May 25, 2021

Ms. Shauna Little
United States Environmental Protection Agency – Region 1
5 Post Office Square
Suite 100/OEP06-1
Boston, Massachusetts 02109-3912

Re: **Submittal of Notice of Intent for Coverage Under the Remediation General Permit**
Construction Dewatering
66-88 Galen Street
Watertown, Massachusetts

Dear Ms., Little:

On behalf of Galen Street Development LLC/51 Water Street LLC (Owner) and R.F. Roach Co. Inc. (Contractor), Tighe & Bond is submitting this Notice of Intent (NOI) for coverage under the National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for discharge of treated groundwater from construction activities at 66-88 Galen Street in Watertown, Massachusetts (the Site). Dewatering activities are anticipated during excavation activities for the construction of a new building on the property. It is anticipated that dewatering activities at the Site will begin in June 2021 with an estimated construction completion date of March 2022.

Dewatered groundwater from within excavation areas is proposed to be treated on-Site and will be discharged at a catch basin along Galen Street or Water Street under the jurisdiction of the City of Watertown Department of Public Works (DPW), with ultimate discharge to the Charles River via Outfall Numbered 29. Permission from the City of Watertown DPW will be obtained prior to use of their stormwater system. The RGP NOI Fillable Form is included as Attachment A, with Site Figures in Attachment B.

Owner and Operator

The Site owner (Galen Street Development LLC/51 Water Street LLC) and Site operator (R.F. Roach., Co., Inc) will be co-permittees for this NPDES RGP application.

Project Description

Dewatering will be required as part of the planned construction of a new 450,000 square-foot life sciences campus located at 66-88 Galen Street in Watertown, Massachusetts. The overall Site encompasses separate parcels, 66 Galen Street, 70 Galen Street, 78 Galen Street and 84-88 Galen Street and totals approximately two-acres of land. The life sciences campus will include a 230,000 square foot life sciences building with office and laboratory spaces, a below grade parking lot, surface parking and landscaped areas.

Site Regulatory Background

Based on information maintained on the Massachusetts Department of Environmental Protection (MassDEP) Bureau of Waste Site Cleanup (BWSC) online database, the following releases of oil and/or hazardous materials (OHM) have been documented at the Site as summarized below. Figure 2 enclosed with Attachment B shows the properties and their associated Release Tracking Numbers (RTNs). Remediation activities at the Site are being

filed under a Release Abatement Measure (RAM) under RTNs 3-0502, 3-36310, 3-23191, 3-36309, and 3-36084. It is anticipated that the RTNs (with the exception of RTN 3-0502) will be linked to the "parent" RTN 3-36310 in the upcoming MassDEP Tier Classification Report.

In the upcoming weeks, the project will be filing for an EPA Construction General Permit (CGP) and preparing a Stormwater Pollution Prevention Plan for management of stormwater during construction activities.

66 Galen Street
RTN-3-14153
A Downgradient Property Status (DPS) was prepared by GZA GeoEnvironmental, Inc. (GZA) and submitted to MassDEP in 1997 due to the detection of cyanide in groundwater. The source of the cyanide was reported to have originated at 51-57 Water Street, which was the location of a coal gasification plant or gasometer until the 1930s and later a metal plating facility.

In addition, benzene was detected near the former garage in the center of the property at levels exceeding the current Massachusetts Contingency Plan (MCP) Method 1, GW-2 Standard. A previous Phase I and Phase II Environmental Site Assessment performed by Briggs Associates in 1996, describes a grease trap and dry well in the vicinity of the garage area, both of which were reported as having an "oily sheen." Impacts to soil and groundwater in the immediate vicinity of the grease trap and dry well were not identified during subsurface investigations performed in 1996 by Briggs and Associates as part of Phase II investigations and the DPS prepared by GZA. Due to the partial building demolition, construction of a new garage, and repaving of the parking lot between 1999 and 2006, the grease trap and dry well are no longer accessible. Records related to the current status of the dry well and grease trap have not been identified.

The Briggs report also describes a 1,000-gallon gasoline UST that was removed in 1995 and reported to be in good condition. Additionally, a 5,000-gallon fuel oil UST, 275-gallon new motor oil above ground storage tank (AST), and 300-gallon waste oil AST were also described as being present at the Site. Records describing the removal of the 5,000-gallon fuel oil UST or ASTs were not identified.

