm, which is controlled by throttling the discharge valve at the pump and confirmed by the flowmeter/totalizer at the discharge. If the base treatment system components cannot lower metals concentrations below the TBEL/WQBEL discharge limits, greater mechanical filtration will be employed using cartridge filtration at 1-micron. Further information on the base treatment system is depicted in the P&ID/layout drawings and described in the Best Management Practices Plan (BMPP) in Attachment F.

The final consideration of the treatment system process is the potential impact on either endangered species and critical habitat under the Endangered Species Act (ESA) or historic properties under the National Historic Preservation Act (NHPA). Using the guidelines in Appendix I of the RGP, the activities under this filing best fit the US Fish and Wildlife (FWS) "Criterion C." While the FWS Information, Planning, and Conservation (IPaC) online search system stated that there were no critical habitats within the project area, there was one endangered or threatened species of concern in the Northern Long-eared Bat. After further investigation it was determined that the planned site activities will have no adverse impact on the Northern Long-eared Bat since the activity is not related to tree removal and the potential impact on maternity roost trees, which is the prohibited activity under the Massachusetts Endangered Species Act. Similarly, investigation of potential adverse impact to historic properties concluded that while some historic properties are located on the periphery of site activity, no existing building structures would be affected by the dewatering activities and treatment system that discharges to an underground municipal storm drain (Criterion B). Refer to Appendix E for supporting documentation related to the ESA and NHPA.

In summary, GWTT is pleased to submit this application on behalf of both The Owner and The Operator for the purpose of obtaining authorization to discharge groundwater from the project construction site under the provisions of MAG910000. Based on the analytical data, treatment of the source water prior to discharge is required to meet the requisite TBELs and WQBELs. The proposed groundwater treatment system maintained under the BMPP for this project consists of a fractionation/equalization tank, bag filters, and liquid phase activated carbon adsorbers. If the base treatment system components cannot lower metals concentration to meet the effluent limitation requirements, finer cartridge filtration can be added between the bag filters and adsorption vessels. The treatment system and discharge to the municipal storm drain system to the Rt 122 bridge outfall is of short duration and will not adversely affect surrounding endangered species or historic properties.

Please feel free to contact the undersigned at 508-755-7075 or dsullivan@gwttllc.com if you have any questions or if you require any additional information.

Very Truly Yours,
Ground/Water Treatment & Technology, Inc.

Daniel Sullivan
Project Manager/Engineer

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT 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:
Property - East River Orange</td><td colspan="3">Site address:
Street: 24 East River St</td></tr>
<tr><td>City: Orange</td><td>State: MA</td><td>Zip: 01364</td></tr>
<tr><td rowspan="4">2. Site owner
East River Orange, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: D.P. Higgins, Jr.</td></tr>
<tr><td colspan="2">Telephone: 978-391-1014</td><td>Email:</td></tr>
<tr><td colspan="3">Mailing address:
Street: 280 Ayer Road</td></tr>
<tr><td>City: Harvard</td><td>State: MA</td><td>Zip: 01451</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
Williamson Environmental LLC</td><td colspan="3">Contact Person: Thomas Williamson, Jr.</td></tr>
<tr><td colspan="2">Telephone: 978-425-6600</td><td>Email: tomw@williamsonenv.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: Two Shaker Road, Suite B224</td></tr>
<tr><td>City: Shirley</td><td>State: MA</td><td>Zip: 01464</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
NA

NPDES permit is (check all that apply: ☐ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
RTN 1-21228
☐ 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):
Millers River	MA35-04	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. Yes, TMDL for PCBs in Fish Tissue. No TMDL is available per consultation with MassDEP.

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.	30.1 MGD
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.	213

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: 12/22/2020 (See email correspondence in Attachment C)

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ☐ Existing discharge ■ New discharge ☐ New source	
Outfall(s): Outfall 001: Subject outfall is located underneath Rt. 122 (South Main Street) bridge on south side of Millers River.	Outfall location(s): (Latitude, Longitude) 42.589073364864326, -72.30953204975455
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Discharge from construction dewatering treatment system will flow to municipal storm drain system along S. Main St., to outfall underneath Rt. 122 bridge. ☐ 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): Expected Start Date: 04/01/21 Expected End Date: 06/01/21 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✓	1	NH3-001	50	95	95	Report mg/L	---
Chloride		✓	1	4500CIE	1000	13,000	13,000	Report µg/l	---
Total Residual Chlorine	✓		1	4500CIG	50	<50	<50	0.2 mg/L	
Total Suspended Solids		✓	1	2540D-11	5000	570,0000	570,0000	30 mg/L	---
Antimony		✓	1	200.8	0.5	2.2	2.2	206 µg/L	
Arsenic		✓	1	200.8	0.5	57	57	104 µg/L	
Cadmium		✓	1	200.8	0.1	30	30	10.2 µg/L	
Chromium III		✓	1	200.8	10	120	120	323 µg/L	
Chromium VI	✓		1	7196A	10	<10	<10	323 µg/L	
Copper		✓	1	200.8	5	10,000	10,000	242 µg/L	194.8
Iron		✓	1	200.8	50	110,000	110,000	5,000 µg/L	
Lead		✓	1	200.8	0.5	580	580	160 µg/L	0.43
Mercury	✓		1	245.1	0.2	<0.2	<0.2	0.739 µg/L	
Nickel		✓	1	200.8	0.5	170	170	1,450 µg/L	
Selenium		✓	1	200.8	0.5	4.4	4.4	235.8 µg/L	
Silver		✓	1	200.8	0.5	2.2	2.2	35.1 µg/L	
Zinc		✓	1	200.8	5	19,000	19,000	420 µg/L	
Cyanide	✓		1	OIA-1677	20	<20	<20	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		0					100 µg/L	---
Benzene	✓		0					5.0 µg/L	---
1,4 Dioxane	✓		0					200 µg/L	---
Acetone	✓		0					7.97 mg/L	---
Phenol	✓		0					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	1	<1	<1	4.4 µg/L	
1,2 Dichlorobenzene	✓		1	624.1	1	<1	<1	600 µg/L	---
1,3 Dichlorobenzene	✓		1	624.1	1	<1	<1	320 µg/L	---
1,4 Dichlorobenzene	✓		1	624.1	1	<1	<1	5.0 µg/L	---
Total dichlorobenzene	✓		1	624.1	3	<3	<3	763 µg/L in NH	---
1,1 Dichloroethane	✓		1	624.1	1	<1	<1	70 µg/L	---
1,2 Dichloroethane	✓		1	624.1	1	<1	<1	5.0 µg/L	---
1,1 Dichloroethylene	✓		1	624.1	0.5	<0.5	<0.5	3.2 µg/L	---
Ethylene Dibromide	✓		1	8011/504	0.02	<0.02	<0.02	0.05 µg/L	---
Methylene Chloride	✓		1	624.1	1	<1	<1	4.6 µg/L	---
1,1,1 Trichloroethane	✓		1	624.1	1	<1	<1	200 µg/L	---
1,1,2 Trichloroethane	✓		1	624.1	1	<1	<1	5.0 µg/L	---
Trichloroethylene		✓	1	624.1	1	6.4	6.4	5.0 µg/L	---
Tetrachloroethylene	✓		1	624.1	1	<1	<1	5.0 µg/L	
cis-1,2 Dichloroethylene	✓		1	624.1	1	<1	<1	70 µg/L	---
Vinyl Chloride	✓		1	624.1	1	<1	<1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✓		0					190 µg/L	
Diethylhexyl phthalate	✓		0					101 µg/L	
Total Group I PAHs	✓		1	MA EPH	2	<2	<2	1.0 µg/L	---
Benzo(a)anthracene	✓		1	MA EPH	2	<2	<2	As Total PAHs	
Benzo(a)pyrene	✓		1	MA EPH	2	<2	<2		
Benzo(b)fluoranthene	✓		1	MA EPH	2	<2	<2		
Benzo(k)fluoranthene	✓		1	MA EPH	2	<2	<2		
Chrysene	✓		1	MA EPH	2	<2	<2		
Dibenzo(a,h)anthracene	✓		1	MA EPH	2	<2	<2		
Indeno(1,2,3-cd)pyrene	✓		1	MA EPH	2	<2	<2		

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs	✓		1	MA EPH	2	<2	<2	100 µg/L	---
Naphthalene	✓		1	MA EPH	2	<2	<2	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓		0					0.000064 µg/L	---
Pentachlorophenol	✓		0					1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✓		1	1664B	5	<5	<5	5.0 mg/L	---
Ethanol	✓		1	1666	250	<250	<250	Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	524.2	0.5	<0.5	<0.5	70 µg/L	
tert-Butyl Alcohol	✓		1	524.2	30	<30	<30	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	524.2	0.5	<0.5	<0.5	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:									
Total Hardness (as COCO3)	✓		1	200.8	1,000	150,000	150,000		
pH (Standard Units)	✓		1	4500HB11	0.1	6.46	6.46		

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.

21,000 gallon fractionation/equalization tank, 5HP float-switch automated duplex pump skid, 5-micron bag filter, two (2) 2,000 pound liquid phase activated carbon adsorbers in lead/lag configuration, and effluent flow meter. If necessary, 1-micron cartridge filtration.

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: 21,000 gallon fractionation/equalization tank 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.	50
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	NA

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.

NA

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 has been prepared in accordance with Section 2.5 of the RGP. The BMPP is to be implemented at the start of discharge activities.	
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: February 18, 2021
Print Name and Title: Thomas Williamson Jr., President	

Ground/Water Treatment & Technology, LLC

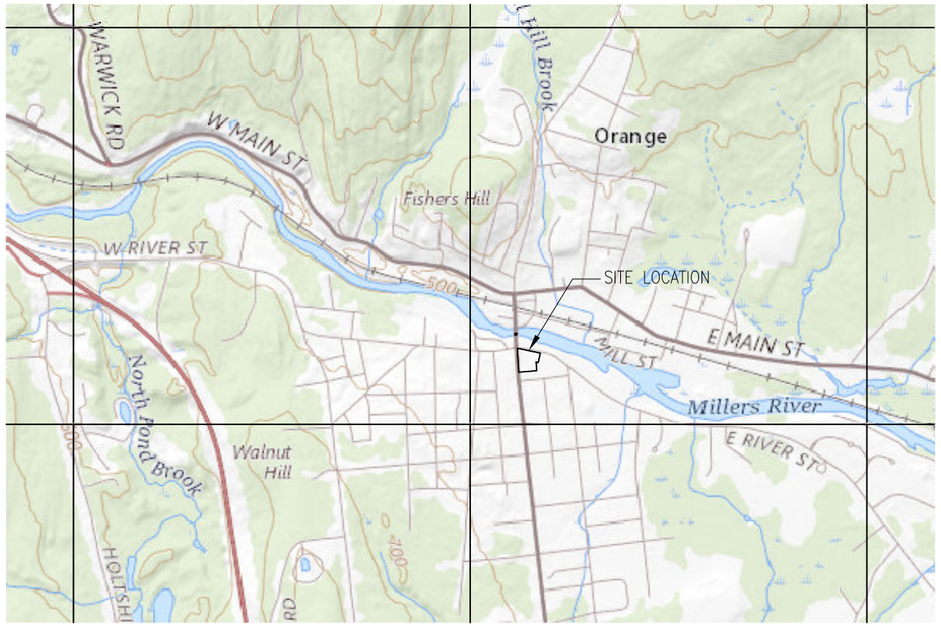
39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT B: SITE LOCATION AND DRAWINGS

- Project Location/Site Layout – 24 East River St, Orange, MA
- Site Plan
- MassDEP Phase 1 Site Assessment Map
- 100 GPM Temporary Treatment System Equipment Layout
- Piping & Instrumentation Diagram (P&ID)
- P&ID Symbol Legend Sheet

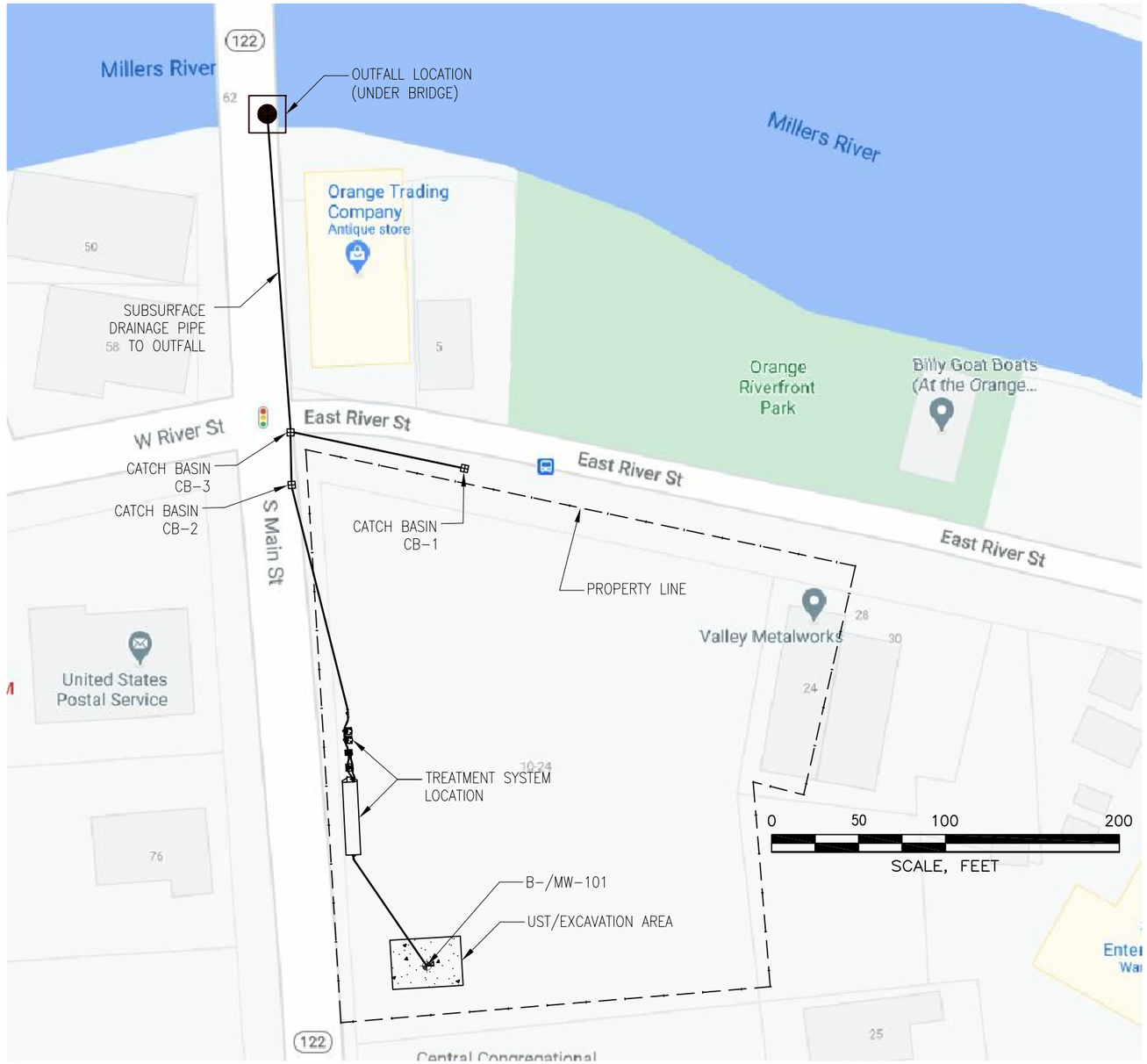
PROJECT LOCATION PLAN

SCALE 1:25,000



SITE LAYOUT

PLAN VIEW



REV.	DATE	BY	REMARKS	REV.	DATE	BY	REMARKS
–	12/11/20	SLM	PRELIMINARY DESIGN FOR REVIEW.				

CUSTOMER: WILLIAMSON ENVIRONMENTAL, LLC

SITE: 24 EAST RIVER STREET, ORANGE, MA

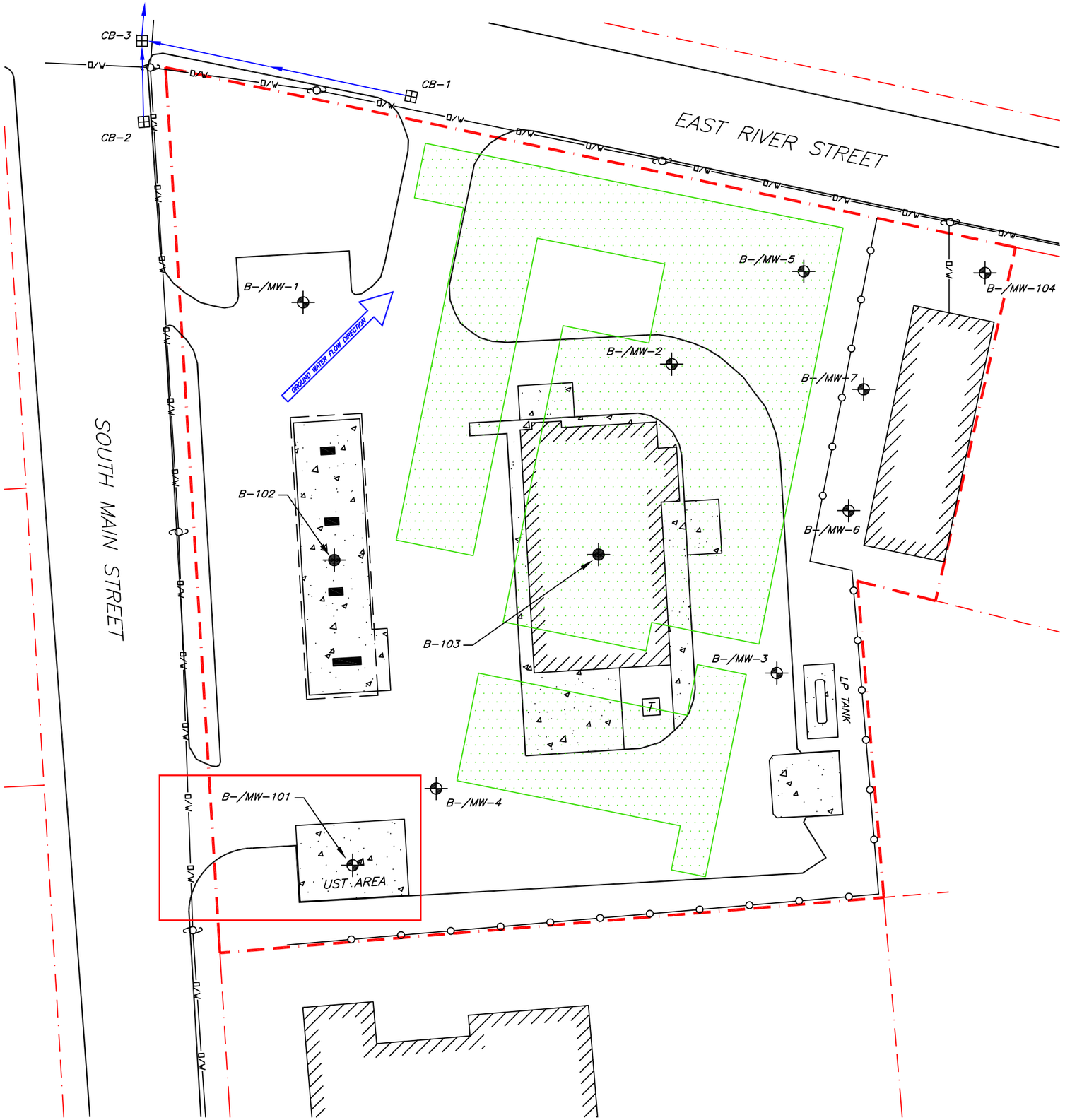
TITLE: SITE LAYOUT
100 GPM
TEMPORARY TREATMENT SYSTEM

SCALE: NTS

	BY	DATE
DRAWN	SLM	12/11/20
APPROVALS	BY	DATE
MECH.		
I&C		
PROCESS		

GWTT Ground/Water Treatment & Technology, LLC
627 MOUNT HOPE ROAD WHARTON, NJ 07885
PHONE: 973-983-0901 · FAX: 973-983-0903
www.gwttllc.com

DWG SIZE: B | SHEET: 1 OF 1 | DRAWING NO.: P003738–M–121 | –



PROPERTY LINE
CANOPY
EDGE OF PAVEMENT
FENCE
O/W OVERHEAD WIRES
SUBSURFACE STORMWATER FLOW DIRECTION
GROUND WATER MONITORING WELL
SOIL BORING
UTILITY POLE
DISPENSER ISLAND
T TRANSFORMER
CATCH BASIN
FOOTPRINT OF FORMER SITE BUILDING(S)

Williamson Environmental LLC

SITE PLAN

FIGURE 1

PROPERTY
24 EAST RIVER STREET
ORANGE, MASSACHUSETTS

SCALE
0' 20' 40'

DATE
11/4/20

MassDEP - Bureau of Waste Site Cleanup

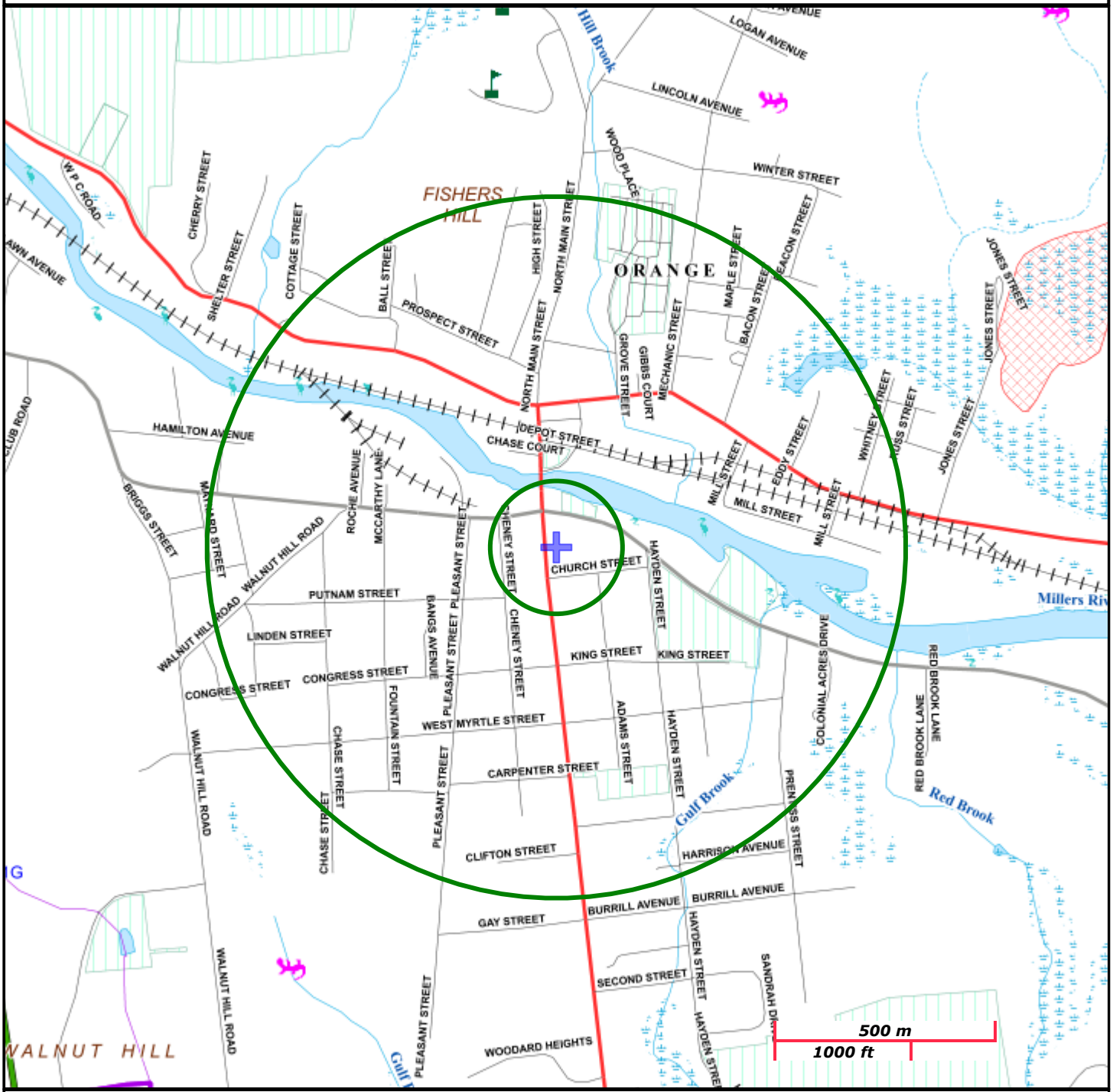
Phase 1 Site Assessment Map: 500 feet & 0.5 Mile Radii

Site Information:
24 EAST RIVER ST, ORANGE, MA
24 EAST RIVER ST ORANGE, MA
1-000021228

NAD83 UTM Meters:
4718557mN , 720794mE (Zone: 18)
December 17, 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

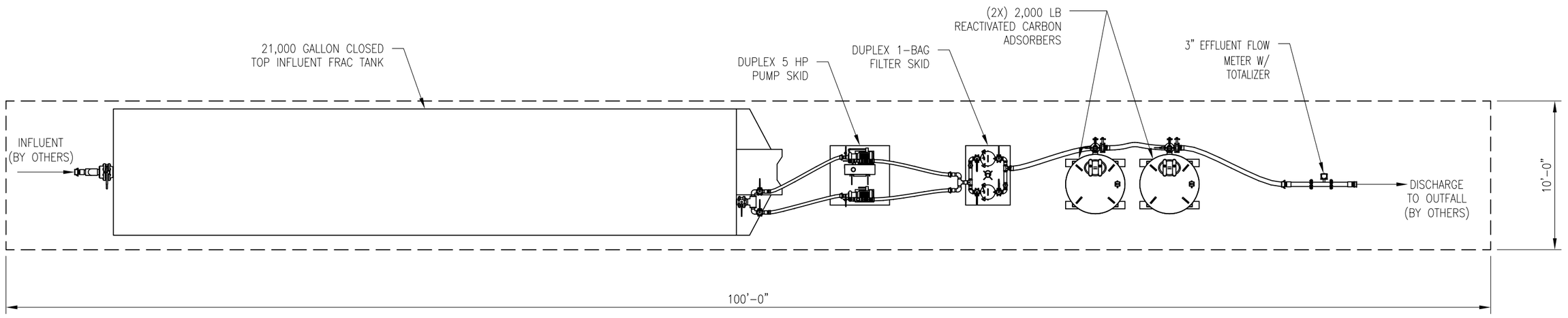
FEMA 100yr Floodplain; Protected Open Space; ACEC

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

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

TEMPORARY TREATMENT SYSTEM

OVERALL PLAN VIEW



NOTES:

1. DESIGN FLOW RATE: 100 GPM
2. SYSTEM FOOTPRINT APPROXIMATELY 10'x100'
3. NOT ALL VALVES, CONNECTIONS, ETC. SHOWN FOR CLARITY

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REV.	DATE	BY	REMARKS
-	12/10/20	SLM	PRELIMINARY DESIGN FOR REVIEW.

CUSTOMER: WILLIAMSON ENVIRONMENTAL, LLC

SITE: 24 EAST RIVER STREET, ORANGE, MA

TITLE: EQUIPMENT LAYOUT 100 GPM TEMPORARY TREATMENT SYSTEM

SCALE: NTS

	BY	DATE
DRAWN	SLM	12/10/20
APPROVALS		
MECH.		
I&C		
PROCESS		

GWTT Ground/Water Treatment & Technology, LLC
627 MOUNT HOPE ROAD WHARTON, NJ 07885
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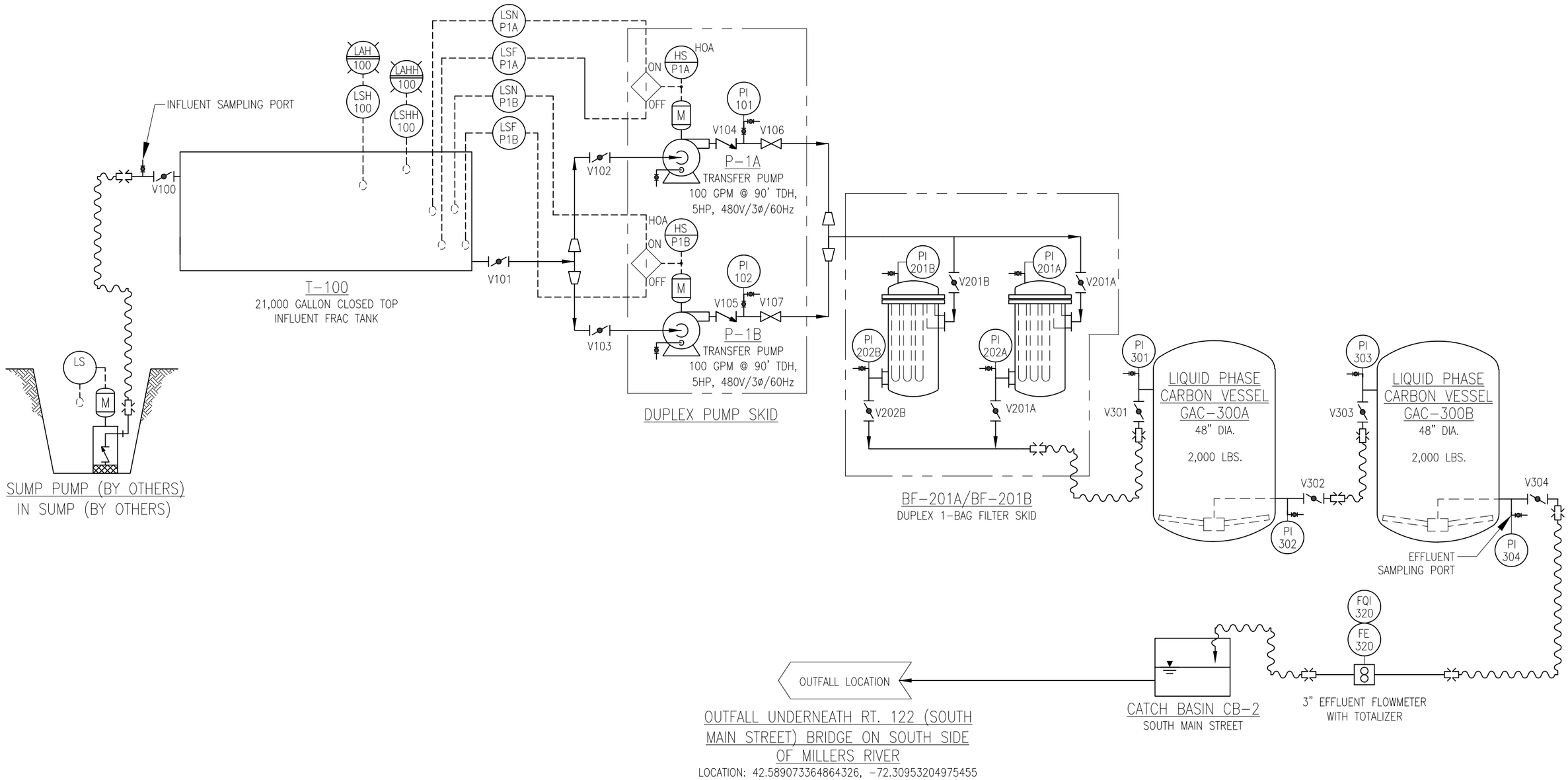
www.gwttllc.com

DWG SIZE: B | SHEET: 1 OF 1 | DRAWING NO.: P003738-M-120 | -



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REV.	DATE	BY	REMARKS	REV.	DATE	BY	REMARKS
-	12/10/20	SLM	PRELIMINARY DESIGN FOR REVIEW.				

CUSTOMER: WILLIAMSON ENVIRONMENTAL, LLC

SITE: 24 EAST RIVER STREET, ORANGE, MA

TITLE: PIPING & INSTRUMENT DIAGRAM
100 GPM TEMPORARY TREATMENT SYSTEM

SCALE: NTS

	BY	DATE
DRAWN	SLM	12/10/20
APPROVALS	BY	DATE
MECH.		
I&C		
PROCESS		

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DWG SIZE: B | SHEET: 1 OF 1 | DRAWING NO.: P003738-P-110 | -

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VALVE SYMBOLS

- KNIFE GATE
- GATE
- BALL
- GLOBE
- ORBIT
- PLUG
- 3-WAY PLUG
- BUTTERFLY
- CHECK
- STOP CHECK
- DIAPHRAGM
- PINCH
- NEEDLE
- 3-WAY
- 4-WAY
- ANGLE
- SLIDE GATE
- ROTARY
- WEIGHTED RELIEF
- ROOT VALVE (UNDEFINED TYPE)
- SOLENOID (S)
- AIR/VAC RELEASE (A/VR)

VALVE ACUATOR SYMBOLS

- (NO SYMBOL)= MANUAL FOR ON-OFF SERVICE
- HANDWHEEL (MANUAL OVERRIDE)
- RATE ADJUSTMENT (MANUAL)
- PRESSURE-SAFETY
- DIAPHRAGM AIR TO AIR — (WITHOUT) (WITH)= POSITIONER
- CYLINDER — (WITHOUT) (WITH)= POSITIONER
- ROTARY MOTOR (M)
- GEAR OPERATOR (G)
- ELECTRO-HYDRAULIC (E/H)
- SOLENOID (S) — (WITHOUT) (WITH)= MANUAL OVERRIDE
- DIAPHRAGM & SPRING — SPRING TO OPEN, SPRING TO CLOSE — (WITHOUT) (WITH)= POSITIONER
- CYLINDER & SPRING — SPRING TO OPEN, SPRING TO CLOSE

PIPING ACCESSORIES AND DETAILS

- Y TYPE STRAINER
- CONE STRAINER
- SCREEN STRAINER
- MEDIA TRAP (MT)
- FLAME ARRESTOR
- MIXING SECTION
- MIXING TEE
- EJECTOR
- BACKFLOW PREVENTOR
- SPRAY NOZZLE OR SPARGER
- CHEMICAL SEAL
- AIR FILTER
- PULSATION DAMPER
- FLOW SIGHT GLASS (SG)
- SPECTACLE BLIND
- FLANGE CONN.
- BLIND FLANGE
- (FLANGE CONN. / BLIND FLANGE:) SHOWN ONLY AT CUSTOMER OR SKID INTERFACE
- INSULATED FLANGE OR DIELECTRIC UNION (DU)
- CLAMP COUPLING (VICTAULIC STYLE)
- HOSE CONNECTION
- EXPANSION JOINT OR FLEXIBLE CONN.
- FLEXIBLE HOSE
- STRAIGHTENING VANES
- SILENCER (SIL)
- REGULATOR/FILTER/LUBRICATOR
- DAMPER
- SUMP/PIPE DRAIN (BY OTHERS)
- CALIBRATION COLUMN
- SIMPLEX STRAINER
- DUPLEX STRAINER

MOTOR DRIVEN EQUIPMENT
(SHOWN WITH ELECTRIC MOTOR DRIVE)

- CENTRIFUGAL PUMP
- ROTARY LOBE BLOWER, COMPRESSOR OR GEAR PUMP
- FAN
- VERTICAL CENTRIFUGAL PUMP
- VERTICAL TURBINE
- DIAPHRAGM CHEMICAL FEED PUMP- WITH INTERNAL RELIEF VALVE
- DIAPHRAGM CHEMICAL FEED PUMP- WITH INTERNAL RELIEF VALVE AND REMOTE CONTROLLED ADJUSTABLE FLOW RATE
- METERING PUMP
- DIAPHRAGM PUMP (PNEUMATIC OPERATION)
- DIAPHRAGM PUMP-TWIN STAGE (PNEUMATIC OPERATION)
- PROGRESSIVE CAVITY PUMP
- PERISTALTIC (HOSE) PUMP
- PISTON PUMP
- CAM PUMP
- AGITATOR, MIXER
- SUBMERSIBLE PUMP

INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER		SUCCEEDING LETTERS		
MEASURE OR INITIATING VARIABLE	MODIFIER (1)	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A = ANALYSIS (2)		ALARM		
B = BURNER, COMBUSTION		USER'S CHOICE (3)	USER'S CHOICE (3)	USER'S CHOICE (3)
C = CONDUCTIVITY (ELECTRICAL)			CONTROL	
D = DENSITY OR SP. GR.	DIFFERENTIAL			
E = VOLTAGE (EMF)		SENSOR (PRIMARY ELEMENT)		
F = FLOW RATE	RATIO (FRACTION)			
G = USER'S CHOICE (3)		GLASS OR VIEWING DEVICE		
H = HAND (MANUAL)				HIGH
I = CURRENT (ELECTRICAL)		INDICATE		
J = POWER	SCAN (5)			
K = TIME OR TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L = LEVEL		LIGHT		LOW
M = USER'S CHOICE (3)	MOMENTARY			MIDDLE OR INTERMEDIATE
N = USER'S CHOICE (3)		USER'S CHOICE (3)	USER'S CHOICE (3)	USER'S CHOICE (3)
O = USER'S CHOICE (3)		ORIFICE (RESTRICTION)		
P = PRESSURE OR VACUUM		TEST OR SAMPLE POINT		
Q = QUANTITY	INTEGRATE OR TOTALIZE			
R = RADIATION		RECORD OR PRINT		
S = SPEED OR FREQUENCY	SAFETY		SWITCH	
T = TEMPERATURE			TRANSMIT	
U = MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V = VIBRATION, MECH. ANALYSIS			VALVE, DAMPER OR LOUVER	
W = WEIGHT OR FORCE		WELL		
X = UNCLASSIFIED (4)	X AXIS	UNCLASSIFIED (4)	UNCLASSIFIED (4)	UNCLASSIFIED (4)
Y = EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z = POSITION OR DIMENSION	Z AXIS		DRIVE , ACTUATOR, ETC.	

(1) ANY FIRST LETTER COMBINED WITH MODIFIER REPRESENTS A NEW AND SEPARATE MEASURED VARIABLE. EXAMPLES: PD= DIFFERENTIAL PRESSURE, FQ= INTEGRATED OR TOTALIZED FLOW. EXCEPTION IS THE MODIFIER "J" FOR MULTIPOINT SCANNING.

(2) FOR ANALYSIS NOT IDENTIFIED BY A SPECIFIC LETTER IN THE TABLE, USE FIRST LETTER "A". NEAR THE INSTRUMENT SYMBOL, SPECIFY THE NATURE OF THE ANALYSIS. EXAMPLE: SILICA.

(3) MEANING OF A "USER CHOICE" LETTER SHALL BE CONSISTENT THROUGHOUT A PROJECT AND SHALL BE SPECIFIED IN THE DRAWING LEGEND.

(4) UNCLASSIFIED LETTER MAY HAVE A FEW DIFFERENT MEANINGS ON A PROJECT. THE MEANING SHALL BE SPECIFIED NEAR EACH INSTRUMENT SYMBOL USING THE UNCLASSIFIED LETTER.

(5) THE MODIFIER "SCAN" APPLIES TO MULTIPOINT PRINTING INSTRUMENTS, SUCH AS CJRS (MULTIPOINT CONDUCTIVITY RECORDER WITH ALARM SWITCHES).

SYMBOLS FOR VALVE ACTION IN EVENT OF ACTUATOR POWER FAILURE

- SYMBOL LOCATED BY VALVE – USED ONLY WHERE NECESSARY TO INCREASE UNDERSTANDING OF THE SYSTEM.
- FO = FAIL OPEN
- FL = FAIL LOCKED
- FC = FAIL CLOSED
- FI = FAIL INDETERMINATE
- F = USED WITH 3-WAY & 4-WAY VALVE- ARROWS SHOW PATHS OPEN TO FLOW ON POWER FAILURE.

PRIME MOVERS FOR MOTOR DRIVEN EQUIPMENT

- ELECTRIC MOTOR (M)
- STEAM TURBINE (T)
- PNEUMATIC ROTARY MOTOR

EQUIPMENT CONNECTIONS

- VESSEL CONNECTION
- MANWAY (MW SIZE)

HEATING/COOLING SYMBOLS

- SHELL & TUBE HEAT EXCHANGER
- ELECTRIC HEATING ELEMENT
- AIR CONDITIONING UNIT
- ELECTRIC HEATER
- AIR COOLED SAMPLE COOLER
- WATER COOLED SAMPLE COOLER
- DIRECT CONTACT JET MIXER

SELF-ACTUATED REGULATORS

- PRESSURE REDUCING REGULATOR — SELF CONTAINED, EXTERNAL TAP
- BACK PRESSURE REGULATOR — SELF CONTAINED, EXTERNAL TAP
- VACUUM RELIEF — ANGLE, STRAIGHT
- TEMPERATURE REGULATOR FILLED SYSTEM — WITH WELL
- DIFFERENTIAL PRESSURE REDUCING REGULATOR- SHOWN WITH INTERNAL AND EXTERNAL PRESSURE TAPS
- LEVEL REGULATOR, FLOAT OPERATED- MECHANICAL LINKAGE
- RUPTURE DISC OR SAFETY HEAD — PRESSURE RELIEF, VACUUM RELIEF
- TRAPS — CONTINUOUS DRAINER BALL FLOAT TYPE; WITH EQUALIZING CONNECTION (TANK)
- PRESSURE RELIEF — ANGLE, STRAIGHT

INSTRUMENT SYMBOLS

	CONTROL ROOM OR MAIN CONTROL PANEL		AUXILLARY LOCATION		
	PRIMARY CONTROL PANEL NORMALLY ACCESSIBLE TO OPERATOR	BEHIND PANEL INSTRUMENT OR NORMALLY INACCESSIBLE FUNCTION	AUXILIARY PANEL OR RACK NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY PANEL OR RACK NORMALLY INACCESSIBLE TO OPERATOR	FIELD MOUNTED
DISCRETE INSTRUMENTS					
SHARED DISPLAY, SHARED CONTROL					
COMPUTER FUNCTION (INCLUDING DISTRIB. CONTROL SYS.)					
PROGRAMMABLE LOGIC CONTROLLER FUNCTION					

(1) (2) (MAIN) (AUX.) SYMBOL FOR PANEL MOUNTED INSTRUMENTS MAY HAVE PANEL DESIGNATION, IF PROJECT HAS A NUMBER OF PANELS.

INSTRUMENT FOR MULTIPLE SERVICE OR MULTIPLE FUNCTIONS SHALL BE REPRESENTED BY TWO OR MORE TANGENT CIRCLES.