A subsequent Phase II by Tighe & Bond did not detect OHM in the vicinity of the dry well, grease trap, USTs, or ASTs.

RTN 3-36310
A Release Notification Form (RNF) was filed by Tighe & Bond in June 2020 on behalf of Galen Street Development LLC for the a 120-day reporting condition for detections of lead and total petroleum hydrocarbons (TPHs) in soil exceeding applicable MassDEP RCS-1 Reportable Concentrations. On July 1, 2020 MassDEP issued a Notice of Responsibility to Galen Street Development LLC. This RTN will be utilized for a forthcoming Release Abatement Measure (RAM) Plan to manage contaminated soil and groundwater at the Site. This area is on the northern portion of the property and appears to be related to prior disposal of waste material.

70 Galen Street, Watertown
RTN 3-23191
RTN 3-23191 was assigned in September 2003 to the 70 Galen Street property during the excavation of three USTs: two 5,000-gallon and one 8,000-gallon used to store gasoline. Photoionization detector (PID) readings greater than 100 parts per million by volume (ppmv) were detected when the USTs were being removed, triggering a 72-hour reporting condition.

For many years, the required MCP response actions were not being conducted; therefore, MassDEP issued an administrative consent order (ACO) in April 2017 to the property owner

requiring that either a RAM Completion (RAMC) Report or RAM Status Report be submitted to MassDEP on or before April 17, 2017. A RAMC was submitted by EBI on April 17, 2017. The ACO also required that a Permanent or Temporary Solution Statement be submitted by December 20, 2018; however, due to this property's history of violations and noncompliance, an ACO with Penalties (ACOP) was issued to the owner in October 2018. During assessment activities light non-aqueous phase liquid (LNAPL) has been measured in several monitoring wells related to this release.

There are three subsequent RTNs, which have been assigned to the 70 Galen Street property for similar release conditions related to other USTs that previously existed. However, RTN 3-23191 has become the "parent" RTN and most filings were done under this number.

RTN 3-27597

This RTN was assigned to the 70 Galen Street property due to the detection of 0.41 feet of LNAPL on the groundwater surface in MW-5. This was reported as a 72-hour release condition on March 27, 2008. The LNAPL was detected during a quarterly groundwater monitoring event for RTN 3-23191. Analyses of the LNAPL identify the product as diesel fuel. Immediate Response Action (IRA) activities included recovery of LNAPL using a bailer and placing absorbent socks.

Based on the reporting date of March 17, 2008, a Phase II Comprehensive Site Assessment (CSA) was due on March 27, 2011. On May 13, 2011, Tyree, as the consultant for the owner, submitted a Delay in Compliance requesting an extension until March 26, 2012 for the Phase II CSA. A second Delay in Compliance was submitted on February 8, 2012, which requested another extension. The reason given by Tyree is that the owner of the property at 66 Galen Street would not grant them access to install a downgradient monitoring well. The farthest downgradient monitoring well at the Site still had high concentrations of petroleum and therefore, the disposal site boundary could not be defined. Tyree called this a "Force Majeure" event and they could not provide a schedule for completion until access was granted. MassDEP, in a note to the file, stated that "a Phase II that would meet the requirements set forth in 310 CMR 40.0000 cannot be met at this time."

An Immediate Response Action Completion (IRAC) report was submitted on March 18, 2014, which indicates that the LNAPL levels were decreasing and a measurable thickness of product has not been detected since January 2012. The IRAC also notes that Iris Davis of MassDEP said that the Phase II CSA could be completed without offsite wells; rather, the licensed site professional (LSP) at Tyree could model the petroleum hydrocarbon constituents in lieu of actual offsite monitoring wells. Tighe & Bond notes that while there was no LNAPL in 2014, 1.38 feet of LNAPL was present on April 24, 2015. This refutes the submission of an IRAC, which is noteworthy because the original IRAC was found to be missing the figures and was resubmitted on Aril 27, 2015, three days after the LNAPL was found. There is no mention of this fact in the transmittal letter for the resubmitted IRAC.

The IRAC states that going forward, RTN 3-27597 will be linked to RTN 3-23191 and future response actions and submittals will be conducted under RTN 3-23191.