LIST OF RELAY FUNCTIONS

- I–O — ON – OFF (SNAP ACTION)
- Σ — ADD
- Δ — SUBTRACT
- AVG — AVERAGE
- % — ADJUSTABLE RATIO
- ± + – — BIAS
- 1:2 2:1 — FIXED RATIO (TYPICAL EXAMPLES)
- X — MULTIPLY
- ÷ — DIVISION
- √ — EXTRACT SQUARE ROOT
- ∫ — INTEGRATE
- x^N — RAISE TO POWER
- F(X) — GENERATE FUNCTION
- 1:1 — VOLUME BOOST
- > — HIGH SELECT
- < — LOW SELECT
- HIGH – LIMIT
- REV — REVERSE
- d/dt — DERIVATIVE
- A/D — ANALOG DIGITAL
- D/A — DIGITAL – ANALOG
- E/P I/P — CONVERT SIGNAL FORM (TYPICAL EXAMPLES)
  - A = ANALOG
  - E = VOLTAGE
  - F = FREQUENCY
  - H = HYDRAULIC
  - I = CURRENT
  - O = ELECTROMAGNETIC OR SONIC
  - P = PNEUMATIC
  - R = RESISTANCE (ELECTRICAL)

SYMBOLS FOR FLOW MEASUREMENT

- ORIFICE PLATE WITH FLANGE OR CORNER TAPS — FLOW TRANSMITTER (TYPICAL) (FT)
- ORIFICE PLATE WITH VENA CONTRACTA RADIUS OR PIPE TAPS
- WEIR (FT)
- TURBINE OR PROPELLER TYPE PRIMARY ELEMENT (FE)
- ORIFICE PLATE IN-QUICK-CHANGE FITTING — FLOW INDICATOR (TYPICAL) (FI)
- AVERAGING PITOT TUBE
- VARIABLE AREA FLOW INDICATOR (FI)
- POSITIVE DISPLACEMENT FLOW TOTALIZING METER (SHOWN WITH SWITCH) (FQIS)
- VENTURI TUBE FLOW TUBE FLOW NOZZLE — FLOW TRANSMITTER (TYPICAL) (FT)
- FLUME
- MAGNETIC FLOW METER (SHOWN CONNECTED TO TRANSMITTER) (M) (FT)
- OTHER FLOW SENSORS — SONIC, TARGET, VORTEX

GENERAL NOTES:

1. INSTRUMENTATION SYMBOLS AND IDENTIFICATION METHODS ON THIS DRAWING ARE OBTAINED FROM INSTRUMENT SOCIETY OF AMERICA STANDARD S5.1, PUBLISHED 1986. FOR EXAMPLES OF USE, AND DEFINITIONS OF TERMS, REFER TO I.S.A. S5.1.
2. PROCESS EQUIPMENT AND PIPING SYMBOLS ARE NOT OBTAINED FROM I.S.A. S5.1.
3. ALL PIPING SHOWN —·—·—·— AND EQUIPMENT SHOWN [×] ARE SUPPLIED BY OTHERS.

PIPING SYMBOLS AND ABBREVIATIONS

PIPING AND BOUNDARY SYMBOLS

- = MAIN PROCESS FLOW PATH
- = SECONDARY FLOW PATH
- = PIPING SUPPLIED BY OTHERS
- = ALL EQUIPMENT WITHIN BOUNDARIES TO BE SHOP ASSEMBLED

PIPE LINE NUMBERING (LOCATED AT PIPE LINE)

12"-INF-FDI1-104

- = NOMINAL PIPE SIZE
- = LINE SERVICE
- = MATERIAL SPECIFICATION
- = PIPE LINE NUMBER NUMBERED CONSECUTIVELY FROM 100

PIPE MATERIAL SPECIFICATIONS

- FDI1 = FLANGED CEMENT MORTAR LINED DUCTILE IRON
- BCS1 = BUTTWELD CARBON STEEL w/ BW FITTINGS
- BCS2 = BUTTWELD CARBON STEEL w/ CAST IRON FITTINGS
- BCS3 = BUTTWELD CARBON STEEL w/ BW FITTINGS, FUSION BONDED
- BCS4 = BUTTWELD CARBON STEEL w/ BW FITTINGS, CEMENT MORTAR LINED
- BSS1 = BUTTWELD STAINLESS STEEL – SCH. 10
- SSS1 = SOCKET WELD STAINLESS STEEL
- TSS4 = THREADED STAINLESS STEEL – SCH. 40
- CUL1 = COPPER (TYPE L)
- GCS1 = GALVANIZED THREADED CARBON STEEL – SCH. 40
- HOSE = FLEXIBLE HOSE
- TUBE = FLEXIBLE TUBING
- PETH = POLYETHYLENE
- TP40 = POLYVINYL CHLORIDE (PVC)-SCH. 40
- TP80 = POLYVINYL CHLORIDE (PVC)-SCH. 80
- CPVC4 = CHLORINATED POLYVINYL CHLORIDE (CPVC)-SCH. 40
- CPVC8 = CHLORINATED POLYVINYL CHLORIDE (CPVC)-SCH. 80

SERVICE DESIGNATION

- AWS = AIRWASH SUPPLY
- BWR = BACKWASH RETURN
- BWS = BACKWASH SUPPLY
- CMF = CHEMICAL FEED
- CAS = COMPRESSED AIR SUPPLY
- DCT = DECANT
- EFF = FINISHED WATER EFFLUENT
- IAS = INSTRUMENT AIR SUPPLY
- INF = RAW WATER INFLUENT
- SWS = SERVICE WATER SUPPLY
- RGN = REGENERANT
- RNS = RINSE
- SLG = SLUDGE
- VNT = VENT
- SPM = SPENT MEDIA
- FRM = FRESH MEDIA
- PTW = POTABLE WATER

LEVEL DETECTION

- LEVEL TRANSMITTER (LT)
- ULTRASONIC LEVEL TRANSMITTER (LT)

MISCELLANEOUS SYMBOLS

- PURGE OR FLUSHING DEVICE (P)
- RESET FOR LATCH – TYPE ACTUATOR (R)
- INTERLOCKING FUNCTIONS — GENERALIZED (I), SPECIFIC (AND) (OR)
- RELAY FUNCTION (TYPICAL EXAMPLE SHOWS SQUARE ROOT EXTRACTOR IN FLOW LOOP) (FY 16)
- PIPE INSULATION (FREEZE PROTECTION) — CLASS H
- PIPE INSULATION (UV PROTECTION) — CLASS B

INSTRUMENT CONNECTION SYMBOLS

(ALL LINES SHALL BE FINE IN RELATION TO PROCESS PIPING LINES)

- CONNECTION TO PROCESS
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- FILLED, CAPILLARY TUBING
- HYDRAULIC CONTROL
- RADIO LIGHT OR SOUND SIGNAL (WITHOUT WIRE OR TUBING)
- MECHANICAL LINKAGE
- INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)

REV.	DATE	BY	REMARKS
F	02/28/19	MSM	REV'D EXP. JNT. SYMBOL, ADDED INSULATION & KNIFE GATE SYMBOLS.
E	08/07/18	MSM	REVISED LINE DESIGNATIONS & PIPE MATERIAL SPECS.
D	05/06/16	MSM	ADDED SAMPLE VALVE, ELECTRIC HEATER AND AC UNIT SYMBOLS.
C	04/01/16	MSM	REV. SUBMERSIBLE PUMP SYSMBOL.
B	09/25/15	MSM	REV. DRAWING NO., ADDED FLAME ARRESTOR.
A	02/18/15	MSM	INITIAL ISSUE.

TITLE: PIPING AND INSTRUMENT DIAGRAM SYMBOL LEGEND SHEET

SCALE: NONE
DRAWN BY: MSM DATE: 02/18/15
APPROVED BY: DATE:

GWTT Ground/Water Treatment & Technology, LLC
627 MOUNT HOPE ROAD · WHARTON, NJ 07885
PHONE: 973-983-0901 · FAX: 973-983-0903
www.gwttllc.com

DRAWING NO. ST-000281-PID01 DWG SIZE: D SHEET 1 of TOTAL 1 REV F

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT C: ANALYTICAL DATA

- Table I – Source Water Analytical Summary – MW-101 (GW)
- Table II – Receiving Water Analytical Summary – Millers River
- Source Water & Receiving Water Laboratory Data

Table 1. Source Water Analytical

24 East River Rd, Orange, MA

Ground/Water Treatment & Technology, LLC

Analyte	Sample Date	Sample Location MW-101 µg/L	Effluent Limitations	
			TBEL	WQBEL
A. Inorganics				
Ammonia	11/25/2020	**95**	Report mg/L	-
Chloride	11/25/2020	**13,000**	Report µg/L	-
Total Residual Chlorine	11/25/2020	<50	0.2 mg/L	-
Total Suspended Solids	11/25/2020	**570,000**	30 mg/L	-
Antimony	11/25/2020	**2.2**	206 µg/L	-
Arsenic	11/25/2020	**57**	104 µg/L	-
Cadmium	11/25/2020	**30**	10.2 µg/L	-
Chromium III	11/25/2020	**120**	323 µg/L	-
Chromium VI	11/25/2020	<10	323 µg/L	-
Copper	11/25/2020	**10,000**	242 µg/L	**194.8 ug/L**
Iron	11/25/2020	**110,000**	5,000 µg/L	-
Lead	11/25/2020	**580**	160 µg/L	**0.43 ug/L**
Mercury	11/25/2020	<0.2	0.739 µg/L	-
Nickel	11/25/2020	**170**	1,450 µg/L	-
Selenium	11/25/2020	**4.4**	235.8 µg/L	-
Silver	11/25/2020	**2.2**	35.1 µg/L	-
Zinc	11/25/2020	**19,000**	420 µg/L	-
Cyanide	11/25/2020	<20	178 mg/L	-
C. Halogenated VOCs				
Carbon Tetrachloride	11/25/2020	<1	4.4 µg/L	-
1,2 Dichlorobenzene	11/25/2020	<1	600 µg/L	-
1,3 Dichlorobenzene	11/25/2020	<1	320 µg/L	-
1,4 Dichlorobenzene	11/25/2020	<1	5.0 µg/L	-
Total Dichlorobenzene	11/25/2020	<3	763 µg/L in NH	-
1,1 Dichloroethane	11/25/2020	<1	70 µg/L	-
1,2 Dichloroethane	11/25/2020	<1	5.0 µg/L	-
1,1 Dichloroethylene	11/25/2020	<0.5	3.2 µg/L	-
Ethylene Dibromide	11/25/2020	<0.02	0.05 µg/L	-
Methylene Chloride	11/25/2020	<1	4.6 µg/L	-
1,1,1 Trichloroethane	11/25/2020	<1	200 µg/L	-
1,1,2 Trichloroethane	11/25/2020	<1	5.0 µg/L	-
Trichloroethylene	11/25/2020	**6.4**	5.0 µg/L	-
Tetrachloroethylene	11/25/2020	<1	5.0 µg/L	-
cis-1,2 Dichloroethylene	11/25/2020	<1	70 µg/L	-
Vinyl Chloride	11/25/2020	<1	2.0 µg/L	-
D. Non-Halogenated SVOCs				
Total Group 1 PAHs	10/29/2020	<2	**1.0 µg/L**	-
Benzo(a)anthracene	10/29/2020	<2	**As Total Group I PAHs**	-
Benzo(a)pyrene	10/29/2020	<2		-
Benzo(b)fluoranthene	10/29/2020	<2		-
Benzo(k)fluoranthene	10/29/2020	<2		-
Chrysene	10/29/2020	<2		-
Dibenzo(a,h)anthracene	10/29/2020	<2		-
Indeno(1,2,3-cd)pyrene	10/29/2020	<2		-
Total Group II PAHs	10/29/2020	<2	**100 µg/L**	-
Acenaphthylene	10/29/2020	<2	**As Total Group II PAHs**	-
Acenaphthene	10/29/2020	<2		-
Fluorene	10/29/2020	<2		-
Phenanthrene	10/29/2020	<2		-
Anthracene	10/29/2020	<2		-
Fluoranthene	10/29/2020	<2		-
Pyrene	10/29/2020	<2		
Benzo[g,h,i]perylene	10/29/2020	<2		-
Naphthalene	10/29/2020	<2	**20 µg/L**	
F. Fuels Parameters				
TPH	11/25/2020	<5	**5.0 mg/L**	-
Ethanol	11/25/2020	<250	**Report mg/L**	-
Methyl-tert-Butyl Ether	11/25/2020	<0.5	**70 µg/L**	-
tert-Butyl Alcohol	11/25/2020	<30	**120 µg/L**	
tert-Amyl Methyl Ether	11/25/2020	<0.5	**90 µg/L**	-
G. Other				
Total Hardness (as CaCO3)	11/25/2020	**150,000**		-
pH	10/29/2020	**6.46 (SU)**		-

Table 2. Receiving Waters Analytical

24 East River Rd, Orange, MA

GWTT
Ground/Water Treatment & Technology, LLC

Analyte	Receiving Water 11/25/2020 Sample Result	Units
A. Inorganics		
Ammonia	<0.05	mg/L
Chloride	**37**	mg/L
Total Residual Chlorine	<0.05	mg/L
Total Suspended Solids	<5	mg/L
Antimony	<0.5	µg/L
Arsenic	<0.5	µg/L
Cadmium	<0.1	µg/L
Chromium III	<10	µg/L
Chromium VI	<10	µg/L
Copper	**1.5**	µg/L
Iron	**610**	µg/L
Lead	**0.78**	µg/L
Mercury	<0.0002	mg/L
Nickel	**0.67**	µg/L
Selenium	<0.5	µg/L
Silver	<0.5	µg/L
Zinc	**5.0**	µg/L
Cyanide	<0.005	mg/L
C. Halogenated VOC's		
Carbon Tetrachloride	<1	µg/L
1,2 Dichlorobenzene	<1	µg/L
1,3 Dichlorobenzene	<1	µg/L
1,4 Dichlorobenzene	<1	µg/L
Total Dichlorobenzene	<3	µg/L
1,1 Dichloroethane	<1	µg/L
1,2 Dichloroethane	<1	µg/L
1,1 Dichloroethylene	<0.5	µg/L
Ethylene Dibromide	<0.02	µg/L
Methylene Chloride	<1	µg/L
1,1,1 Trichloroethane	<1	µg/L
1,1,2 Trichloroethane	<1	µg/L
Trichloroethylene	<1	µg/L
Tetrachloroethylene	<1	µg/L
cis-1,2 Dichloroethylene	<1	µg/L
Vinyl Chloride	<1	µg/L
F. Fuels Parameters		
TPH	<5	µg/L
Ethanol	<250	µg/L
Methyl-tert-Butyl Ether	<0.5	µg/L
tert-Butyl Alcohol	<30	µg/L
tert-Amyl Methyl Ether	<0.5	µg/L
G. Other		
Total Hardness (as CaCO3)	**20**	mg/L

Eastern Analytical, Inc.

professional laboratory and drilling services

Thomas Williamson, Jr.
Williamson Environmental, LLC
2 Shaker Road Building A
Shirley , MA 01464

ACCREDITED IN ACCORDANCE WITH nelac

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 219313
Client Identification: 24 East River St. | Orange, MA
Date Received: 11/25/2020

Dear Mr. Williamson, Jr. :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.easternanalytical.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012) and New York (12072).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample (s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

12.14.20
Date

39
# of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Temperature upon receipt (°C): 9.6 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date/Time Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
219313.01	Receiving Water	11/25/20	11/25/20 10:00	aqueous		Adheres to Sample Acceptance Policy
219313.02	MW-101	11/25/20	11/25/20 11:00	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater, 20th, 21st, 22nd & 23rd Edition or noted Revision year.
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 4th edition, 1992

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	Receiving Water
Lab Sample ID:	219313.01
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
Vinyl chloride	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,1-Dichloroethene	< 0.5	0.5	1	ug/L	11/25/20	15:03	624.1	SG
Methylene chloride	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,1-Dichloroethane	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
cis-1,2-Dichloroethene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,1,1-Trichloroethane	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
Carbon tetrachloride	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,2-Dichloroethane	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
Trichloroethene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,1,2-Trichloroethane	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
Tetrachloroethene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,3-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,4-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
1,2-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:03	624.1	SG
Total Dichlorobenzenes	< 3	3	1	ug/L	11/25/20	15:03	624.1	SG
4-Bromofluorobenzene (surr)	**101 %R**			%	11/25/20	15:03	624.1	SG
1,2-Dichlorobenzene-d4 (surr)	**97 %R**			%	11/25/20	15:03	624.1	SG
Toluene-d8 (surr)	**97 %R**			%	11/25/20	15:03	624.1	SG

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	MW-101
Lab Sample ID:	219313.02
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
Vinyl chloride	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,1-Dichloroethene	< 0.5	0.5	1	ug/L	11/25/20	15:28	624.1	SG
Methylene chloride	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,1-Dichloroethane	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
cis-1,2-Dichloroethene	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,1,1-Trichloroethane	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
Carbon tetrachloride	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,2-Dichloroethane	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
Trichloroethene	**6.4**	1	1	ug/L	11/25/20	15:28	624.1	SG
1,1,2-Trichloroethane	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
Tetrachloroethene	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,3-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,4-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
1,2-Dichlorobenzene	< 1	1	1	ug/L	11/25/20	15:28	624.1	SG
Total Dichlorobenzenes	< 3	3	1	ug/L	11/25/20	15:28	624.1	SG
4-Bromofluorobenzene (surr)	**101 %R**			%	11/25/20	15:28	624.1	SG
1,2-Dichlorobenzene-d4 (surr)	**97 %R**			%	11/25/20	15:28	624.1	SG
Toluene-d8 (surr)	**97 %R**			%	11/25/20	15:28	624.1	SG

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637419-09714/A112520V6241

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Chloromethane	< 2	23 (115 %R)	23 (115 %R) (0 RPD)	11/25/2020	ug/L	1 - 205	60	624.1
Vinyl chloride	< 1	25 (124 %R)	25 (125 %R) (1 RPD)	11/25/2020	ug/L	5 - 195	66	624.1
Bromomethane	< 2	13 (63 %R)	15 (74 %R) (16 RPD)	11/25/2020	ug/L	15 - 185	61	624.1
Chloroethane	< 2	19 (97 %R)	20 (98 %R) (1 RPD)	11/25/2020	ug/L	40 - 160	78	624.1
Trichlorofluoromethane	< 2	20 (101 %R)	20 (101 %R) (0 RPD)	11/25/2020	ug/L	50 - 150	84	624.1
Acrolein	< 50	< 50 (91 %R)	< 50 (93 %R) (3 RPD)	11/25/2020	ug/L	60 - 140	60	624.1
Acetone	< 10	19 (95 %R)	20 (98 %R) (3 RPD)	11/25/2020	ug/L	40 - 160	20	624.1
1,1-Dichloroethene	< 0.5	20 (99 %R)	20 (99 %R) (0 RPD)	11/25/2020	ug/L	50 - 150	32	624.1
Methylene chloride	< 1	19 (96 %R)	19 (95 %R) (1 RPD)	11/25/2020	ug/L	60 - 140	28	624.1
Acrylonitrile	< 50	< 50 (98 %R)	< 50 (100 %R) (2 RPD)	11/25/2020	ug/L	60 - 140	60	624.1
Methyl-t-butyl ether(MTBE)	< 1	19 (97 %R)	19 (97 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	20	624.1
trans-1,2-Dichloroethene	< 1	20 (102 %R)	20 (101 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	45	624.1
Vinyl acetate	< 10	22 (110 %R)	22 (112 %R) (1 RPD)	11/25/2020	ug/L	40 - 160	20	624.1
1,1-Dichloroethane	< 1	20 (99 %R)	20 (99 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	40	624.1
cis-1,2-Dichloroethene	< 1	20 (98 %R)	20 (98 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	20	624.1
2-Butanone(MEK)	< 10	19 (97 %R)	20 (100 %R) (3 RPD)	11/25/2020	ug/L	40 - 160	20	624.1
Chloroform	< 1	20 (99 %R)	20 (98 %R) (1 RPD)	11/25/2020	ug/L	70 - 135	54	624.1
1,1,1-Trichloroethane	< 1	21 (105 %R)	21 (104 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	36	624.1
Carbon tetrachloride	< 1	21 (104 %R)	21 (103 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	41	624.1
Benzene	< 1	20 (99 %R)	20 (99 %R) (0 RPD)	11/25/2020	ug/L	65 - 135	61	624.1
1,2-Dichloroethane	< 1	19 (97 %R)	19 (97 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	49	624.1
Trichloroethene	< 1	20 (101 %R)	20 (101 %R) (0 RPD)	11/25/2020	ug/L	65 - 135	48	624.1
1,2-Dichloropropane	< 1	20 (98 %R)	20 (98 %R) (0 RPD)	11/25/2020	ug/L	35 - 165	55	624.1
Bromodichloromethane	< 0.5	21 (103 %R)	21 (103 %R) (1 RPD)	11/25/2020	ug/L	65 - 135	56	624.1
2-Chloroethylvinylether	< 2	21 (103 %R)	21 (104 %R) (0 RPD)	11/25/2020	ug/L	1 - 225	71	624.1
4-Methyl-2-pentanone(MIBK)	< 10	19 (97 %R)	20 (99 %R) (2 RPD)	11/25/2020	ug/L	40 - 160	20	624.1
cis-1,3-Dichloropropene	< 0.5	20 (101 %R)	20 (100 %R) (1 RPD)	11/25/2020	ug/L	25 - 175	58	624.1
Toluene	< 1	20 (98 %R)	20 (98 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	41	624.1
trans-1,3-Dichloropropene	< 0.5	21 (103 %R)	21 (103 %R) (0 RPD)	11/25/2020	ug/L	50 - 150	86	624.1
1,1,2-Trichloroethane	< 1	19 (95 %R)	19 (95 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	45	624.1
2-Hexanone	< 10	18 (92 %R)	19 (95 %R) (3 RPD)	11/25/2020	ug/L	40 - 160	20	624.1
Tetrachloroethene	< 1	20 (99 %R)	20 (100 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	39	624.1
Dibromochloromethane	< 1	20 (98 %R)	20 (98 %R) (0 RPD)	11/25/2020	ug/L	70 - 135	50	624.1
Chlorobenzene	< 1	20 (99 %R)	20 (99 %R) (0 RPD)	11/25/2020	ug/L	65 - 135	53	624.1
Ethylbenzene	< 1	20 (102 %R)	20 (102 %R) (0 RPD)	11/25/2020	ug/L	60 - 140	63	624.1
mp-Xylene	< 1	40 (101 %R)	40 (101 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	20	624.1
o-Xylene	< 1	20 (100 %R)	20 (101 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	20	624.1
Styrene	< 1	20 (101 %R)	20 (101 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	20	624.1
Bromoform	< 2	21 (104 %R)	21 (104 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	42	624.1
1,1,2,2-Tetrachloroethane	< 1	18 (89 %R)	18 (90 %R) (1 RPD)	11/25/2020	ug/L	60 - 140	61	624.1
1,3-Dichlorobenzene	< 1	20 (98 %R)	20 (98 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	43	624.1
1,4-Dichlorobenzene	< 1	19 (96 %R)	19 (97 %R) (0 RPD)	11/25/2020	ug/L	65 - 135	57	624.1
1,2-Dichlorobenzene	< 1	19 (96 %R)	19 (96 %R) (0 RPD)	11/25/2020	ug/L	65 - 135	57	624.1
4-Bromofluorobenzene (surr)	101 %R	101 %R	101 %R	11/25/2020	% Rec	70 - 130		624.1
1,2-Dichlorobenzene-d4 (surr)	97 %R	97 %R	97 %R	11/25/2020	% Rec	70 - 130		624.1
Toluene-d8 (surr)	97 %R	96 %R	98 %R	11/25/2020	% Rec	70 - 130		624.1