RTN 3-34348

In June 2017, Corporate Environmental Advisors (CEA) personnel oversaw the excavation and removal of three USTs; soil samples were collected beneath and from the sidewalls of the UST excavations. During screening of soil samples with a PID, concentrations of total organic vapors (TOVs) exceeded 100 ppmv triggering a 72-hour release notification; MassDEP assigned RTN 3-34248 to the release condition. Soil sample analyses indicated that volatile petroleum hydrocarbons (VPH) fractions were detected above applicable RCS-1 Reportable Concentrations in two of the seven samples; however, the exposure point concentrations

(EPCs) were below MCP S-1/GW-2 and S-1/GW-3 Method 1 Risk Characterization (M1RC) soil standards. Therefore, in August 2017, CEA submitted a Permanent Solution with No Conditions (PSNC) supported by an M1RC, which concluded that a condition of No Significant Risk existed at the Site.

RTN 3-34542
This RTN was assigned on October 13, 2017, during the excavation of two 10,000-gallon USTs: one diesel fuel and one gasoline. PID readings greater than 100 ppmv were detected when the USTs were being removed, triggering a 72-hour reporting condition. A total of 2,042.93 tons of soil were reportedly removed from the Site. A Tier Classification would have been due on or before October 13, 2018 but in August 2, 2018, MassDEP sent the owner a Notice of Enforcement Conference to discuss an Administrative Consent Order with Penalties (ACOP). The ACOP was issued due to numerous violations of MGL Chapter 21E and the MCP.

RTN 3-34570
This RTN was assigned on October 27, 2017 during the excavation of one 18,000-gallon UST used to store gasoline. PID readings greater than 100 ppmv were detected when the UST was being removed, which is a 72-hour reporting condition. A total of 1,400 cubic yards of soil were reportedly removed from the Site. A Tier Classification would have been due on or before October 27, 2018 but as with RTN 3-34542 on August 2, 2018, MassDEP sent the owner a Notice of Enforcement Conference to discuss an ACOP, which was issued for RTN 3-23191. As previously stated, The ACOP was issued due to numerous violations of MGL Chapter 21E and the MCP.

78-80 Galen Street (Former Valvoline)
RTN 3-36309
An RNF was filed by Tighe & Bond in June 2020 on behalf of Galen Eighty Development LLC for the a 120-day reporting condition for detections of lead and TPH exceeding applicable MassDEP RCS-1 Reportable Concentrations. On July 1, 2020 MassDEP issued a Notice of Responsibility (NOR) to Galen Eighty Development LLC. This RTN will be utilized for a forthcoming RAM Plan to manage contaminated soil and groundwater at this property.

84-88 Galen Street
RTN 3-36084
An RNF was submitted by Tighe & Bond in January 2020 on behalf of Galen Eighty-Four Development LLC for a 120-day reporting condition for the detection of cyanide in soil exceeding applicable MassDEP RCS-1 Reportable Concentrations. Tighe & Bond provided additional information to MassDEP stating that the detection of cyanide is not an imminent hazard condition since the cyanide was detected between nine and eleven feet below ground surface on a vacant property. MassDEP issued a NOR to Galen Eighty-Four Development LLC. This RTN will be utilized for a forthcoming RAM Plan to manage contaminated soil and groundwater at this property.

Receiving Water Information

Treated groundwater will be discharged via Outfall Numbered 29 to the Charles River. The Charles River (waterbody identification MA72-36), is classified as Class B and is listed as a Category 5 impaired waterbody in the 303(d) Impaired Waterbodies document. There are two approved total maximum daily loading (TMDLs) for the portion of the Charles River by Outfall Numbered 29: pathogens and phosphorus.

A surface water sample (SW-1) was collected from the Charles River within one-quarter mile of the outfall location on May 7, 2020. The surface water sample was submitted to Alpha Analytical Laboratories of Westborough, Massachusetts for analysis of ammonia, hardness, and RGP metals. Temperature and pH were also recorded in the field at the time of sample

collection. Surface water analytical data is summarized in Table 1 of Attachment C, with a complete copy of the laboratory analytical report included in Attachment G.

As outlined in *Appendix V: Dilution Factor and Effluent Limitation Calculations for Massachusetts* of the NPDES RGP, a dilution factor was calculated and approved for usage by the MassDEP. The dilution factor was calculated using the United States Geological Survey (USGS) StreamStats 7Q10 (low-flow statistics) value for the Charles River at Outfall Numbered 29, and the proposed discharge rate of up to 500-gallons per minute (GPM). The applicable dilution factor is 22. Supporting documentation including the MassDEP confirmation dated May 12, 2021 is included in Attachment C.

Source Water Information

Source water for discharging will be dewatered and treated groundwater encountered during excavation activities. Groundwater characterization samples were collected from select groundwater monitoring wells on May 7, 2020. Groundwater wells were selected for sampling based on spatial distance across the Site, and known contamination within those selected wells (MW-101, MW-204 and MW-304) to represent a worst-case scenario for groundwater treatment requirements, as shown on Figure 2 in Attachment B.

Groundwater samples were collected and submitted to Alpha for laboratory analysis of RGP parameters. Laboratory analytical results are summarized in Table 1 of Attachment C, with a complete copy of the laboratory analytical report in Attachment G. Historical groundwater analytical data collected by Tighe & Bond is summarized in Table 1 of Attachment H of reference.

Laboratory analytical results are compared with the RGP Technology Based Effluent Limitations (TBELs) and have been entered into the NOI Water Quality Based Effluent Limitation (WQBEL) excel spreadsheet for calculation.

Potential Contaminants of Concern in Source Water

Based on previous releases identified at the Site, and the RGP groundwater sampling program conducted in May 2020, the following parameters have been identified as Site groundwater contaminants of concern (COCs): petroleum constituents, ammonia, chloride, total suspended solids (TSS), volatile organic compounds (VOCs), and physiologically available cyanide (PAC).

Discharge Information

Dewatered groundwater will be pumped from on-Site excavations into a treatment system as detailed below. Following treatment, effluent will be discharged into catch basins along Galen Street and Water Street for ultimate discharge to the Charles River. Prior to use of the stormwater drainage system, permission for usage will be obtained from the City of Watertown's DPW. Copies of the stormwater drainage system outfalls are shown on Figure 3 in Attachment B. The outfall location (Outfall Numbered 29) is located at 42°21'47.13"N, 71°11'2.18"W.

Treatment System

The proposed treatment system will treat up to 500 GPM and will contain two 18,000-gallon weir tanks, bag filtration and a flow meter/totalizer. Water from the excavation will be pumped out via dewatering sumps and into the weir tanks. From the weir tanks, a centrifugal pump will transfer water to a multi-bag filter skid consisting of two multi-bag filters pumped in parallel such that one bag filter vessel can operate while the other remains on standby. The standby bag filter will be opened for use during bag filter change outs. The treatment system Process Flow Diagram is included as Figure 4 in Attachment B.

Contingency Treatment System

Should it be determined that the treatment system is not operating at a level to achieve effluent limitations, modifications will be made to the treatment system. Modifications may include carbon and/or metals treatment (liquid phase carbon), ion exchange vessels and/or coagulation/flocculation. Contingency chemical additive information has been included for approval in this NOI, as summarized below to allow for implementation as needed during dewatering.

pH Adjustments - if the pH needs to be adjusted to meet effluent limitations either sulfuric acid or sodium hydroxide will be added to the treatment. Sulfuric acid and/or sodium hydroxide will be added in-stream prior to the influent entering the weir tank of the treatment system via a metering pump.

The pH adjustment system includes an automatic metered feed system with a mix tank and feed pumps. The dosing of either sulfuric acid and/or sodium hydroxide will be dependent on the pH of the influent water and the flow rate. The maximum dosage of sulfuric acid and/or sodium hydroxide will not exceed 96-gallons per day. Assuming the system is operating at 500 GPM, the maximum dosage would be 130 milligrams per Liter (mg/L) for either sulfuric acid or sodium hydroxide.

Chemical Aided Settling System - if silt and or sediment requires settling as part of the treatment system to reach effluent limitations, a chemical aided settling system will be added. For example, if metals concentrations in the effluent are too high, a chemical aided settling system could remove additional silt from the effluent, where metals may be adsorbed. The chemical aided settling system would be added in two parts: coagulant and flocculent (Redux E50). Redux E50 would be directly injected into the stream of water.