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637419-09714/A112520V6241

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/!Flagged analyte recoveries deviated from the QA/QC limits. Unless noted on the sample page, flagged analytes that exceed acceptance limits in the Quality Control sample do not impact the data.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Client Sample ID: Receiving Water

Lab Sample ID: 219313.01

Matrix: aqueous

Date Sampled: 11/25/20

Date Received: 11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed	Method	Analyst
tert-Butyl Alcohol (TBA)	< 30	30	1	ug/L	11/25/20 17:12	524.2	AM
Methyl-t-butyl ether(MTBE)	< 0.5	0.5	1	ug/L	11/25/20 17:12	524.2	AM
tert-amyl methyl ether(TAME)	< 0.5	0.5	1	ug/L	11/25/20 17:12	524.2	AM
4-Bromofluorobenzene (surr)	**99 %R**			%	11/25/20 17:12	524.2	AM
1,2-Dichlorobenzene-d4 (surr)	**97 %R**			%	11/25/20 17:12	524.2	AM

Client Sample ID: MW-101

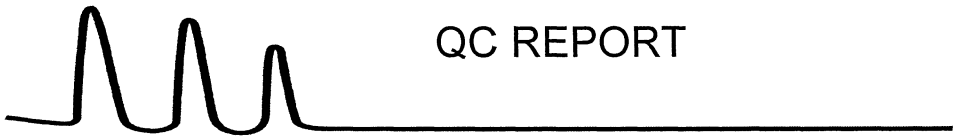
Lab Sample ID: 219313.02

Matrix: aqueous

Date Sampled: 11/25/20

Date Received: 11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed	Method	Analyst
tert-Butyl Alcohol (TBA)	< 30	30	1	ug/L	11/25/20 17:42	524.2	AM
Methyl-t-butyl ether(MTBE)	< 0.5	0.5	1	ug/L	11/25/20 17:42	524.2	AM
tert-amyl methyl ether(TAME)	< 0.5	0.5	1	ug/L	11/25/20 17:42	524.2	AM
4-Bromofluorobenzene (surr)	**99 %R**			%	11/25/20 17:42	524.2	AM
1,2-Dichlorobenzene-d4 (surr)	**97 %R**			%	11/25/20 17:42	524.2	AM



QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637418-89084/A112520V5241

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Dichlorodifluoromethane	< 0.5	13 (127 %R)	12 (119 %R) (7 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Chloromethane	< 0.5	13 (125 %R)	12 (120 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Vinyl chloride	< 0.5	11 (114 %R)	11 (113 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Bromomethane	< 0.5	12 (119 %R)	11 (109 %R) (9 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Chloroethane	< 0.5	11 (106 %R)	9.8 (98 %R) (8 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Trichlorofluoromethane	< 0.5	9.7 (97 %R)	9.2 (92 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Diethyl Ether	< 5	9.7 (97 %R)	9.1 (91 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Acetone	< 10	11 (105 %R)	< 10 (99 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1-Dichloroethene	< 0.5	9.7 (97 %R)	9.6 (96 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
tert-Butyl Alcohol (TBA)	< 30	49 (99 %R)	49 (98 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Methylene chloride	< 0.5	10 (103 %R)	8.8 (88 %R) (15 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Carbon disulfide	< 2	9.6 (96 %R)	9.2 (92 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Methyl-t-butyl ether(MTBE)	< 0.5	9.1 (91 %R)	9.6 (96 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Ethyl-t-butyl ether(ETBE)	< 0.5	9.5 (95 %R)	10 (103 %R) (8 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Isopropyl ether(DIPE)	< 0.5	9.3 (93 %R)	9.9 (99 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
tert-amyl methyl ether(TAME)	< 0.5	9.4 (94 %R)	9.8 (98 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
trans-1,2-Dichloroethene	< 0.5	9.9 (99 %R)	9.3 (93 %R) (7 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1-Dichloroethane	< 0.5	9.5 (95 %R)	8.7 (87 %R) (9 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
2,2-Dichloropropane	< 0.5	9.8 (98 %R)	9.2 (92 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
cis-1,2-Dichloroethene	< 0.5	9.4 (94 %R)	9.3 (93 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
2-Butanone(MEK)	< 5	10 (104 %R)	11 (106 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Bromochloromethane	< 0.5	10 (102 %R)	8.0 (80 %R) (24 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Tetrahydrofuran(THF)	< 5	10 (102 %R)	9 (90 %R) (12 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Chloroform	< 0.5	10 (100 %R)	8.7 (87 %R) (14 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1,1-Trichloroethane	< 0.5	9.4 (94 %R)	8.6 (86 %R) (9 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Carbon tetrachloride	< 0.5	9.5 (95 %R)	8.4 (84 %R) (12 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1-Dichloropropene	< 0.5	9.7 (97 %R)	9.9 (99 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Benzene	< 0.5	9.5 (95 %R)	10 (103 %R) (8 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2-Dichloroethane	< 0.5	9.9 (99 %R)	8.8 (88 %R) (12 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Trichloroethene	< 0.5	9.5 (95 %R)	9.7 (97 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2-Dichloropropane	< 0.5	9.7 (97 %R)	11 (112 %R) (14 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Dibromomethane	< 0.5	9.9 (99 %R)	9.9 (99 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Bromodichloromethane	< 0.5	9.9 (99 %R)	9.9 (99 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
4-Methyl-2-pentanone(MIBK)	< 5	9.2 (92 %R)	11 (115 %R) (22 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
cis-1,3-Dichloropropene	< 0.3	9.4 (94 %R)	10 (104 %R) (10 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Toluene	< 0.5	9.6 (96 %R)	11 (106 %R) (9 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
trans-1,3-Dichloropropene	< 0.3	10 (104 %R)	11 (112 %R) (7 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1,2-Trichloroethane	< 0.5	10 (102 %R)	11 (111 %R) (9 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
2-Hexanone	< 5	10 (102 %R)	12 (123 %R) (19 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Tetrachloroethene	< 0.5	9.1 (91 %R)	9.2 (92 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,3-Dichloropropane	< 0.5	9.8 (98 %R)	11 (110 %R) (12 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Dibromochloromethane	< 0.5	9.8 (98 %R)	9.9 (99 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2-Dibromoethane(EDB)	< 0.5	10 (100 %R)	9.6 (96 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Chlorobenzene	< 0.5	9.5 (95 %R)	9.1 (91 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1,1,2-Tetrachloroethane	< 0.5	9.3 (93 %R)	9.1 (91 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Ethylbenzene	< 0.5	9.4 (94 %R)	9.2 (92 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637418-89084/A112520V5241

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
mp-Xylene	< 0.5	19 (93 %R)	18 (89 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
o-Xylene	< 0.5	9.5 (95 %R)	9.0 (90 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Styrene	< 0.5	9.7 (97 %R)	9.4 (94 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Bromoform	< 0.5	9.9 (99 %R)	9.9 (99 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
IsoPropylbenzene	< 0.5	9.7 (97 %R)	9.3 (93 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Bromobenzene	< 0.5	9.3 (93 %R)	8.8 (88 %R) (6 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,1,2,2-Tetrachloroethane	< 0.5	10 (102 %R)	10 (101 %R) (1 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2,3-Trichloropropane	< 0.5	9.8 (98 %R)	9.4 (94 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
n-Propylbenzene	< 0.5	9.7 (97 %R)	9.3 (93 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
2-Chlorotoluene	< 0.5	9.4 (94 %R)	8.7 (87 %R) (7 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
4-Chlorotoluene	< 0.5	9.4 (94 %R)	8.6 (86 %R) (8 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,3,5-Trimethylbenzene	< 0.5	9.8 (98 %R)	9.4 (94 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
tert-Butylbenzene	< 0.5	9.3 (93 %R)	9.0 (90 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2,4-Trimethylbenzene	< 0.5	9.9 (99 %R)	9.6 (96 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
sec-Butylbenzene	< 0.5	9.9 (99 %R)	9.5 (95 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,3-Dichlorobenzene	< 0.5	9.3 (93 %R)	8.8 (88 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
p-Isopropyltoluene	< 0.5	9.7 (97 %R)	9.3 (93 %R) (4 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,4-Dichlorobenzene	< 0.5	9.0 (90 %R)	8.5 (85 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2-Dichlorobenzene	< 0.5	9.2 (92 %R)	8.8 (88 %R) (5 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
n-Butylbenzene	< 0.5	10 (101 %R)	9.8 (98 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2-Dibromo-3-chloropropane	< 0.5	9.6 (96 %R)	9.7 (97 %R) (0 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,3,5-Trichlorobenzene	< 0.5	9.3 (93 %R)	9.0 (90 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2,4-Trichlorobenzene	< 0.5	9.3 (93 %R)	9.1 (91 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Hexachlorobutadiene	< 0.5	8.6 (86 %R)	8.3 (83 %R) (3 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
Naphthalene	< 0.5	10 (101 %R)	9.9 (99 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
1,2,3-Trichlorobenzene	< 0.5	9.4 (94 %R)	9.2 (92 %R) (2 RPD)	11/25/2020	ug/L	70 - 130	30	524.2
4-Bromofluorobenzene (surr)	101 %R	103 %R	93 %R	11/25/2020	% Rec	70 - 130		524.2
1,2-Dichlorobenzene-d4 (surr)	97 %R	98 %R	89 %R	11/25/2020	% Rec	70 - 130		524.2

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/!Flagged analyte recoveries deviated from the QA/QC limits. Unless noted on the sample page, flagged analytes that exceed acceptance limits in the Quality Control sample do not impact the data.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	Receiving Water
Lab Sample ID:	219313.01
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
1,2-Dibromoethane(EDB)	< 0.02	0.02	1	ug/L	12/3/20	14:21	8011/504	AR
1,1,1,2-Tetrachloroethane (surr)	**96 %R**			%	12/3/20	14:21	8011/504	AR

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	MW-101
Lab Sample ID:	219313.02
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
1,2-Dibromoethane(EDB)	< 0.02	0.02	1	ug/L	12/3/20	14:36	8011/504	AR
1,1,1,2-Tetrachloroethane (surr)	**97 %R**			%	12/3/20	14:36	8011/504	AR

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637425-91539/A120320E5041

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
1,2-Dibromoethane(EDB)	< 0.02	0.10 (102 %R)	0.10 (102 %R) (0 RPD)	12/3/2020	ug/L	70 - 130	20	8011/504
Dibromochloropropane (DBCP)	< 0.02	0.090 (90 %R)	0.092 (92 %R) (1 RPD)	12/3/2020	ug/L	70 - 130	20	8011/504
1,1,1,2-Tetrachloroethane (surr)	91 %R	92 %R	92 %R	12/3/2020	% Rec	65 - 135	20	8011/504

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted on the sample page, flagged analytes that exceed acceptance limits in the Quality Control sample do not impact the data.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	Receiving Water
Lab Sample ID:	219313.01
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
TPH(SGTHEM)	< 5	5	1	mg/L	11/30/20	8:30	1664B	JLB

The TPH portion of the Method 1664B was not completed as the associated samples were already non-detect after the Oil & Grease portion was completed.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**
Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	MW-101
Lab Sample ID:	219313.02
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed		Method	Analyst
TPH(SGTHEM)	< 5	5	1	mg/L	11/30/20	8:30	1664B	JLB

The TPH portion of the Method 1664B was not completed as the associated samples were already non-detect after the Oil & Grease portion was completed.

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Batch ID: 637423-19224/A113020OG1661

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Oil & Grease (HEM)	< 5	36 (90 %R)	38 (96 %R) (6 RPD)	11/30/2020	mg/L	78 - 114	18	1664B

Oil & Grease 1664B batch QC provided in lieu of TPH 1664B Batch QC. The TPH portion of the Method 1664B was not completed as the associated samples were already non-detect after the Oil & Grease portion was completed.

Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted on the sample page, flagged analytes that exceed acceptance limits in the Quality Control sample do not impact the data.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Client Sample ID:	Receiving Water
Lab Sample ID:	219313.01
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed	Method	Analyst
Solids Suspended	< 5	5	1	mg/L	12/1/20 15:00	2540D-11	KJD
Chloride	**37**	1	1	mg/L	11/30/20 14:22	4500ClE-11	ATA
Cyanide Total	< 0.005	0.005	1	mg/L	12/4/20 10:01	OIA-1677-09	KD
Ammonia-N	< 0.05	0.05	1	mg/L	12/3/20 12:14	TM NH3-001	SEL
Total Residual Chlorine	< 0.05	0.05	1	mg/L	11/25/20 14:00	4500ClG-00	AMB

Client Sample ID:	MW-101
Lab Sample ID:	219313.02
Matrix:	aqueous
Date Sampled:	11/25/20
Date Received:	11/25/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed	Method	Analyst
Solids Suspended	**5700**	5	1	mg/L	12/1/20 15:00	2540D-11	KJD
Chloride	**13**	1	1	mg/L	11/30/20 14:23	4500ClE-11	ATA
Cyanide Total	< 0.02	0.02	4	mg/L	12/4/20 10:03	OIA-1677-09	KD
Ammonia-N	**0.095**	0.05	1	mg/L	12/3/20 12:17	TM NH3-001	SEL
Total Residual Chlorine	< 0.05	0.05	1	mg/L	11/25/20 14:00	4500ClG-00	AMB

MW-101: The reporting limit for Cyanide Total was elevated due to sample matrix.

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Solids Suspended	< 5	92 (95 %R)	97 (100 %R) (5 RPD)	mg/L	12/1/20	90 - 110	20	2540D-11
Chloride	< 1	25 (99 %R)	24 (96 %R) (3 RPD)	mg/L	11/30/20	90 - 110	20	4500ClE-11
Cyanide Total	< 0.005	0.11 (106 %R)	0.11 (108 %R) (2 RPD)	mg/L	12/4/20	82 - 132	20	OIA-1677-09
Ammonia-N	< 0.05	1.9 (96 %R)	1.9 (94 %R) (2 RPD)	mg/L	12/3/20	87 - 104	20	TM NH3-001
Total Residual Chlorine	< 0.05	0.05 (100 %R)	0.05 (100 %R) (0 RPD)	mg/L	11/25/20	80 - 120	20	4500ClG-00

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

LABORATORY REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Client Sample ID: Receiving Water

Lab Sample ID: 219313.01

Matrix: aqueous

Date Sampled: 11/25/20

Date Received: 11/25/20

Time Sampled:

	Result	RL	Dilution Factor	Analytical Matrix	Units	Date Analyzed	Time	Method	Analyst
Antimony	< 0.5	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Arsenic	< 0.5	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Cadmium	< 0.1	0.1	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Chromium	< 0.5	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Chromium (III)	< 10	10	1	AqTot	ug/L	11/30/20		200.8	DS
Copper	**1.5**	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Iron	**610**	50	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Lead	**0.78**	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Nickel	**0.67**	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Selenium	< 0.5	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Silver	< 0.5	0.5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Zinc	**5.0**	5	1	AqTot	ug/L	11/30/20	4:08	200.8	DS
Total Hardness (as CaCO3)	**20**	1	1	AqTot	mg/L	11/30/20	4:08	200.8	DS
Chromium (VI)	< 10	10	1	AqTot	ug/L	11/25/20	13:50	7196A	HEH

Client Sample ID: MW-101

Lab Sample ID: 219313.02

Matrix: aqueous

Date Sampled: 11/25/20

Date Received: 11/25/20

Time Sampled:

	Result	RL	Dilution Factor	Analytical Matrix	Units	Date Analyzed	Time	Method	Analyst
Antimony	**2.2**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Arsenic	**57**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Cadmium	**30**	0.1	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Chromium	**120**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Chromium (III)	**120**	10	1	AqTot	ug/L	11/30/20		200.8	DS
Copper	**10000**	5	10	AqTot	ug/L	11/30/20	4:13	200.8	DS
Iron	**110000**	50	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Lead	**580**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Nickel	**170**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Selenium	**4.4**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Silver	**2.2**	0.5	1	AqTot	ug/L	11/30/20	4:17	200.8	DS
Zinc	**19000**	5	10	AqTot	ug/L	11/30/20	4:13	200.8	DS
Total Hardness (as CaCO3)	**150**	1	1	AqTot	mg/L	11/30/20	4:17	200.8	DS
Chromium (VI)	< 10	10	1	AqTot	ug/L	11/25/20	13:50	7196A	HEH

QC REPORT

EAI ID#: **219313**

Client: **Williamson Environmental, LLC**

Client Designation: **24 East River St. | Orange, MA**

Parameter Name	Blank	LCS	LCSD		Units	Date of Analysis	Limits	RPD	Method
Antimony	< 0.0005	1.1 (111 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Arsenic	< 0.0005	1.1 (107 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Cadmium	< 0.0001	1.0 (105 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Chromium	< 0.0005	1.0 (105 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Copper	< 0.0005	1.0 (101 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Iron	< 0.05	11 (101 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Lead	< 0.0005	1.0 (103 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Nickel	< 0.0005	1.0 (102 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Selenium	< 0.0005	1.1 (107 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Silver	< 0.0005	0.010 (97 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Zinc	< 0.0005	1.1 (105 %R)		NA	mg/L	11/30/20	85 - 115	20	200.8
Chromium (VI)	< 0.01	0.34 (97 %R)		NA	mg/L	11/25/20	85 - 115	20	7196A

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

December 11, 2020

Alison Blay
Eastern Analytical
25 Chenell Dr.
Concord, NH 03301

RE: Project: 219313 11/25
Pace Project No.: 70155172

Dear Alison Blay:

Enclosed are the analytical results for sample(s) received by the laboratory on December 02, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

REVISION#1:12/11/20 Report revised to only report ethanol only

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kimberley Mack

Kimberley M. Mack
kimberley.mack@pacelabs.com
(631)694-3040
Project Manager

Enclosures

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

CERTIFICATIONS

Project: 219313 11/25
Pace Project No.: 70155172

Pace Analytical Services Long Island
575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 219313 11/25
Pace Project No.: 70155172

Sample: RECEIVING WATER **Lab ID: 70155172001** Collected: 11/25/20 10:00 Received: 12/02/20 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Ethanol	**<250**	ug/L	250	1		12/10/20 19:24	64-17-5	H1
Surrogates								
1,2-Dichloroethane-d4 (S)	106	%	68-153	1		12/10/20 19:24	17060-07-0	
4-Bromofluorobenzene (S)	100	%	79-124	1		12/10/20 19:24	460-00-4	
Toluene-d8 (S)	102	%	69-124	1		12/10/20 19:24	2037-26-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: 219313 11/25
Pace Project No.: 70155172

Sample: MW-101 **Lab ID: 70155172002** Collected: 11/25/20 11:00 Received: 12/02/20 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Ethanol	**<250**	ug/L	250	1		12/10/20 19:45	64-17-5	H1
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	68-153	1		12/10/20 19:45	17060-07-0	
4-Bromofluorobenzene (S)	100	%	79-124	1		12/10/20 19:45	460-00-4	
Toluene-d8 (S)	102	%	69-124	1		12/10/20 19:45	2037-26-5	

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575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: 219313 11/25
Pace Project No.: 70155172

QC Batch: 189056
QC Batch Method: EPA 8260C/5030C
Analysis Method: EPA 8260C/5030C
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70155172001, 70155172002

METHOD BLANK: 927610 Matrix: Water
Associated Lab Samples: 70155172001, 70155172002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethanol	ug/L	<250	250	12/10/20 11:57	
1,2-Dichloroethane-d4 (S)	%	103	68-153	12/10/20 11:57	
4-Bromofluorobenzene (S)	%	98	79-124	12/10/20 11:57	
Toluene-d8 (S)	%	100	69-124	12/10/20 11:57	

LABORATORY CONTROL SAMPLE: 927611

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Ethanol	ug/L	1250	1210	97	10-151	
1,2-Dichloroethane-d4 (S)	%			102	68-153	
4-Bromofluorobenzene (S)	%			100	79-124	
Toluene-d8 (S)	%			100	69-124	

SAMPLE DUPLICATE: 928491

Parameter	Units	30396441001 Result	Dup Result	RPD	Qualifiers
Ethanol	ug/L	ND	<250		
1,2-Dichloroethane-d4 (S)	%	106	105		
4-Bromofluorobenzene (S)	%	101	99		
Toluene-d8 (S)	%	102	100		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
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Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALIFIERS

Project: 219313 11/25
Pace Project No.: 70155172

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H1 Analysis conducted outside the EPA method holding time.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 219313 11/25
Pace Project No.: 70155172

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70155172001	**RECEIVING WATER**	EPA 8260C/5030C	189056		
70155172002	**MW-101**	EPA 8260C/5030C	189056		

CHAIN-OF-CUSTODY RECORD

Eastern Analytical, Inc.
professional laboratory and drilling services

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EAI ID# 219313 Page 1

Sample ID	Date Sampled	Matrix	aParameters	Sample Notes
Receiving Water	11/25/2020 10:00	aqueous	Subcontract - EPA Method 1666 - Ethanol Only	
MW-101	11/25/2020 11:00	aqueous	Subcontract - EPA Method 1666 - Ethanol Only	

WO# : 70155172

70155172

EAI ID# 219313 **Project State: MA**

Project ID:

Company PACE ANALYTICAL
Address 575 BROAD HOLLOW ROAD
Address MELVILLE, NY 11747
Account #
Phone # (631)694-3040

Results Needed: Preferred Date: Standard

RUSH Due Date: _____

QC Deliverables

☐ A ☐ A+ ☐ B ☐ B+ ☐ C ☒ MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

RGP

Ethanol Only by Method 1666

T=3.3

PO #:53861 **EAI ID# 219313**

Data Deliverable (circle)

Excel **NH EMD** **EQuIS** **ME EGAD**

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by: _____

Relinquished by	Date/Time	Received by
	12/1/20 1500	UPS
UPS	12/2/20 10:00	

Relinquished by	Date/Time	Received by

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 customerservice@easternanalytical.com

Pace Analytical®

Sample Condition Upon Receipt

WO#: 70155172

PM: KMM **Due Date: 12/09/20**

CLIENT: EASTA

Client Name: Eastern Proje

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #: 1Z X46 599 01 9694 8686

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals Intact: ☐ Yes ☑ No

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ Ziploc ☐ None ☐ Other

Thermometer Used: (1H09) Correction Factor:

Cooler Temperature [°C]: 3.3 Cooler Temperature Corrected [°C]: 3.1

Temp should be above freezing to 6.0°C

USDA Regulated Soil (☐ N/A, water sample)

Temperature Blank Present: ☐ Yes ☑ No

Type of Ice: (Wet) Blue None

☐ Samples on ice, cooling process has begun

Date/Time 5035A kits placed in freezer

Date and Initials of person examining contents: 12/2/2020 JP

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ Yes ☐ No

Did samples orignate from a foreign source including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-LI-C-010) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present:	☑ Yes	☐ No		1.
Chain of Custody Filled Out:	☑ Yes	☐ No		2.
Chain of Custody Relinquished:	☑ Yes	☐ No		3.
Sampler Name & Signature on COC:	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time:	☑ Yes	☐ No		5.
Short Hold Time Analysis (<72hr):	☐ Yes	☑ No		6.
Rush Turn Around Time Requested:	☐ Yes	☑ No		7.
Sufficient Volume: (Triple volume provided for	☑ Yes	☐ No		8.
Correct Containers Used:	☑ Yes	☐ No		9.
-Pace Containers Used:	☑ Yes	☐ No		
Containers Intact:	☑ Yes	☐ No		10.
Filtered volume received for Dissolved tests	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels match COC:	☑ Yes	☐ No		12.
-Includes date/time/ID, Matrix: SL WT OIL				
All containers needing preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl
pH paper Lot #				
All containers needing preservation are found to be in compliance with method recommendation?				Sample #
(HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide)	☐ Yes	☐ No	☐ N/A	
Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water)				Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Per Method, VOA pH is checked after analysis				
Samples checked for dechlorination:	☐ Yes	☐ No	☑ N/A	14.
KI starch test strips Lot #				
Residual chlorine strips Lot #				Positive for Res. Chlorine? Y N
SM 4500 CN samples checked for sulfide?	☐ Yes	☑ No	☐ N/A	15.
Lead Acetate Strips Lot #				
Headspace in VOA Vials (>6mm):	☐ Yes	☑ No	☐ N/A	16.
Trip Blank Present:	☐ Yes	☑ No	☐ N/A	17.
Trip Blank Custody Seals Present	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if applicable):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

* PM (Project Manager) review is documented electronically in LIMS.

PHOENIX
Environmental Laboratories, Inc.

Monday, December 07, 2020

Attn: Front Office
Eastern Analytical
25 Chenell Drive
Concord, NH 03301

Project ID: 219313
SDG ID: GCH23012
Sample ID#s: CH23012 - CH23013

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200. The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Sincerely yours,

Phyllis Shiller

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
UT Lab Registration #CT00007
VT Lab Registration #VT11301

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

SDG Comments

December 07, 2020

SDG I.D.: GCH23012

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Sample Id Cross Reference

December 07, 2020

SDG I.D.: GCH23012

Project ID: 219313

Client Id	Lab Id	Matrix
RECEIVING WATER	CH23012	WATER
MW-101	CH23013	WATER

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

December 07, 2020

FOR: Attn: Front Office
Eastern Analytical
25 Chenell Drive
Concord, NH 03301

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		11/25/20	10:00
Location Code:	EASTANAL	Received by:	LB	12/02/20	11:08
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	53862				

Laboratory Data

SDG ID: GCH23012
Phoenix ID: CH23012

Project ID: 219313
Client ID: RECEIVING WATER

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Mercury	< 0.0002	0.0002	mg/L	1	12/03/20	RS	SW7470/E245.1
Mercury Digestion	Completed				12/03/20	VT/ARW	SW7470/245.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
December 07, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

December 07, 2020

FOR: Attn: Front Office
Eastern Analytical
25 Chenell Drive
Concord, NH 03301

Sample Information		Custody Information		Date	Time
Matrix:	WATER	Collected by:		11/25/20	11:00
Location Code:	EASTANAL	Received by:	LB	12/02/20	11:08
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	53862				

Laboratory Data

SDG ID: GCH23012
Phoenix ID: CH23013

Project ID: 219313
Client ID: MW-101

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	By	Reference
Mercury	< 0.0002	0.0002	mg/L	1	12/03/20	RS	SW7470/E245.1
Mercury Digestion	Completed				12/03/20	VT/ARW	SW7470/245.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If you are the client above and have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext.200.
The contents of this report cannot be discussed with anyone other than the client listed above without their written consent.

Phyllis Shiller, Laboratory Director
December 07, 2020
Reviewed and Released by: Rashmi Makol, Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

December 07, 2020

QA/QC Data

SDG I.D.: GCH23012

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 555242 (mg/L), QC Sample No: CH22959 (CH23012, CH23013)													
Mercury - Water	BRL	0.0002	<0.0002	<0.0002	NC	111			108			75 - 125	30

Comment:

Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
December 07, 2020

Monday, December 07, 2020

Sample Criteria Exceedances Report

GCH23012 - EASTANAL

Criteria: MA: CAM

State: MA

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units

*** No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

MassDEP Analytical Protocol Certification Form

Laboratory Name: Phoenix Environmental Laboratories, Inc. **Project #:**

Project Location: 219313 **RTN:**

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

CH23012, CH23013

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

CAM Protocol (check all that apply below)

8260 VOC CAM II A ☐	7470/7471 Hg CAM III B ☑	MassDEP VPH CAM IV A ☐	8081 Pesticides CAM V B ☐	7196 Hex Cr CAM VI B ☐	MassDEP APH CAM IX A ☐
8270 SVOC CAM II B ☐	7010 Metals CAM III C ☐	MassDEP EPH CAM IV B ☐	8151 Herbicides CAM V C ☐	8330 Explosives CAM VIII A ☐	TO-15 VOC CAM IX B ☐
6010 Metals CAM III A ☐	6020 Metals CAM III D ☐	8082 PCB CAM V A ☐	9012 Total Cyanide/PAC CAM V1 A ☐	6860 Perchlorate CAM VIII B ☐	

Affirmative responses to questions A through F are required for "Presumptive Certainty" status

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

Responses to questions G, H and I below is required for "Presumptive Certainty" status

G	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	☑ Yes ☐ No

Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056(2)(k) and WSC-07-350

H	Were all QC performance standards specified in the CAM protocol(s) achieved?	☑ Yes ☐ No
I	Were results reported for the complete analyte list specified in the selected CAM protocol(s)?	☑ Yes ☐ No

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

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

Authorized Signature: Rashmi Makol

Date: Monday, December 07, 2020

Printed Name: Rashmi Makol

Position: Project Manager

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY #11301

MCP Certification Report

December 07, 2020

SDG I.D.: GCH23012

SDG Comments

Phoenix reporting levels may exceed those referenced in the CAM protocol. Please refer to criteria sheet for comparisons to requested MCP standards.

Mercury Narration

Were all QA/QC performance criteria specified in the analytical method achieved? Yes.

Instrument:

MERLIN 12/03/20 07:49 Rick Schweitzer, Chemist 12/03/20

CH23012, CH23013

The method preparation blank, ICB, and CCBs contain all of the acids and reagents as the samples.
The initial calibration met all criteria including a standard run at or below the reporting level.
All calibration verification standards (ICV, CCV) met criteria.
All calibration blank verification standards (ICB, CCB) met criteria.
The matrix spike sample is used to identify spectral interference for each batch of samples, if within 85-115%, no interference is observed and no further action is taken.
The following Initial Calibration Verification (ICV) compounds did not meet criteria: None.
The following Continuing Calibration Verification (CCV) compounds did not meet criteria: None.

QC (Batch Specific):

Batch 555242 (CH22959)

CH23012, CH23013

All LCS recoveries were within 75 - 125 with the following exceptions: None.
Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 75-125%

CHAIN-OF-CUSTODY RECORD

WCIQ 1.0

Eastern Analytical, Inc.
professional laboratory and drilling services

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EAI ID# 219313 Page 1

Sample ID	Date Sampled	Matrix	aParameters	Sample Notes
Receiving Water	11/25/2020 10:00	aqueous	Subcontract - Mercury Cold Vapor (PEL)	23012
MW-101	11/25/2020 11:00	aqueous	Subcontract - Mercury Cold Vapor (PEL)	23013

EAI ID# 219313 **Project State: MA**

Project ID:

Company Phoenix Environmental Labs
Address 587 East Middle Turnpike
Address Manchester , CT 06040
Account #
Phone # (860) 645-1102

Results Needed: **Preferred Date: Standard**

RUSH Due Date: _____

QC Deliverables

☐ A ☐ A+ ☐ B ☐ B+ ☐ C ☒ MA MCP

Notes about project:

Email login confirmation, pdf of results and invoice to customerservice@easternanalytical.com.

RGP Permit
Hg RL = 0.2 µg/L

PO #:53862 **EAI ID# 219313**

Data Deliverable (circle)

Excel **NH EMD** **EQuIS** **ME EGAD**

Call prior to analyzing, if RUSH charges will be applied.

Samples Collected by: _____

Relinquished by	Date/Time	Received by
	12/1/20 1800	UPS
UPS		
Relinquished by	**Date/Time**	**Received by**
	12-2-20 1108	

CHAIN-OF-CUSTODY RECORD

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

For l

219313

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SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 / 524.2 BTEX / 524.2 MTBE ONLY	VOC: 8260 / 624 / VTICs / 1,4 DIOXANE	VOC: 8021 BTEX HALOS	VOC: 8015 GRO MAVPH	SVOC: 8270 625 SVTICs EDB DBCP / ABN A BN PAH	SVOC: TPH8100 L1 L2	SVOC: 8015 DRO MAEPH	SVOC: PEST 608 PCB 608 / PEST 8081 PCB 8082	SVOC: OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS / VOC PEST HERB	METALS: DISSOLVED METALS (LIST BELOW)	METALS: TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.	INORGANICS: BR CL F SO_4 / NO_2 NO_3 NO_3NO_2	INORGANICS: BOD CBOD T. ALK.	INORGANICS: TKN NH_3 T. PHOS. O. PHOS.	INORGANICS: PH T. RES. CHLORINE	INORGANICS: COD PHENOLS TOC DOC	INORGANICS: TOTAL CYANIDE TOTAL SULFIDE	INORGANICS: REACTIVE CYANIDE REACTIVE SULFIDE / FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI / FECAL COLIFORM	MICRO: ENTEROCOCCI / HETEROTROPHIC PLATE COUNT	OTHER: SEE ATTACHED RGP PARAMETERS	OTHER		# OF CONTAINERS	NOTES MeOH VIAL #
RECEIVING WATER	11/25/20 10:00 AM	SW	G																							✓				
MW-101	11/25/20 11:00 AM	GW	G																							✓				

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: TOM WILLIAMSON

COMPANY: WILLIAMSON ENVIRONMENTAL LLC

ADDRESS: 2 SHAKER RD SUITE B224

CITY: SHIRLEY STATE: MA ZIP: 01464

PHONE: 978-425-6600 EXT.:

FAX: —

E-MAIL: LABDATA@WILLIAMSONENV.COM

SITE NAME: 24 EAST RIVER ST.

PROJECT #: ORANGE, MA

STATE: NH (MA circled) ME VT OTHER:

REGULATORY PROGRAM: NPDES: (RGP circled) POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: PO #:

DATE NEEDED: NORMAL TAT

TEMP. 9.6 °C ICE? (YES circled) NO

QA/QC REPORTING LEVEL A B C OR (MCP circled) MA MCP

REPORTING OPTIONS PRELIMS: YES OR NO

ELECTRONIC OPTIONS (E-MAIL circled) (PDF circled) EQUIS EXCEL

SAMPLER(S): PM

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Paul Mnd	11/25/20	1:07 pm	[signature]

METALS: 8 RCRA 13 PP FE, MN PB, CU

OTHER METALS:

SAMPLES FIELD FILTERED? ☐ YES ☐ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

BILL TO:
EAST RIVER ORANGE LLC
280 AYER RD
HARVARD, MA

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Eastern Analytical, Inc. *professional laboratory and drilling services*

25 CHENELL DRIVE | CONCORD, NH 03301 | TEL: 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Eastern Analytical, Inc.

219313

Bottle Order # 9809

Questions with your bottle order? call 800-287-0525

Attention: Paul McNeil

Customer: Williamson Environmental, LLC

Address: 2 Shaker Road Building A

City: Shirley MA 01464

Cyanide - Method OIA-1677 (5 µg/L)
624 - See analyte/RL list
524 - See analyte/RL list
504 - EDB only

Delivery Date: 11/24/2020

Shipped by: Customer pick up

Prepared by: JenniferL

Cooler ID _____ **Quote No.** _____ **EAI Project ID** _____

Client ID: RGP Analysis ~~NH~~ MA

Qty.	IDs	Parameters	Container/Preservation
2	Dewatering Location, Discharge Water	AqTot / Volatiles by 624	4 - 40ml VOC Vials Cool and return to lab ASAP - Short Hold Time
2	Dewatering Location, Discharge Water	AqTot / Solids Suspended / Chloride	16 oz Plastic Bottle Unpreserved - **Return to lab ASAP** - 7 day Hold Time
2	Dewatering Location, Discharge Water	AqTot / Metals by ICP / Subcontract - Mercury Cold Vapor	2 - 4 oz Plastic Bottle Nitric Acid CAUTION Do not spill
2	Dewatering Location, Discharge Water	AqTot / Ammonia	4 oz Plastic Bottle Sulfuric Acid CAUTION Do not spill
2	Dewatering Location, Discharge Water	AqTot / Chromium (III) / Chromium (VI)	16 oz Plastic Bottle Unpreserved - Cool and **return to lab ASAP** - immediate analysis
2	Dewatering Location, Discharge Water	AqTot / Subcontract - EPA Method 1666 (Ethanol Only) / Volatiles by 524.2	6 - VOA Vials (40 mL) Hydrochloric Acid CAUTION Do not Spill - Collect in Duplicate - No bubbles
2	Dewatering Location, Discharge Water	AqTot / Total Residual Chlorine	VOA Vials (40 mL) Unpreserved - Collect with no bubbles, Cool and **return to lab ASAP** - immediate analysis
2	Dewatering Location, Discharge Water	AqTot / TPH 1664	1 L. Amber **Glass** Bottle Sulfuric Acid CAUTION Do not spill
2	Dewatering Location, Discharge Water	AqTot / Total Cyanide	8 oz. (250 ml) Amber **Glass** Sodium Hydroxide CAUTION Do not spill
2	Dewatering Location, Discharge Water	AqTot / E504 EDB	2 - 40 ml VOC Vials Sodium Thiosulfate, Collect in Duplicate - No bubbles

**** EAI recommends that trip blanks are removed from use and properly disposed if more than ninety (90) days has passed since date of trip blank preparation. In addition, please return or dispose of any unused 40mL VOC vials if more than six (6) months has passed since originally supplied by EAI. 20mL VOC vials, prepreserved with methanol, should be returned or disposed if the expiration date has been exceeded; all vials have a date of expiration on them! Your attention to these matters is greatly appreciated.****

EMPBOPrep 153 JLL **TempBlankIncluded** ● Y ○ N

DOScheduleCourier ○ Y ● N

PUScheduleCourier ○ Y ● N

LABORATORY REPORT

EAI ID#: **217926**

Client: **Williamson Environmental, LLC**

Client Designation: **ERO, MA | Orange, 24**

Client Sample ID:	MW-101
Lab Sample ID:	217926.08
Matrix:	aqueous
Date Sampled:	10/29/20
Date Received:	10/30/20
Date Prepared:	11/4/20

	Result	RL	Dilution Factor	Units	Date Analyzed	Method	Analyst
Naphthalene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
2-Methylnaphthalene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Acenaphthylene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Acenaphthene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Fluorene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Phenanthrene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Anthracene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Fluoranthene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Pyrene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Benzo[a]anthracene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Chrysene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Benzo[b]fluoranthene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Benzo[k]fluoranthene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Benzo[a]pyrene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Indeno[1,2,3-cd]pyrene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Dibenz[a,h]anthracene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
Benzo[g,h,i]perylene	< 2	2	1	ug/L	11/4/20	MA EPH	AR
C9-C18 Aliphatic Hydrocarbons	< 100	100	1	ug/L	11/4/20	MA EPH	AR
C19-C36 Aliphatic Hydrocarbons	< 100	100	1	ug/L	11/4/20	MA EPH	AR
C11-C22 Aromatic Hydrocarbons	< 100	100	1	ug/L	11/4/20	MA EPH	AR
C11-C22 Aromatic (Unadjusted)	< 100	100	1	ug/L	11/4/20	MA EPH	AR
1-Chlorooctadecane (surr)	**52 %R**			%	11/4/20	MA EPH	AR
o-Terphenyl (surr)	**76 %R**			%	11/4/20	MA EPH	AR
2-Fluorobiphenyl (surr)	**83 %R**			%	11/4/20	MA EPH	AR
2-Bromonaphthalene (surr)	**82 %R**			%	11/4/20	MA EPH	AR

EPH Surrogate Acceptance Range: 40-140%
Hydrocarbon range data exclude concentrations of any surrogate(s) and internal standards eluting in that range.
C11-C22 Aromatic Hydrocarbons exclude the concentration of Target PAH analytes.
Solid samples prepared in accordance with EPA Method 3545A.
Aqueous samples prepared in accordance with EPA Method 3510C.
Percent (%) breakthrough of Naphthalene and 2-Methylnaphthalene is ≤ 5% unless noted.

QC REPORT

EAI ID#: **217926**

Client: **Williamson Environmental, LLC**

Batch ID: 63740072386/A110420MAEPH1

Client Designation: **ERO, MA | Orange, 24**

Parameter Name	Blank	LCS	LCSD	Analysis Date	Units	Limits	RPD	Method
Naphthalene	< 2	27 (67 %R)	26 (66 %R) (2 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
2-Methylnaphthalene	< 2	28 (69 %R)	27 (67 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Acenaphthylene	< 2	32 (79 %R)	31 (77 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Acenaphthene	< 2	31 (77 %R)	31 (78 %R) (1 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Fluorene	< 2	31 (78 %R)	31 (78 %R) (0 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Phenanthrene	< 2	32 (80 %R)	32 (80 %R) (1 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Anthracene	< 2	32 (80 %R)	32 (79 %R) (1 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Fluoranthene	< 2	31 (78 %R)	32 (80 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Pyrene	< 2	33 (82 %R)	33 (83 %R) (1 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Benzo[a]anthracene	< 2	33 (81 %R)	33 (84 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Chrysene	< 2	32 (80 %R)	33 (82 %R) (2 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Benzo[b]fluoranthene	< 2	33 (81 %R)	34 (84 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Benzo[k]fluoranthene	< 2	31 (78 %R)	32 (80 %R) (2 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Benzo[a]pyrene	< 2	31 (77 %R)	32 (80 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Indeno[1,2,3-cd]pyrene	< 2	30 (76 %R)	31 (78 %R) (3 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Dibenz[a,h]anthracene	< 2	32 (79 %R)	32 (81 %R) (2 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
Benzo[g,h,i]perylene	< 2	31 (76 %R)	32 (79 %R) (4 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
C9-C18 Aliphatic Hydrocarbons	< 100	160 (68 %R)	170 (71 %R) (4 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
C19-C36 Aliphatic Hydrocarbons	< 100	260 (80 %R)	270 (84 %R) (5 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
C11-C22 Aromatic Hydrocarbons	< 100	< 100 (%R N/A)	< 100 (%R N/A) (RPD N/A)		ug/L			MA EPH
C11-C22 Aromatic (Unadjusted)	< 100	550 (81 %R)	560 (82 %R) (1 RPD)	11/4/2020	ug/L	40 - 140	25	MA EPH
1-Chlorooctadecane (surr)	72 %R	73 %R	78 %R	11/4/2020	% Rec	40 - 140		MA EPH
o-Terphenyl (surr)	76 %R	79 %R	78 %R	11/4/2020	% Rec	40 - 140		MA EPH
2-Fluorobiphenyl (surr)	82 %R	87 %R	85 %R	11/4/2020	% Rec	40 - 140		MA EPH
2-Bromonaphthalene (surr)	81 %R	86 %R	84 %R	11/4/2020	% Rec	40 - 140		MA EPH

Percent (%) breakthrough of Naphthalene and 2-Methylnaphthalene is ≤ 5% unless noted.
Samples were extracted and analyzed within holding time limits.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
Sample surrogate recoveries met the above stated criteria.
The associated matrix spikes and/or Laboratory Control Samples met acceptance criteria.
There were no exceptions in the analyses, unless noted.
*/! Flagged analyte recoveries deviated from the QA/QC limits. Unless noted on the sample page, flagged analytes that exceed acceptance limits in the Quality Control sample do not impact the data.