The coagulant and flocculant will continually dose as dewatering activities occur at a maximum dosage rate of 96-gallons per day. Assuming the system is operating at 500 GPM, the maximum dosage would be 130 mg/L of the Redux E50 additive. With chemical aided settling systems, the detected concentrations in the post bag filter (carryover) typically tend to be less than what is added to the water stream. The lower concentrations are because nearly all the chemicals become incorporated in the sludge and removed from the waste stream as a solid from the weir tank.

Product names, chemical formulas, manufacturer information and Chemical Abstract Services (CAS) Registry numbers are provided on the Safety Data Sheets (SDS) included in Attachment D. If chemical additives are needed as part of the treatment system, only those included in this NOI will be added. If additional chemical additives are needed to meet effluent limitations, a Notice of Change (NOC) will be submitted to EPA prior to use on-Site. Chemical additives used on-Site will be stored in secondary containment overpack drums to prevent accidental spills and reactions.

The addition of the pH adjustments and/or chemical aided settling system will not add any pollutants in concentrations which exceed permit effluent limitations, will not exceed any applicable water quality standard, and will not add any pollutants that would justify the application of permit conditions that are different from or absent in this permit.

Best Management Practices Plan-

R.F. Roach Co., Inc. as the system operator, will develop a Best Management Practices Plan (BMPP) for the groundwater extraction and treatment system for this Site. The BMPP will be developed in accordance with the RGP and will be implemented upon initiation of discharge.

Endangered Species Act Eligibility

Review of the Massachusetts Geographic Information Systems (MassGIS) Priority Resource Map, Figure 2 of Attachment B, shows the Site is not within an Area of Critical Environmental Concern (ACEC) and no Natural Heritage & Endangered Species Program (NHESP) Priority Resource Habitats for Rare Species or Estimated Habitats for Rare Wildlife are present within a half mile downstream of the outfall location.

According to the United States Fish & Wildlife Services (USFWS) Information, Planning and Conservation (IPaC) tool, there are no threatened, endangered or candidate species within the geographic extent of the activity area. Based on this information, and the construction activities involving below grade excavations, the Site qualifies for 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."

A Copy of the USFWS IPaC consultation letter is included in Attachment E.

National Marine Fisheries Services Review

Tighe & Bond has done a review of federally threatened or endangered listed species and critical habitat under the jurisdiction of the National Marine Fisheries Services (NMFS). There are no threatened or endangered species or critical habitat within the geographical extent of the activity area. Based on this information, Tighe & Bond affirms the determination made by EPA that the proposed discharges and discharge related activities are not likely to adversely affect any federally threatened or endangered species under NMFS jurisdiction.

A copy of the Essential Fish Habitat (EFH) mapper for the action area is provided in Attachment E.

National Historic Preservation Act Eligibility Determination

An electronic review of the Massachusetts Cultural Resource Information System database (Attachment D), made available through the Massachusetts Cultural Resource Information System (MACRIS) shows there are no historic properties located at the Site; therefore, the Site qualifies for Criterion A.

Conclusion

The proposed treatment system has been designed to reduce the levels of associated COCs to below the applicable effluent limitations. Treated effluent will be sampled at startup and in accordance with permit requirements and submitted for analyses specified in the authorization letter. Additionally, the flowrate, pH and turbidity levels will be monitored in the field and recorded in accordance with RGP requirements.

If you need any additional information or assistance on this submittal, please do not hesitate to contact Bryan Gammons at bgammons@tighebond.com.

Very truly yours,

TIGHE & BOND, INC.

Colleen E. Brothers
Project Environmental Scientist

Bryan O. Gammons
Senior Environmental Scientist

Enclosures

Attachment A: Notice of Intent Fillable Form
Attachment B: Figure 1: Site Plan
Figure 1A: Release History Site Plan
Figure 2: Priority Resource Map
Figure 3: City of Watertown Drainage Plans to Outfall Location
Figure 4: Process Flow Diagram
Attachment C: Table 1: Groundwater and Surface Water Analytical Summary
Dilution Factor Confirmation and StreamStats Report
"The 303(d) List- Waters Requiring a TMDL" Charles River Page
Attachment D: Safety Data Sheets for Chemical Additives
Attachment E: USFWS IPac Letter and NHESP Mapping
Attachment F: Massachusetts Cultural Resources Information System Report
Attachment G: Laboratory Analytical Report
Attachment H: Tighe & Bond Historical Groundwater Analytical Results

J:\B\B0849 Boston Development Group\B0849-004 Galen Street\RGP\NOI Cover Letter .docx

ATTACHMENT A

NOI FILLABLE 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:
66-86 Galen Street</td><td colspan="3">Site address: 66-86 Galen Street
Street:</td></tr>
<tr><td>City: Watertown</td><td>State: MA</td><td>Zip: 02472</td></tr>
<tr><td rowspan="4">2. Site owner
Galen Street Development LLC and 51 Water Street LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Jodie Zussman</td></tr>
<tr><td colspan="2">Telephone: 617-332-6400</td><td>Email: jzussman@bdg1.com</td></tr>
<tr><td colspan="3">Mailing address: 93 Union Street, Suite 315
Street:</td></tr>
<tr><td>City: Newton Center</td><td>State: MA</td><td>Zip: 02459</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
R.F Roach Company Inc.</td><td colspan="3">Contact Person: Richard Roach</td></tr>
<tr><td colspan="2">Telephone: 781-331-9988</td><td>Email: rroach3@rfroach.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 47 Winter Street</td></tr>
<tr><td>City: Weymouth</td><td>State: MA</td><td>Zip: 02188</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:

NPDES permit is (check all that apply: ☐ RGP ☐ DGP ☐ CGP
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
See cover letter for RTNs
☐ 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):
Charles River	MA72-36	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: Wetland resource areas by Outfall No. 29

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. Category 5, see Attachment C, Final TMDL available for pathogens and phosphorus

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.	23.8 cfs
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.	22

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: May 12, 2021 see Attachment C for email correspondence