LABORATORY REPORT

EAI ID#: **217926**

Client: **Williamson Environmental, LLC**
Client Designation: **ERO, MA | Orange, 24**

Client Sample ID:	MW-101
Lab Sample ID:	217926.08
Matrix:	aqueous
Date Sampled:	10/29/20
Date Received:	10/30/20

	Result	RL	Dilution Factor	Units	Date / Time Analyzed	Method	Analyst
pH	**6.46**	0.1	1	SU	10/30/20 16:08	4500H+B-11	AMB

LABORATORY REPORT

EAI ID#: **217926**

Client: **Williamson Environmental, LLC**

Client Designation: **ERO, MA | Orange, 24**

Client Sample ID:	MW-101
Lab Sample ID:	217926.08
Matrix:	aqueous
Date Sampled:	10/29/20
Date Received:	10/30/20
Time Sampled:	

	Result	RL	Dilution Factor	Analytical Matrix	Units	Date Analyzed	Time	Method	Analyst
Arsenic	< 0.001	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Barium	**0.10**	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Cadmium	**0.017**	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Chromium	< 0.001	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Lead	< 0.001	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Mercury	< 0.0001	0.0001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Selenium	< 0.001	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS
Silver	< 0.001	0.001	1	AqDis	mg/L	11/2/20	0:09	6020	DS

QC REPORT

EAI ID#: **217926**

Client: **Williamson Environmental, LLC**

Client Designation: **ERO, MA | Orange, 24**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Arsenic	< 0.001	0.20 (100 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Barium	< 0.001	0.19 (94 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Cadmium	< 0.001	0.20 (100 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Chromium	< 0.001	0.20 (100 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Lead	< 0.001	0.20 (98 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Mercury	< 0.0001	0.0010 (102 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Selenium	< 0.001	0.21 (103 %R)	NA	mg/L	11/2/20	80 - 120	20	6020
Silver	< 0.001	0.20 (102 %R)	NA	mg/L	11/2/20	80 - 120	20	6020

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

CHAIN-OF-CUSTODY RECORD

217926

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

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SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 / 524.2 BTEX	VOC: 524.2 MTBE ONLY / (8260) 624 VTICs / 1, 4 DIOXANE	VOC: 8021 BTEX HALOS	VOC: 8015 GRO (MAVPH)	SVOC: 8270 625 SVTICs EDB DBCP / ABN A BN PAH	SVOC: TPH8100 LI L2	SVOC: 8015 DRO (MAEPH)	SVOC: PEST 608 PCB 608 / PEST 8081 PCB 8082	SVOC: OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS / VOC PEST HERB	METALS: (DISSOLVED METALS) (LIST BELOW)	METALS: TOTAL METALS (LIST BELOW)	INORGANICS: TS TSS TDS SPEC. CON.	INORGANICS: BR CL F SO_4 / NO_2 NO_3 NO_3NO_2	INORGANICS: BOD CBOD T. ALK.	INORGANICS: TKN NH_3 T. PHOS. O. PHOS.	INORGANICS: (PH) T. RES. CHLORINE	INORGANICS: COD PHENOLS TOC DOC	INORGANICS: TOTAL CYANIDE TOTAL SULFIDE	INORGANICS: REACTIVE CYANIDE REACTIVE SULFIDE / FLASHPOINT IGNITABILITY	MICRO: TOTAL COLIFORM E. COLI / FECAL COLIFORM	MICRO: ENTEROCOCCI HETEROTROPHIC PLATE COUNT	OTHER	OTHER	OTHER	# OF CONTAINERS	NOTES MEOH VIAL #
mw-1	10/29/20 1205	GW	G		X		X			X																			5	
mw-2	1215	GW	G		X		X			X				X						X									7	
mw-3	1150	GW	G		X		X			X																			5	
mw-4	1140	GW	G		X		X			X																			5	
mw-5	10 45	GW	G		X		X			X																			5	
mw-6	11:20	GW	G		X		X			X				X						X									7	
mw-7	10:55	GW	G		X		X			X																			5	
mw-101	11:30	GW	G		X		X			X				X						X									7	
mw-104	10/29/20 11:10	GW	G		X		X			X																			5	

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

PROJECT MANAGER: H. Resca

COMPANY: Williamson Environmental

ADDRESS: 2 Shaker Rd

CITY: Shirley **STATE:** MA **ZIP:** 01464

PHONE: 978-425-6600 **EXT.:**

FAX: -6650

E-MAIL: labdata@williamsonenv.com

SITE NAME: ERO, MA

PROJECT #: Orange, 24

STATE: NH (MA) ME VT **OTHER:**

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, (OIL FUND), BROWNFIELD OR OTHER:

QUOTE #: **PO #:**

DATE NEEDED: 11/6/2020

QA/QC REPORTING LEVEL A B C OR (MA MCP)

REPORTING OPTIONS PRELIMS: YES OR NO

ELECTRONIC OPTIONS (E-MAIL PDF) EQUIS EXCEL

TEMP. 5.9 °C ICE? (YES) NO

SAMPLER(S): [signature]

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
[signature]	10/29/20	5:00pm	Secure Ref.
[signature]	10/30/20	1205	Heidi R[signature]
Heidi R[signature]	10/30/20	2:30	[signature]

METALS: (8 RCRA) 13 PP FE, MN PB, CU

OTHER METALS: LAB to Filter

SAMPLES FIELD FILTERED? ☐ YES ☒ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT) INVOICE TO: EAST RIVER ORANGE LLC 280 AYER RD HARVARD, MA (1504) [initials] 10/30

SITE HISTORY: Fmr Foundry

SUSPECTED CONTAMINATION: petro/metals/VOCs

FIELD READINGS: NA

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT D: SOURCE WATER CLASSIFICATION AND WQBEL ESTIMATES

- Millers River Segment ID – MA35-04
- MA35-04 – MassDEP Integrated List of Waters (2016)
- Critical Low Flow (7Q10) & Dilution Factor Estimates
- USEPA WQBEL Calculation Worksheet (MA Limits)

Millers River Segment ID MA35-04 Location

MAINSTEM MILLERS RIVER

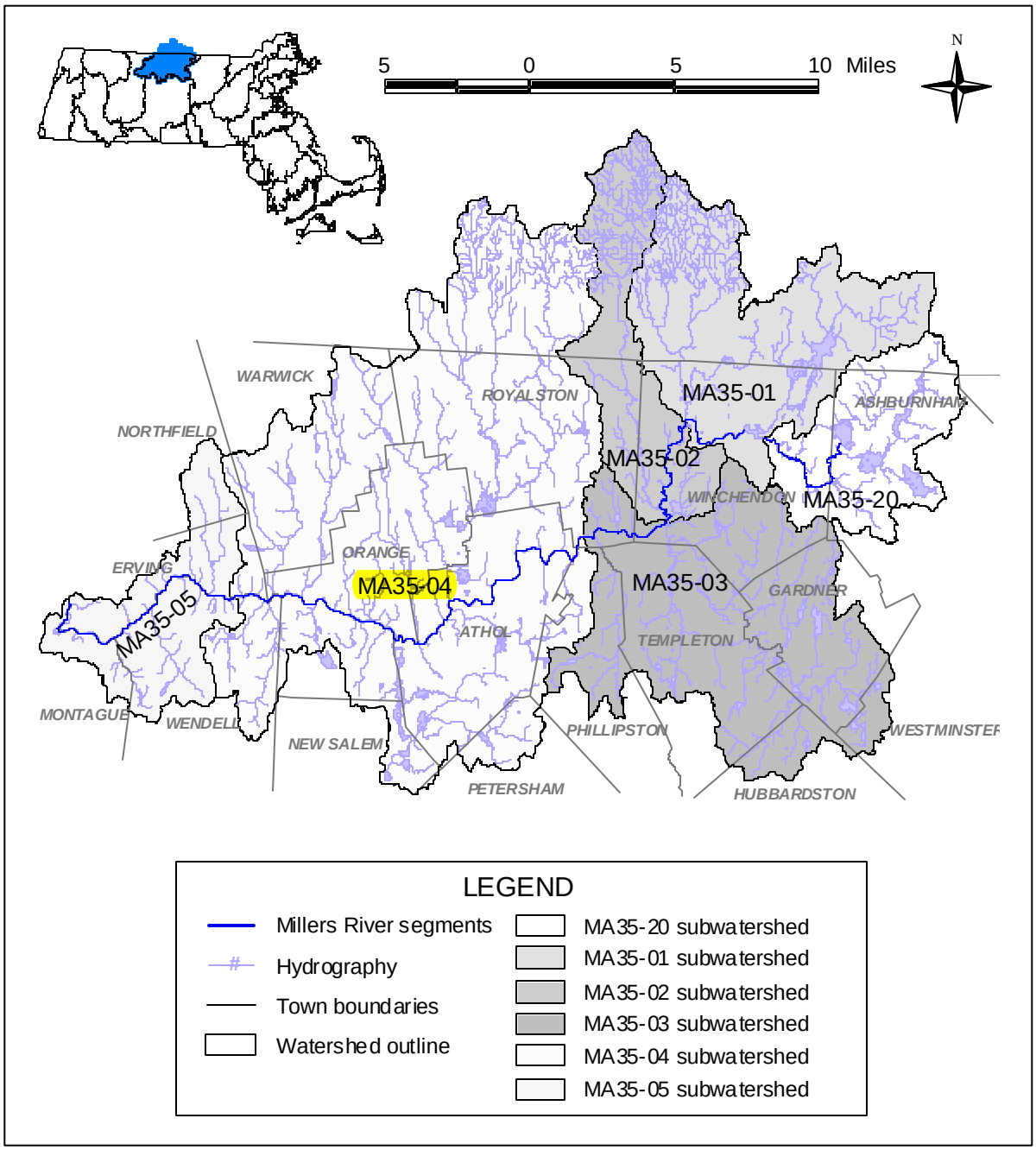
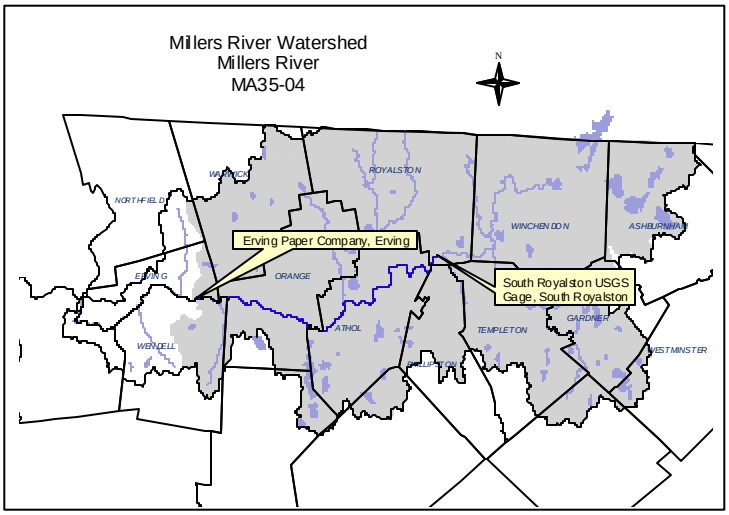


Figure 8. Mainstem Millers River segment locations

SOURCE: (MassDEP)

MILLERS RIVER (SEGMENT MA35-04)

Location: South Royalston USGS Gage, Royalston to Erving Center WWTP (formerly known as Erving Paper Company), Erving.
Segment Length: 18.5 miles.
Classification: Class B, Warm Water Fishery.



The total drainage area to this segment is approximately 360 square miles (281 of which lie in Massachusetts). Land-use estimates (top three) for the MA portion of the subwatershed (map inset, gray shaded area):

Forest	78%
Residential	8%
Agriculture	3%

The impervious cover area for most of the individual sub-basins in this segment of the Millers River is less than 10%, therefore it is classified as sensitive prediciting a low threat to water quality from impervious surface water runoff. The only exception is the Shingle Swamp Brook sub-basin that has an impervious area of 13.6%, which classifies it as impacted (Stoltzfus 2001).

From the USGS gage in South Royalston the Millers River flows west and west-southwest through Athol and then turns to flow west/northwest through Orange. The river then forms the border between Erving and Wendell. This segment ends at the Erving Center WWTP discharge (formerly the Erving Paper Company discharge).

This segment is on the 1998 303(d) List of Waters for unknown toxicity, priority organics, metals, nutrients, and pathogens (Table 3).

The use assessments for Bassett Pond (MA35002), Bowens Pond (MA35009), Davenport Pond (MA35015), Ellis Pond (MA35023), Gales Pond (MA35024), Hastings Pond (MA35028), Lake Mattawa (MA35112), Lake Rohunta-Middle Basin (MA35070), Lake Rohunta-North Basin (MA35106), Lake Rohunta-South Basin (MA35107), Laurel Lake (MA35035), Moores Pond (MA35048), North Spectacle Pond (MA35052), Phillipston Reservoir (MA35060), Reservoir #1, Athol (MA35063), Reservoir #2, Athol/Phillipston (MA35064), Riceville Pond (MA35065), Richards Reservoir (MA35067), South Athol Pond (MA35078), South Spectacle Pond (MA35081), Ward Pond (MA35093), Wheelers Pond (MA35097), and White Pond (MA35098) are provided in the Lake Assessment section of this report.

TMDLs for total phosphorus were calculated by MA DEP for Davenport Pond, Ellis Pond, Reservoir #1, Reservoir #2, Riceville Pond, South Athol Pond, and Ward Pond (MA DEP 2002).

MA DFWELE conducted fish population sampling in Moss Brook, West Brook, Mill Brook and Gulf Brook as follows.

Moss Brook was sampled using a backpack electroshocker on 30 August 2000. A total of 85 fish represented by eight species were collected. The most dominant species was blacknosed dace (*Rhinichthys atratulus*), which numbered 63. Other fish species present, in order of abundance, included: longnose dace (*Rhinicthys cataractae*), tesselated darter (*Etheostoma olmstedi*), white sucker (*Catostomus commersoni*), sea lamprey (*Petromyzon marinus*), brook trout (*Salvelinus fontinalis*), chain pickerel (*Esox niger*), and fallfish (*Semotilus corporalis*).

West Brook was sampled at two locations using backpack shocking on 6 July 2000. The first location was south of Ward Road extension in Orange. At that site a total of 169 fish represented by 11 species were collected. The dominant species was fallfish (*Semotilus corporalis*) followed by common shiner (*Luxilus cornutus*). Other fish species present, in order of abundance, included: brook trout (*Salvelinus fontinalis*), white sucker (*Catostomus commersoni*), longnose dace (*Rhinicthys cataractae*), yellow perch (*Perca flavescens*), yellow bullhead (*Ameiurus natalis*), brown trout (*Salmo trutta*), blacknosed

Category 5 waters listed alphabetically by major watershed
The 303(d) List – "Waters requiring a TMDL"

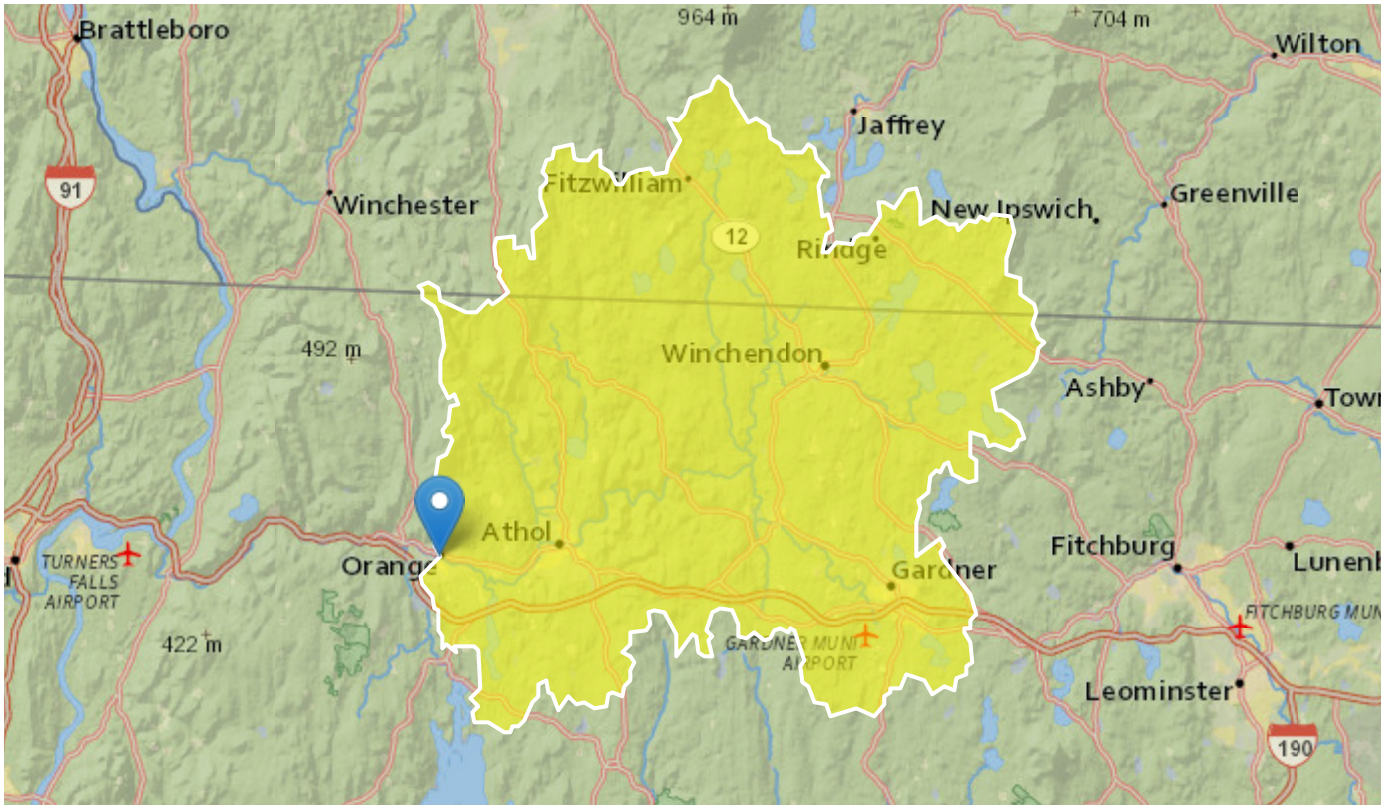
Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Millers River	MA35-02	Winchendon WWTP, Winchendon to confluence with Otter River, Winchendon.	5.60	Miles	PCBs In Fish Tissue	
Millers River	MA35-03	Confluence with Otter River, Winchendon to South Royalston USGS Gage, Royalston.	3.50	Miles	PCBs In Fish Tissue	
Millers River	MA35-04	South Royalston USGS Gage, Royalston to Erving Center WWTP (formerly known as Erving Paper Company), Erving.	18.50	Miles	PCBs In Fish Tissue	
Millers River	MA35-05	Erving Center WWTP (formerly known as Erving Paper Company), Erving to confluence with Connecticut River, Erving/Montague.	9.20	Miles	PCBs In Fish Tissue	
Millers River	MA35-20	Outlet of Sunset Lake, Ashburnham to inlet of Whitney Pond, Winchendon.	6.40	Miles	Lack of a coldwater assemblage	
					Temperature	
Mormon Hollow Brook	MA35-15	Headwaters just north of Montague Road, Wendell to confluence with Millers River, Wendell.	3.80	Miles	PCBs In Fish Tissue	
North Branch Millers River	MA35-21	Outlet of Lake Mononomac, Winchendon to inlet of Whitney Pond, Winchendon.	2.00	Miles	Mercury in Fish Tissue	
North Pond Brook	MA35-23	Headwaters, from northern outlet of Lake Mattawa, Orange to confluence with Millers River, Orange.	2.10	Miles	PCBs In Fish Tissue	
Otter River	MA35-06	Source, Hubbardston (north of Pitcherville Road) to Gardner WWTP, Gardner/Templeton.	4.30	Miles	Ambient Bioassays - Chronic Aquatic Toxicity	
					Dissolved Oxygen	
Otter River	MA35-08	Seaman Paper Dam, Templeton to confluence with Millers River, Winchendon.	5.50	Miles	PCBs In Fish Tissue	
Stockwell Brook	MA35-25	Headwaters east of Norcross Road, Royalston to mouth at Beaver Pond inlet, Royalston.	1.30	Miles	PCBs In Fish Tissue	
Tully Lake	MA35111	Royalston/Athol.	214.00	Acres	Harmful Algal Blooms	
Tully River	MA35-14	Confluence East and West Branches Tully River, Orange/Athol to confluence with Millers River, Athol.	1.60	Miles	PCBs In Fish Tissue	
Unnamed Tributary	MA35-26	Unnamed tributary to Millers River from the outlet of Lake Wallace to the mouth at confluence with Millers River, Ashburnham (excluding Lake Watatic segment MA35095 and Lower Naukeag Lake segment MA35041).	2.10	Miles	Copper	
West Branch Tully River	MA35-11	Outlet Sheomet Lake, Warwick to confluence with East Branch Tully River forming headwaters Tully River, Orange/Athol.	6.60	Miles	PCBs In Fish Tissue	
					Temperature	

SOURCE: (MassDEP)

7Q10 Estimate - Millers River Segment
MA35-04 At Outfall 001 (Rt 122 Bridge)

StreamStats Report

Region ID: MA
Workspace ID: MA20201210164156223000
Clicked Point (Latitude, Longitude): 42.58917, -72.30864
Time: 2020-12-10 11:42:08 -0500



East River Orange 7Q10 Estimate

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	323	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	3.848	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.14	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	1	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	323	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	3.848	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.14	square mile per mile	0	1.29
MAREGION	Massachusetts Region	1	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	79.4	ft^3/s
7 Day 10 Year Low Flow	46.6	ft^3/s

Low-Flow Statistics Citations

7Q10 = 46.6 cf/s = 30.1 MGD

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/)

Compare Streamstats model with USGS 7Q10 estimate between 1914 and 1985

Connecticut River basin

(State planning basins: Millers, Chicopee, Deerfield, Westfield and Farmington, and Connecticut River basins (fig. 27))

The Connecticut River basin, which covers an area of about 11,263 mi^2, is the largest drainage system in New England. The river flows south from the Boundary Mountains on the Maine-Quebec border to Long Island Sound for a total length of about 390 mi (Denny, 1982, p. 8). In Massachusetts, the Connecticut River basin has an area of about 2,728 mi^2, which occupies all of Franklin and Hampshire Counties, most of Hampden County, the eastern third of Berkshire County, and the western half of Worcester County. The tributary streams entering the Connecticut River from the west head in the Berkshire Hills and have steeper stream gradients than tributary streams from the east, which head in the Central Highlands.