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

C. Source water information:

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

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

2. Source water contaminants: Ammonia, chloride, TRC, TSS, cyanide, petroleum constituents, VOCs	
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 No. 29	Outfall location(s): (Latitude, Longitude) 42°21'47.13"N, 71°11'2.18"W
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Via City of Watertown Stormwater Drainage System - Catch basins along Galen Street or Water Street ☐ 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: Permission will be obtained prior to discharging 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): June 2021 to March 2022 Indicate if the discharge is expected to occur over a duration of: ■ less than 12 months ☐ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics	**Metals below reported as total metals, dissolved metals summarized in Table 1**								
Ammonia		✔	3	4500NH3-	75	0.325	133	Report mg/L	---
Chloride		✔	3	300		726,000	383,333	Report µg/l	---
Total Residual Chlorine	✔		3	4500CL-D	20	<20	0	0.2 mg/L	
Total Suspended Solids		✔	3	2540D-97		3,300	1,437,000	30 mg/L	---
Antimony	✔		3	200.8	4	<4	0	206 µg/L	
Arsenic		✔	3	200.8	1	13.07	8.75	104 µg/L	
Cadmium		✔	3	200.8	0.20	0.28	0.20	10.2 µg/L	
Chromium III		✔	3	Calc.		51	36	323 µg/L	
Chromium VI	✔		3	7196A	10	<10	0	323 µg/L	
Copper		✔	3	200.8		64.74	38	242 µg/L	
Iron		✔	3	200.8		34,800	24,463	5,000 µg/L	
Lead		✔	3	200.8		40.02	27	160 µg/L	
Mercury	✔		3	245.1	0.20	<0.20	0	0.739 µg/L	
Nickel		✔	3	200.8	2	36.52	25	1,450 µg/L	
Selenium	✔		3	200.8	5	<5	0	235.8 µg/L	
Silver		✔	3	200.8	0.40	0.81	0.4	35.1 µg/L	
Zinc		✔	3	200.8		98.13	81.6	420 µg/L	
Cyanide		✔	3	4500CN-C	5	843	285	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX		✔	3	624.1	1	3.9	1.5	100 µg/L	---
Benzene	✔		3	624.1	1	<1	0	5.0 µg/L	---
1,4 Dioxane	✔		3	624.1	50	<50	0	200 µg/L	---
Acetone	✔		3	624.1	10	<50	0	7.97 mg/L	---
Phenol	✔		3	420.1	30	<50	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	✔		3	624.1	1	<1	0	4.4 µg/L	
1,2 Dichlorobenzene	✔		3	624.1	5	<5	0	600 µg/L	---
1,3 Dichlorobenzene	✔		3	624.1	5	<5	0	320 µg/L	---
1,4 Dichlorobenzene	✔		3	624.1	5	<5	0	5.0 µg/L	---
Total dichlorobenzene	✔		3	624.1	5	<5	0	763 µg/L in NH	---
1,1 Dichloroethane	✔		3	624.1	1.5	<1.5	0	70 µg/L	---
1,2 Dichloroethane	✔		3	624.1	1.5	<1.5	0	5.0 µg/L	---
1,1 Dichloroethylene	✔		3	624.1	1	<1	0	3.2 µg/L	---
Ethylene Dibromide	✔		3	504.1	0.01	<0.01	0	0.05 µg/L	---
Methylene Chloride	✔		3	624.1	1	<1	0	4.6 µg/L	---
1,1,1 Trichloroethane	✔		3	624.1	1.5	<1.5	0	200 µg/L	---
1,1,2 Trichloroethane	✔		3	624.1	1.5	<1.5	0	5.0 µg/L	---
Trichloroethylene			3	624.1	1.0	4.0	1.6	5.0 µg/L	---
Tetrachloroethylene		✔	3	624.1	1	<1	0	5.0 µg/L	
cis-1,2 Dichloroethylene		✔	3	624.1	1	9.2	3.4	70 µg/L	---
Vinyl Chloride	✔		3	624.1	1	<1	0	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		3	625.1	5	<5	0	190 µg/L	
Diethylhexyl phthalate	✔		3	625.1	2.2	<2.2	0	101 µg/L	
Total Group I PAHs	✔		3	625.1	0.100	0.187	0	1.0 µg/L	---
Benzo(a)anthracene	✔		3	625.1	0.100	0.110	0	As Total PAHs	
Benzo(a)pyrene	✔		3	625.1	0.100	<0.100	0		
Benzo(b)fluoranthene	✔		3	625.1	0.100	<0.100	0		
Benzo(k)fluoranthene	✔		3	625.1	0.100	<0.100	0		
Chrysene	✔		3	625.1	0.100	<0.100	0		
Dibenzo(a,h)anthracene	✔		3	625.1	0.100	<0.100	0		
Indeno(1,2,3-cd)pyrene	✔		3	625.1	0.100	<0.100	0		

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	✔		3	625.1	0.100	<0.100	0	100 µg/L	---
Naphthalene		✔	3	625.1	0.100	3.75	1.3	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		3	608.3	0.25	<0.25	0	0.000064 µg/L	---
Pentachlorophenol	✔		3	608.3	<0.100	<0.100	0	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons	✔		3	1664A	4000	<4000	0	5.0 mg/L	---
Ethanol	✔		-	-	-	-	-	Report mg/L	---
Methyl-tert-Butyl Ether		✔	3	624.1	20	490	18	70 µg/L	
tert-Butyl Alcohol	✔		3	624.1	100	<100	0	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether		✔	3	624.1	20	34	170	90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									

E. Treatment system information

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

☐ Adsorption/Absorption ☐ Advanced Oxidation Processes ☐ Air Stripping ☐ Granulated Activated Carbon ("GAC")/Liquid Phase Carbon Adsorption

☐ Ion Exchange ☐ Precipitation/Coagulation/Flocculation ■ Separation/Filtration ☐ Other; if so, specify:

Contingency treatment system if changes are needed to meet effluent limits include liquid phase carbon adsorption, ion exchange and coagulation/flocculation- see narrative for more details

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

The proposed treatment system will treat up to 500 GPM and will contain two 18,000-gallon weir tanks, bag filtration and a flow meter/totalizer. Water from the excavation will be pumped out via dewatering sumps and into the weir tanks. From the weir tanks, a centrifugal pump will transfer water to a multi-bag filter skid consisting of two multi-bag filters pumped in parallel such that one bag filter vessel can operate while the other remains on standby. The standby bag filter will be opened for use during bag filter change outs. The treatment system Process Flow Diagram is included as Figure 4 in Attachment B.