The Connecticut Valley was formed by erosion of sedimentary rocks before the glacial period. These sedimentary rocks, largely sandstone, shale, and conglomerate, interspersed with volcanic rocks, were formed about 190 to 200 million years ago in the Jurassic and Triassic period. The bordering uplands are underlain by older, less erodible metamorphic and igneous rocks.

Millers River basin

Priest Brook near Winchendon, Mass.

Drainage area: 19.4 mi^2

Average discharge: 32.6 ft^3/s (Oct. 1916 to Sept. 1985)

Extremes for period of record:
Maximum discharge: 3,000 ft^3/s (Sept. 1938)
Minimum discharge: 0.08 ft^3/s (Sept. 1929)

Low flow (60 years of record):
7-day 2-year low flow: 1.6 ft^3/s
7-day 10-year low flow: 0.38 ft^3/s

Remarks: Before 1962, occasional diurnal fluctuation at low flow caused by mill upstream; before 1953, regulation at low flow by mill and ponds.

Millers River at Erving, Mass.

Drainage area: 372 mi^2

Average discharge: 632 ft^3/s (Oct. 1914 to Sept. 1985)

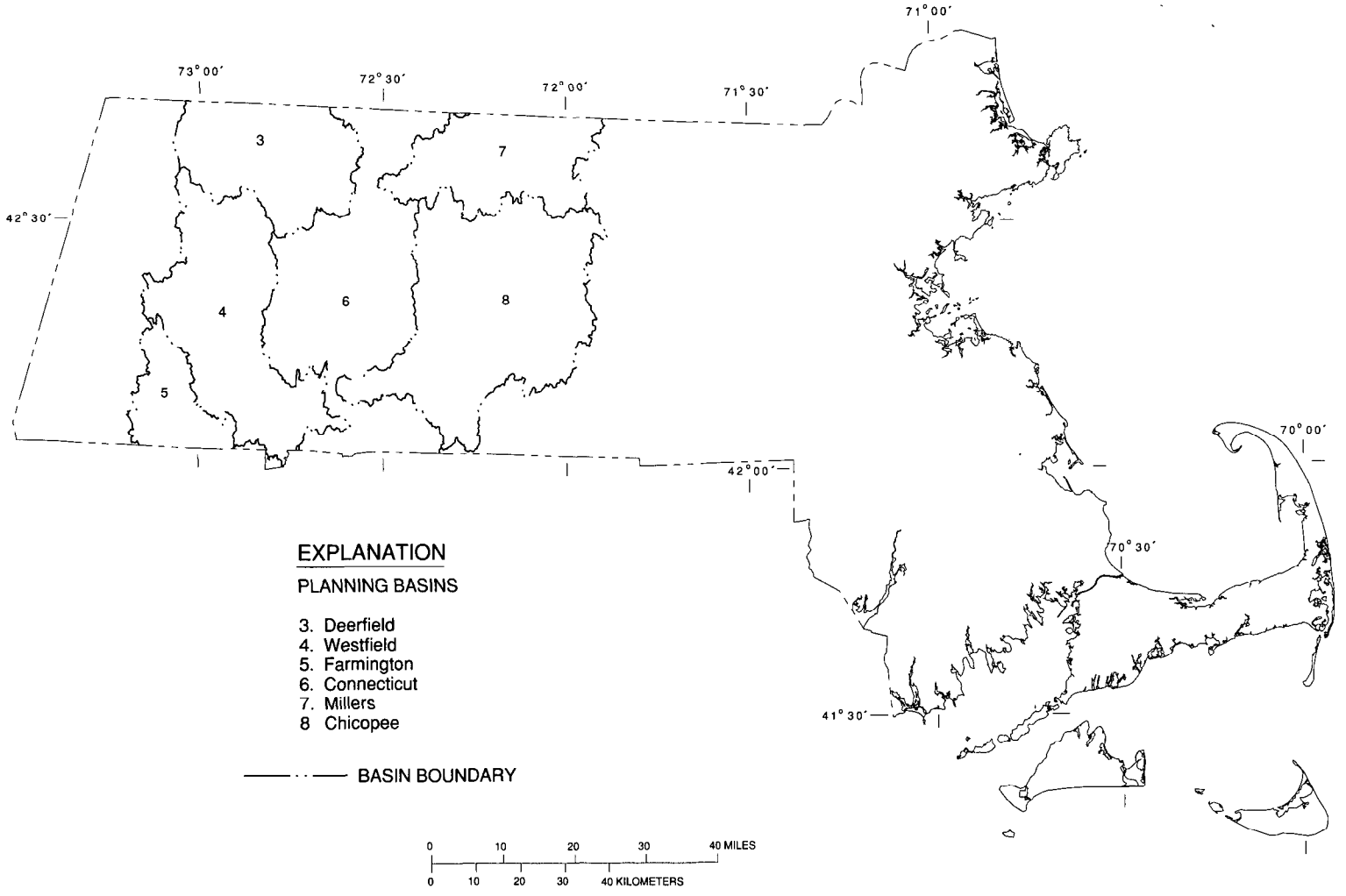


Figure 27.--Location of Massachusetts planning basins within the Connecticut River basin.

Extremes for period of record:

Maximum discharge: 29,000 ft^3/s (Sept. 1938)
Minimum discharge: about 0 ft^3/s (1915-16, because of regulation)
Minimum daily discharge: 8 ft^3/s (Sept. 1926)

Low flow (65 years of record)

7-day 2-year low flow: 80.1 ft^3/s
7-day 10-year low flow: 46.8 ft^3/s Check Of StreamStats Estimate

Remarks: Flow regulated by power plants and reservoirs; high flow regulated by reservoirs.

In Massachusetts, the Millers River basin is located in Franklin and Worcester Counties, and includes all or part of 18 towns (fig. 28). The following description of the water resources of the Millers River basin is based on Hydrologic Investigations Atlas 293 (Collings and others, 1969).

Surface water

The Millers River drains a total area of about 390 mi^2, about 313 mi^2 of which are in Massachusetts. About 78 percent of the basin is forested, 11 percent is open land, 8 percent is wetland, and 3 percent contains urban areas. Many wetlands in the basin indicate areas of former shallow lakes and ponds that have gradually been filled. There are a total of 107 lakes and ponds in the basin, 72 of which have an area of 10 acres or more. Only one lake, Lake Monomonock (Lake Monomonac) in Winchendon (592 acres), is larger than 500 acres (Massachusetts Department of Environmental Management, Division of Water Resources, 1978, p. 38; Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control, 1976a, p. 7, 26-29).

The Millers River formed at the end of the last glacial period when several glacial lakes joined and, eventually, drained into the Connecticut River. The river's headwaters are in the White Mountains of New Hampshire and in Ashburnham and Winchendon, Massachusetts. The North Branch and the main stem of the river join in Winchendon, and the river flows westward to the Connecticut River. Major tributaries of the Millers River are the Otter, which enters the Millers River in Winchendon, and the Tully River, which enters the Millers River in Athol. Both of these tributaries largely flow through wetlands.

Overall, the Millers River has a moderate gradient, averaging about 18 ft/mi from the headwaters area to the USGS streamflow-gaging station at Erving, a distance of about 43 river mi (Wandle, 1984b, p. 56). However, a 5-mi reach of the Millers River through a wooded area between South Royalston and Athol has an average gradient of about 43 ft/mi, which is about five times the average for rivers in Massachusetts (Massachusetts Department of Environmental Quality Engineering, Division of Water Pollution Control, 1974, p. 43). The gradient of the tributary Otter River averages about 18 ft/mi for a distance of about 11.5 river mi, and that of the East Branch Tully River, the major tributary of the Tully River, averages about 52 ft/mi over a distance of about 13 river mi (Wandle, 1984b, p. 55).

Ground water

Stratified glacial deposits in stream valleys form the best aquifers in the Millers River basin. The largest area of glacial outwash was deposited in a glacial lake located near Orange. Meltwater streams deposited sediments, up to 200-ft thick, into this lake. Other areas capable of yielding moderate to large amounts of ground water to wells occur near the mouth of the Millers River in Millers Falls, along the West Branch Tully River northwest of Athol, along the Otter River and Trout Brook, and in the Winchendon area.

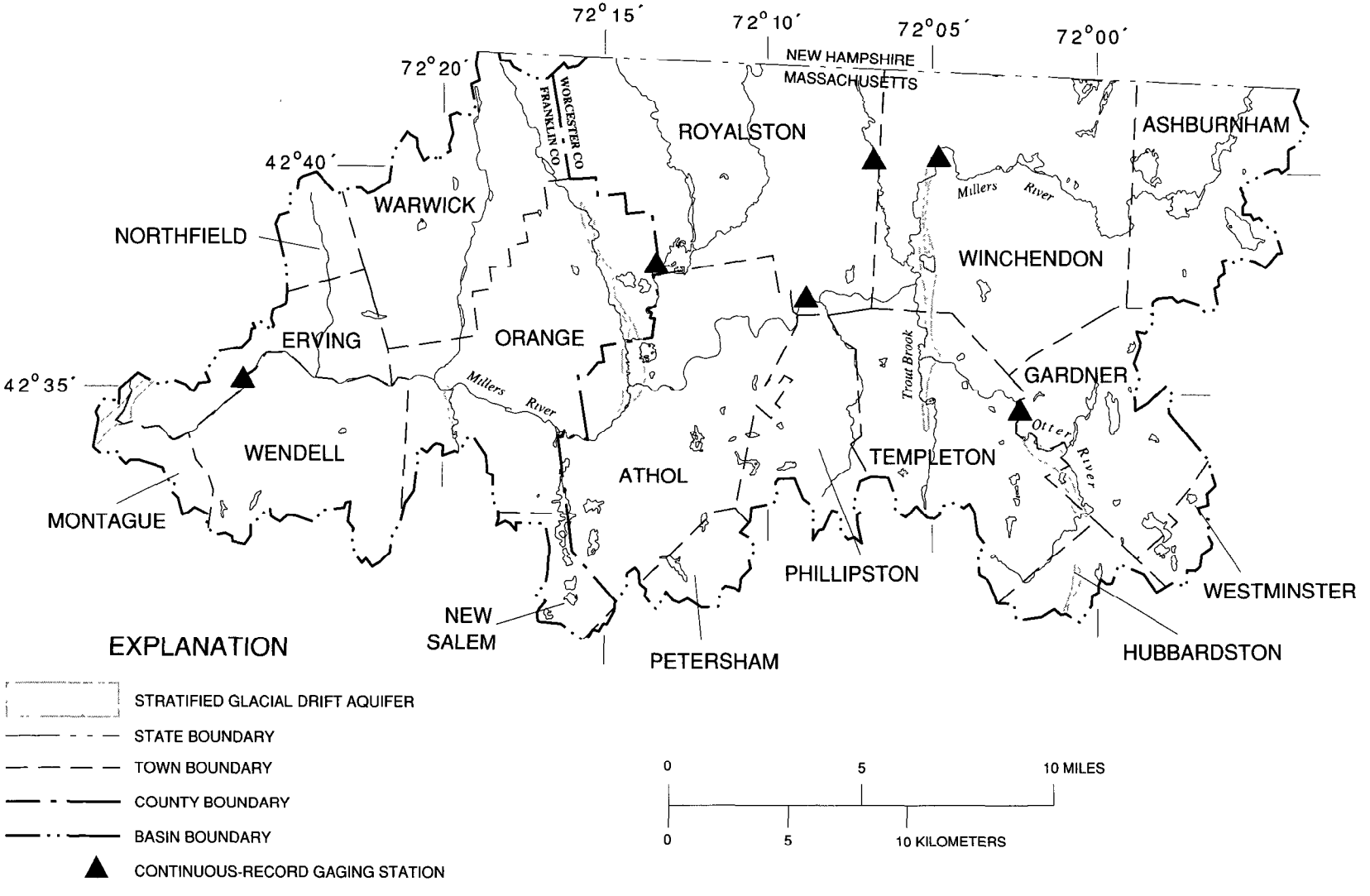


Figure 28.--Principal streams and areas of stratified drift in the Millers River basin. (Modified from U.S. Geological Survey Hydrologic Investigations Atlas 293.)

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
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EAST RIVER ORANGE PROJECT
CRITICAL LOW FLOW & DILUTION FACTOR ESTIMATES

FROM MAG910000 APPENDIX V:

A. Determine Critical Low Flow (7Q10):

From StreamStats drainage area ratios (see attached), 7Q10 = **46.6 ft³/s**

B. Calculate Dilution Factor (DF):

DF = (Qs + Qd)/Qd

Where:
Qs = 7Q10 (ft³/s or MGD)
Qd = Discharge flow (ft³/s or MGD)

Qd = 100 gpm x min/60s x ft³/7.48 gal = **0.22 ft³/s**

Therefore: DF = (46.6 + 0.22)/0.22 = **213**

Prepared By:

Ground/Water Treatment & Technology, LLC.

Daniel Sullivan
Project Manager/ Engineer

DEC 15, 2020

Daniel Sullivan

From: Ruan, Xiaodan (DEP) <xiaodan.ruan@state.ma.us>
Sent: Tuesday, December 22, 2020 10:22 AM
To: Daniel Sullivan
Cc: Vakalopoulos, Catherine (DEP)
Subject: RE: NPDES NOI Dilution Factor and Critical Flow Estimates

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Daniel,

Thank you for your patience and the detailed information.

I can confirm that the 7Q10 of 46.6 cfs for the Millers River, and the dilution factor of 213 for the proposed discharge with a design flow of 100 gpm for the project at 24 East River St, Orange, MA are correct.

Here is water quality information in assisting you in filling out the NOI:

> Waterbody and ID: Millers River (MA35-04) within Millers River Watershed
> Classification: B
> Outstanding Resource Water?: no
> State's most recent Integrated List is located here: https://www.epa.gov/sites/production/files/2020-01/documents/2016-ma-303d-list-report.pdf, search for "MA35-04" to see the causes of impairments.
> TMDLs: there is no TMDL for this segment

If this is not a *current* MCP site, then in addition to submitting the NOI to EPA, you need to apply with MassDEP and submit a $500 fee (unless fee exempt, e.g., municipality) using the ePLACE. The instructions are located on this page: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent. Technical assistant information is available on the front page of the ePLACE application webpage.

Please let me know if you have any questions.

Sincerely,
Xiaodan

Xiaodan Ruan
Massachusetts Department of Environmental Protection
One Winter Street, Boston, MA 02108
(617) 654-6517
xiaodan.ruan@mass.gov

From: Daniel Sullivan <DSullivan@gwttllc.com>
Sent: Thursday, December 17, 2020 8:17 AM
To: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Cc: Ruan, Xiaodan (DEP) <xiaodan.ruan@mass.gov>
Subject: NPDES NOI Dilution Factor and Critical Flow Estimates

Hello Catherine/Xiaodan,

I got your contact information from the MassDEP site under the NPDES section. I am preparing a NOI under MAG910000 on behalf of Williamson Environmental, LLC, (the operator) for a temporary construction dewatering project in Orange, MA. Part B of the NOI form requires the dilution and critical flow estimates to be "confirmed from the appropriate State." Is this something that you can approve? If not, is there someone at MassDEP you can refer me too (perhaps out of the Western Regional Office)?

The basic information is as follows: (See attachment for supporting information.)

- Receiving Water: Millers River at Rt 122 bridge in Orange, MA
- Source Water: Contaminated Dewatering from 24 East River St, Orange, MA, part of a redevelopment of vacant commercial land for a gas station/convenience store. Source water will be treated onsite (sedimentation/equalization/bag filters/liquid carbon adsorption) prior to discharge to municipal storm drain which leads to subject outfall. Max flowrate of discharge is 100 gpm (0.22 cf/s)
- I used StreamStats picking the point at outfall location. The model generated a **7Q10 of 46.6 cf/s**. Calculations (see page 4 of PDF packet) yielded **a dilution factor (DF) of 213**.
- As a check, I dug up some old USGS data from 1916 to 1985, they listed the 7Q10 at 46.8 cf/s, but this was from a point at the end of the river segment and therefore represents a larger drainage area (372 square miles vs. 323 square miles). Still, this lets me know I am in the ballpark.
- Based on the above information, is there a safety factor that should be applied to the 213 DF I obtained from StreamStats? I'm sure that if we reduced that value in half, to 106.5 or something along those lines, that should be sufficient.

Please let me know what your thoughts are when you have a chance, and let me know if you need any additional information.

Thank you,

Dan Sullivan
Project Manager/ Engineer

Ground/Water Treatment & Technology, LLC
39 River Street Millbury, MA 01527
(P) 800.962.4150 | (F) 508.755.7206 |(C) 508.735.3978
Email: dsullivan@gwttllc.com www.gwttllc.com

WQBELs Estimate Worksheet

Enter number values in green boxes below

Enter values in the units specified

↓

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

Enter a dilution factor, if other than zero

↓

213

Enter values in the units specified

↓

150	C_d = Enter influent hardness in **mg/L** $CaCO_3$
20	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

6.7	pH in **Standard Units**
14	Temperature in **°C**
0	Ammonia in **mg/L**
20	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
1.5	Copper in **µg/L**
610	Iron in **µg/L**
0.78	Lead in **µg/L**
0	Mercury in **µg/L**
0.67	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
5	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0	TRC in **µg/L**
0.095	Ammonia in **mg/L**
2.2	Antimony in **µg/L**
57	Arsenic in **µg/L**
30	Cadmium in **µg/L**
120	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
10,000	Copper in **µg/L**
110,000	Iron in **µg/L**
580	Lead in **µg/L**
0	Mercury in **µg/L**
170	Nickel in **µg/L**
4.4	Selenium in **µg/L**
2.2	Silver in **µg/L**
19,000	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
0	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Dilution Factor	210.0			
	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	2311	µg/L
Total Suspended Solids	**30**	mg/L	---	
Antimony	**206**	µg/L	134444	µg/L
Arsenic	**104**	µg/L	2101	µg/L
Cadmium	**10.2**	µg/L	17.6443	µg/L
Chromium III	**323**	µg/L	4966.9	µg/L
Chromium VI	**323**	µg/L	2402.0	µg/L
Copper	242	µg/L	**194.8**	µg/L
Iron	**5000**	µg/L	82563	µg/L
Lead	160	µg/L	**0.43**	µg/L
Mercury	**0.739**	µg/L	190.30	µg/L
Nickel	**1450**	µg/L	2740.8	µg/L
Selenium	**235.8**	µg/L	1050.3	µg/L
Silver	**35.1**	µg/L	52.6	µg/L
Zinc	**420**	µg/L	5558.5	µg/L
Cyanide	**178**	mg/L	1092.4	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	63021	µg/L
C. Halogenated VOCs				
Carbon Tetrachloride	**4.4**	µg/L	336.1	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	693.2	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	462.2	µg/L
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---	
Benzo(a)anthracene	**1.0**	µg/L	0.7983	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.7983	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.7983	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.7983	µg/L
Chrysene	**1.0**	µg/L	0.7983	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.7983	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.7983	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	4201	µg/L
tert-Butyl Alcohol	**120**	µg/L	---	
tert-Amyl Methyl Ether	**90**	µg/L	---	

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT E: ENDANGERED SPECIES, CRITICAL HABITAT, AND HISTORIC PROPERTIES

- Initial IPaC Results
- Fish & Wildlife Services (FWS) List of Endangered Species
- FWS Verification Letter (Endangered Species & Critical Habitat)
- Mass.Gov – Northern Long-eared Bat Locations and Prohibited Tree Removal
- MACRIS – MA Cultural Resource Information System
- National Registration of Historic Places Data Base

Northern Long-eared Bat Myotis septentrionalis Threatened

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/9045

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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: December 09, 2020
Consultation Code: 05E1NE00-2021-SLI-0689
Event Code: 05E1NE00-2021-E-02085
Project Name: East River Orange

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: 05E1NE00-2021-SLI-0689

Event Code: 05E1NE00-2021-E-02085

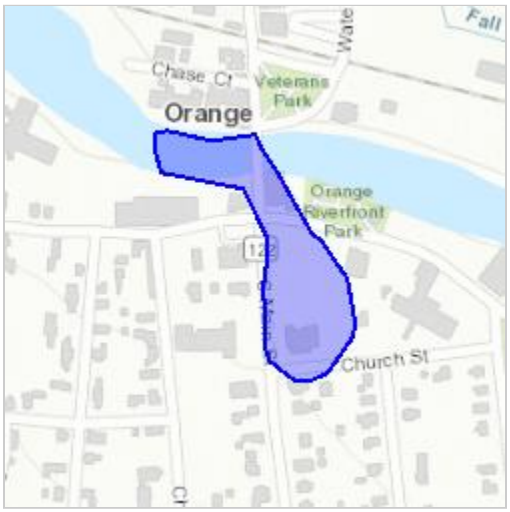
Project Name: East River Orange

Project Type: DEVELOPMENT

Project Description: EPA NPDES RGP NOI filing for temporary construction dewatering project at 24 East River St., Orange, MA. Dewatering for excavation anticipated to last for one week in the month of February, 2021. Contaminated groundwater will be treated at 100 gpm (frac tanks, mechanical filtration, and granular activated carbon adsorption) prior to discharge to municipal storm drainage outfall to Millers River under South Main Street Bridge.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.5882563378038N72.3090541732087W



Counties: Franklin, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

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

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

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

---

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

Mammals

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

Critical habitats

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

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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70 Commercial Street, Suite 300
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Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2021-TA-0689
Event Code: 05E1NE00-2021-E-02086
Project Name: East River Orange

December 09, 2020

Subject: Verification letter for the 'East River Orange' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Dan Sullivan:

The U.S. Fish and Wildlife Service (Service) received on December 09, 2020 your effects determination for the 'East River Orange' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

---

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

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

1. Name

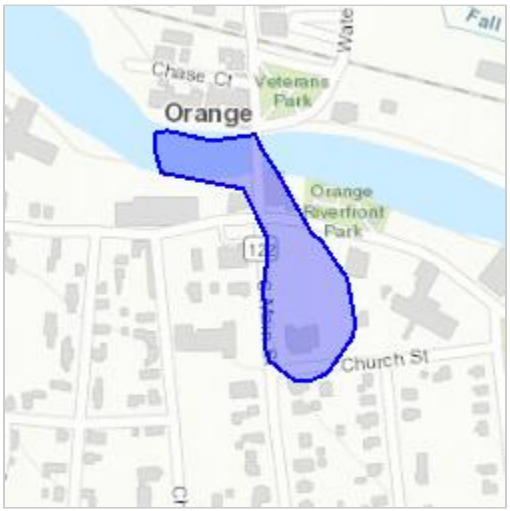
East River Orange

2. Description

The following description was provided for the project 'East River Orange':

> EPA NPDES RGP NOI filing for temporary construction dewatering project at 24 East River St., Orange, MA. Dewatering for excavation anticipated to last for one week in the month of February, 2021. Contaminated groundwater will be treated at 100 gpm (frac tanks, mechanical filtration, and granular activated carbon adsorption) prior to discharge to municipal storm drainage outfall to Millers River under South Main Street Bridge.

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.5882563378038N72.3090541732087W



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

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

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

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

   Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

   No

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

   No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

   Automatically answered
   No

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

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

   Yes

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

   No

7. Will the action involve Tree Removal?

   No

Project Questionnaire

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

1. Estimated total acres of forest conversion:

0

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

0

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

0

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

4. Estimated total acres of timber harvest

0

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

0

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

0

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

7. Estimated total acres of prescribed fire

0

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

0

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

0

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

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

The Northern Long-eared Bat

The Northern Long-eared Bat (Myotis septentrionalis) (NLEB) is one of the species of bats most impacted by the disease White-nose Syndrome (WNS).

Due to severe population declines caused by WNS, the U.S. Fish & Wildlife Service (USFWS) listed the Northern Long-eared Bat as a Threatened species under the Endangered Species Act (ESA, 50 CFR 17.11) on April 2, 2015. NLEB is also listed as Endangered under the Massachusetts Endangered Species Act (MESA, M.G.L. c. 131 A).

Northern Long-eared Bat, Endangered. Photo by USFWS

Prohibited tree removal

Projects that result in tree removal activities shall comply with the 4(d) rule under the ESA (effective 2/16/2016), which states:

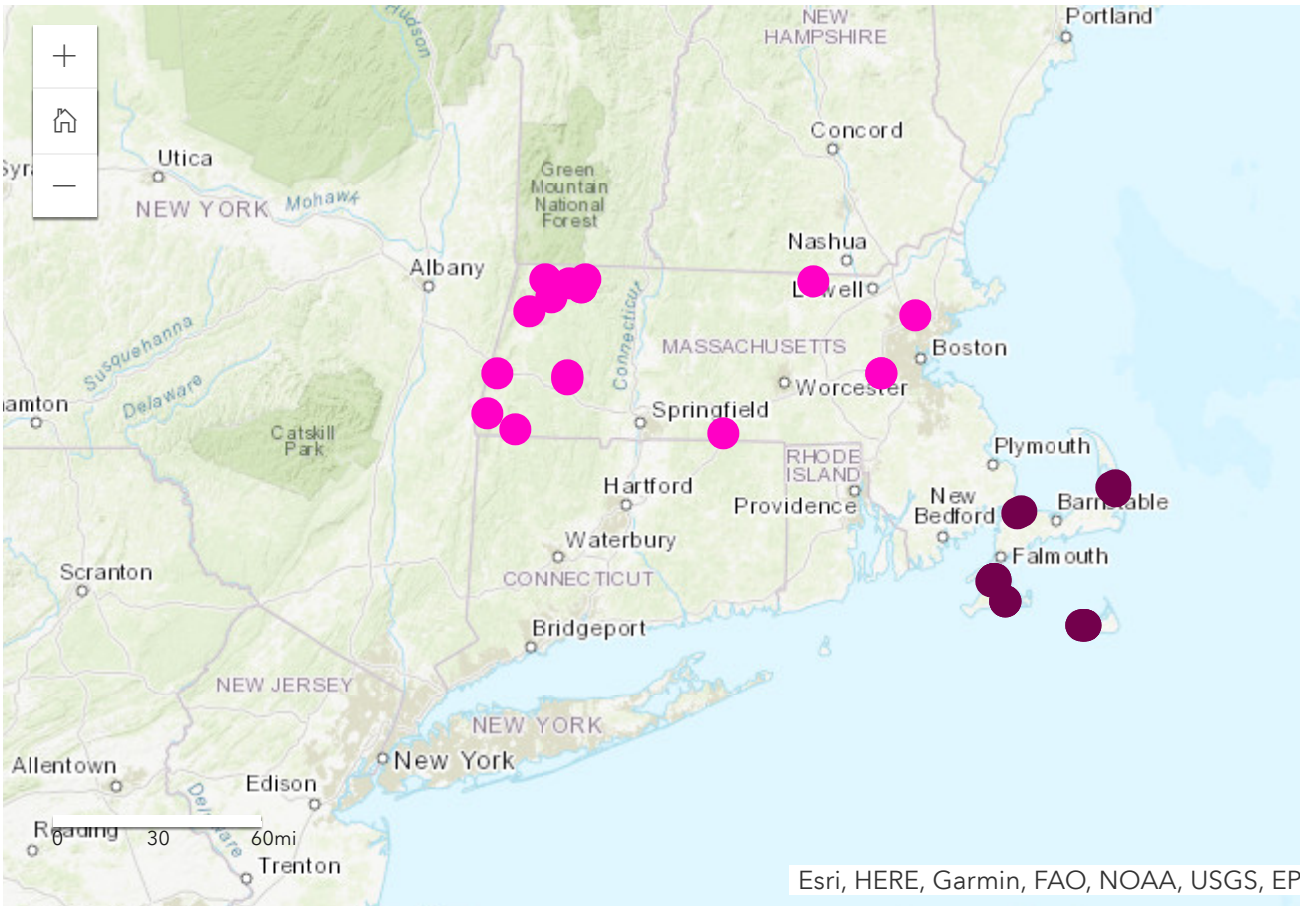
"Incidental take resulting from tree removal is prohibited if: 1) Occurs within 0.25 mile radius of known northern long-eared bat hibernacula or 2) cuts or destroys known occupied maternity roost trees, or any other trees within a 150-foot radius from the known maternity tree during the pup season (June 1 through July 31)."

For more information on the Northern Long Eared Bat and the 4(d) rule, please visit: **http://www.fws.gov/midwest/endangered/mammals/nleb/** (http://www.fws.gov/midwest/endangered/mammals/nleb/). Please note that if your proposed project or activity is also within Priority Habitat as codified under the MESA, a separate **MESA review will be required** (/service-details/ma-endangered-species-act-mesa-overview).

To assist project proponents with the review processes described above, we are providing the following map for known locations of winter hibernacula and maternity roost trees. Please note that this map only includes regulated sites. Please contact the **USFWS** (http://www.fws.gov/newengland/index.htm)for additional information on project compliance with the ESA for the Northern Long-eared Bat.

A **full screen map** (https://mass-eoeea.maps.arcgis.com/apps/Viewer/index.html?appid=de59364ebbb348a9b0de55f6febdfd52)is also available and contains additional information, including the type of habitat (hibernacula or maternity roost tree) and whether the location is mapped as Priority Habitat.

Please note that this map is updated as new information is received. ***Last Updated June 4, 2019.*** *The changes on June 4, 2019 include a number of locus edits due to the availability of more precise information.*



CONTACT

Natural Heritage & Endangered Species Program

Address

MassWildlife Field Headquarters
1 Rabbit Hill Road, Westborough, MA 01581
Directions (https://maps.google.com/?q=1+Rabbit+Hill+Road%2C+Westborough%2C+MA+01581)

Phone

Main (508) 389-6360 (tel:5083896360)
Open M-F, 8am-4:30pm

Regulatory Review Inquiries (508) 389-6357 (tel:5083896357)
North/Central/Western Massachusetts

(508) 389-6385 (tel:5083896385)
Southeastern Massachusetts/Cape & Islands

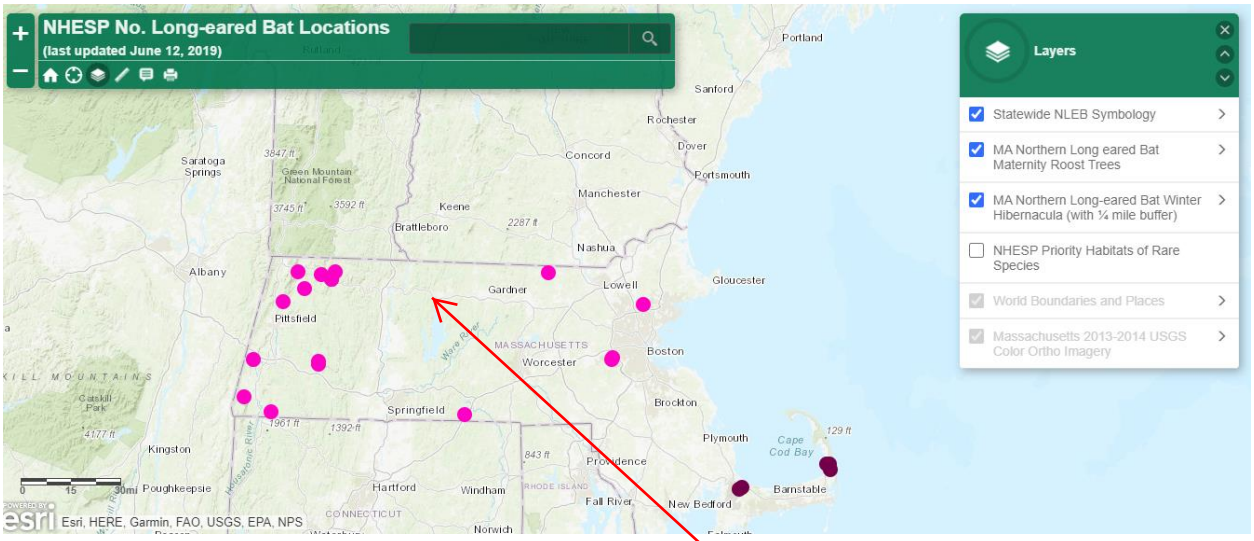
RELATED

MA Endangered Species Act (MESA) Regulatory Review (/ma-endangered-species-act-mesa-regulatory-review)

Forestry and rare species review (/info-details/forestry-and-rare-species-review)

Request rare species information (/how-to/request-rare-species-information)

Bat Mortality in Massachusetts (/service-details/bat-mortality-in-massachusetts)



Project location does not appear to be in area of known maternity roost trees or hibernacular.

Massachusetts Cultural Resource Information System
MACRIS

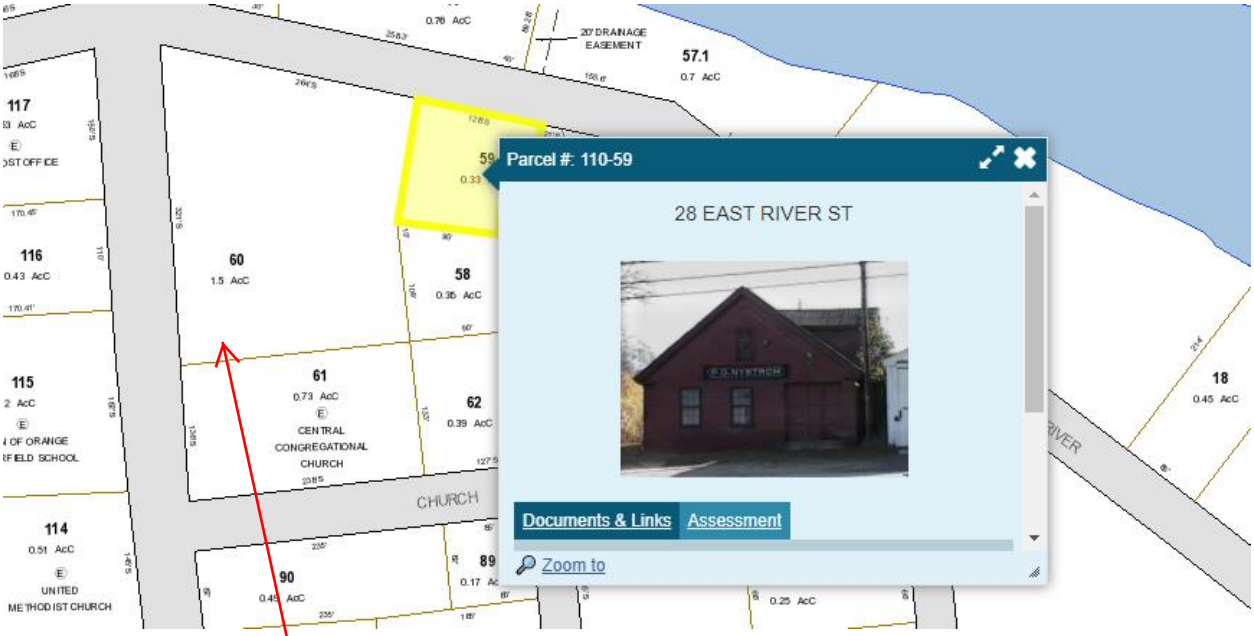
MHC Home | MACRIS Home

For more information about this page and how to use it, click here.

Inventory No:	ORA.167 INV
Historic Name:	Spear, Isaac and Erastus Blacksmith Shop
Common Name:	Nystrom, Andrew and Phillip Blacksmith Shop
Address:	24 East River St
City/Town:	Orange
Village/Neighborhood:	Orange
Local No:	
Year Constructed:	C 1870
Architect(s):	
Architectural Style(s):	Greek Revival
Use(s):	Blacksmith Shop; Warehouse
Significance:	Architecture; Industry
Area(s):	
Designation(s):	
Building Material(s):	Roof: Asphalt Shingle Wall: Wood; Wood Clapboard Foundation: Brick; Stone, Cut

New Search Previous

MHC Home | MACRIS Home



Area of dewatering and treatment will not impact historic property

National Register of Historic Places (NRHP) Database

5240	02000156	Pine Street School	Listed	3/13/2002	MASSACHUSETTS	Franklin	Northfield	13 Pine St.	Holton
5241	89000057	Orange Center Historic District	Listed	4/27/1989	MASSACHUSETTS	Franklin	Orange	Roughly N. and S. Main St. from Prospect St. to River St.	Howe,I
5242	07001312	South School	Listed	12/26/2007	MASSACHUSETTS	Franklin	Schutesbury	6 Schoolhouse Rd.	
5243	06000716	Hill Cemetery and Parson Hubba	Listed	8/23/2006	MASSACHUSETTS	Franklin	Shelburne	Old Village Rd., 72 Old Village Rd.	
5244	87002548	Shelburne Falls Historic District	Listed	1/28/1988	MASSACHUSETTS	Franklin	Shelburne	Bridge and State Sts.	Multip

Proposed dewatering and treatment is in proximity but not within Orange Center Historic District.

Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

ATTACHMENT F: BEST MANAGEMENT PRACTICES PLAN

GWTT
Ground/Water Treatment & Technology, LLC

39 RIVER STREET
MILLBURY, MA 01527
TEL: (800) 962-4150
(508) 755-7075
FAX: (508) 755-7206

BEST MANAGEMENT PRACTICES PLAN

This Best Management Practices Plan (BMPP) is intended to outline both the operational procedures and best management practices (BMPs) required to maintain an effective and environmentally compliant on-site temporary groundwater treatment system for the duration of construction dewatering as part of the redevelopment of the 24 East River Street property in Orange, MA. The major components of the 100 gpm base treatment system are described in the NOI form of this filing and identified in the P&ID, layout, and site location drawings provided in the attachment. The goal of the system is to minimize the number and quantity of pollutants discharged to the municipal storm drain collection system that leads to the receiving water outfall (001) to Millers River under the Rt. 122 bridge. During construction activities, the site operator, Williamson Environmental, LLC, will operate the system according to this BMPP and can be contacted at (978) 425-6600. This BMPP has been prepared as an appendix to the RGP and shall be posted onsite for the duration of temporary construction dewatering activities.

Groundwater Treatment

Construction dewatering activities are anticipated to be required based upon the maximum depth of excavation at 16-feet in order to install the UST. Groundwater is expected to be encountered within two to five feet bgs. Water pumped to the excavation will first be equalized in the fractionation tank where primary gravity sedimentation will occur. In order to prevent tank overflows, tank level must be monitored continuously by onsite personnel. In addition, the tank will have a high-water float switch that will activate an alarm to alert the operator of the condition so that corrective actions can be taken (shut down the dewatering pumps and/or check on the functioning of the transfer pumps and downstream filtration systems such as clogged bag filters). The operator should also monitor the flow rate of the transfer pumps so that they only operate slightly above the influent flowrate of the dewatering pumps, but do not exceed the design flowrate of 100 gpm. If influent flow from the excavation is less than 100 gpm, it is advantageous to slow the transfer pump down to maximize contact time the process water has with the carbon media to maximize treatment efficiency and reduce pollutant loads as much as possible. The filtration train (both bag filters and carbon vessels) should be routinely checked throughout the day for excessive differential pressure across the filtration medium (usually 10 to 15 psi). Under high differential pressures, bag filters should be changed with clean ones, and carbon vessels should be backwashed. A clean source of backwash water is recommended, and backwash discharge water should be returned to the fractionation tank. As the project endures, the frac tank should be checked for sludge build up and removed (for example using a vac truck) by a licensed disposal company when required. Finally, the flowmeter should be continuously monitored, and a flow totalizing reading should be recorded at the start and end of the day.

As shown of the site map, the treatment system should be placed between the excavation area and catch basin where the discharge water will flow. The area should be flat, stable ground and provide adequate nearby areas to store the necessary tools and equipment required to maintain the system. Ample room should also be provided for loading and offloading equipment and site runoff should be controlled in keeping with typical site construction practices.

Groundwater Discharge Monitoring Requirements

Sampling and analysis of the groundwater at both the treatment system's influent (prior to the fractionation tank) and effluent (after the carbon vessels) is required to be conducted at predetermined intervals in accordance with the RGP regulations. During the first week of discharge, the operator will sample the influent and effluent twice. The first sample is to be taken on the first day of discharge, the second sample must be taken on a non-consecutive day within the first week of discharge. In both cases, the results will be reviewed no more than 48 hours from receipt of the results from each sampling event. Samples will be analyzed in accordance with 40 CFR Section 136, unless specifically prohibited by the RGP. Should the dewatering activity last more than seven days and the sampling results are compliant, then monitoring frequency continues as outlined in Part 4.4 of the RGP "Short-Term Discharge Monitoring Requirements," until a Notice of Termination (NOT) is issued by the operator. Any adjustments/reductions in monitoring frequency must be approved by the EPA in writing.

Continuance of the BMPP through project completion includes wastewater treatment and management, discharge monitoring and compliance, system maintenance, and management of treatment system materials. Only qualified personnel must perform the operation and maintenance, including the regular inspections and monitoring of system performance. Waste material generated (e.g, sludge, bag filters, spent carbon media, contaminated rinse water and hoses) from the dewatering treatment system must be characterized and removed from the site for disposal at an approved licensed receiving facility. In addition to the O&M responsibilities, the operator must meet the record-keeping requirements on Part 4.5 and reporting requirements in Part 4.6 of the RGP