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: Bag Filters Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	300GPM
Provide the proposed maximum effluent flow in gpm.	500 GPM
Provide the average effluent flow in gpm.	300 GPM
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

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

Narrative and attachments included.

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:	R.F. Roach Co., Inc. as the system operator, will develop a Best Management Practices Plan (BMPP) for the groundwater extraction and treatment system for this Site. The BMPP will be developed in accordance with the RGP and will be implemented upon initiation of discharge.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: Richard Roach III	Date: May 24, 2021
Print Name and Title: Richard Roach III, Project Manager of R.F. Roach Company Inc.	

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:	R.F. Roach Co., Inc. as the system operator, will develop a Best Management Practices Plan (BMPP) for the groundwater extraction and treatment system for this Site. The BMPP will be developed in accordance with the RGP and will be implemented upon initiation of discharge.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ☐ No ☐ NA ■
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature:	Date: 05/24/21
Print Name and Title: Michael Cantalupa, Chief of Development The Davis Companies Authorized signer, Galen Street Development, LLC and 51 Water Street, LLC	

ATTACHMENT B

FIGURES

WATER STREET

COLONIAL CAR DEALERSHIP
66 GALEN STREET

70 GALEN STREET

VALVOLINE
78 GALEN STREET

51 WATER STREET

RESIDENCES
84 & 88 GALEN STREET

GALEN STREET

B-101 B-7 B-6 B-102 B-16 (OW) MW-6 B-2 B-1 B-14 B-13 B-12 B-104 B-103 B-11 B-15 (OW) MW-5 B-106 B-10 B-201 B-105 B-9 B-8 MW-4 MW-3 B-107 MW-1 B-5 B-4 B-3 B-108 MW-2 B-202 B-301 B-302 B-303 B-304 B-305 B-306 B-204 B-205 B-203 B-307 B-308 B-207 B-309 B-206 B-310 B-311 B-312

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- EASEMENT
- EDGE OF PAVEMENT
- CURB
- CONCRETE/SIDEWALK
- RETAINING WALL
- CHAIN LINK FENCE
- GUARDRAIL
- CONTOUR
- SS — SANITARY SEWER PIPE
- STORM DRAIN PIPE
- CATCH BASIN
- W — PUBLIC WATER PIPE
- OE — OVERHEAD ELECTRICAL LINES
- E — UNDERGROUND ELECTRICAL LINES
- G — NATURAL GAS LINE
- T — TELEPHONE/DATA LINES

- UTILITY POLE
- UTILITY MANHOLE
- EXISTING BUILDING
- APPROXIMATE GROUNDWATER MONITORING WELL LOCATIONS

APPROXIMATE SOIL BORING LOCATIONS

- B-200, B-400, B-306 — TIGHE & BOND (2019 & 2020)
- B-100 — BRIGGS ASSOC. (1996)
- B-1 — GZA (1997)

NOTE

1. BASE MAP FROM "ALTA/NSPS LAND TITLE SURVEY" FROM VHB DATED AUGUST 8 2019 AND FIELD MEASUREMENTS.

0 40' 80'

SCALE: 1" = 40'

66-80 GALEN STREET
WATERTOWN, MASSACHUSETTS

SOIL BORING LOCATION MAP

DATE:	01/22/2020
SCALE:	1" = 40'
FIGURE:	1

Tighe&Bond
Engineers | Environmental Specialists

Jan 22, 2020-1:53pm Plotted By: JLL
Tighe & Bond, Inc. J:\B0849 Boston Development Group\B0849-004 Galen Street\Drawings_Figures\AutoCAD\Environmental\B-0849-004-XD-2.dwg

WATER STREET

N

FORMER COLONIAL
CAR DEALERSHIP
66 GALEN STREET
RTNS:
3-14153 (1997)
3-36310 (2020)

51 WATER STREET
RTN:
3-0502 (1987)

FORMER GAS STATION
70 GALEN STREET
RTNS:
3-23191 (2003),
3-27597 (2008)
3-34542 (2017),
3-34570 (2017)

FORMER VALVOLINE
78 GALEN STREET
RTN:
3-36309 (2020)

FORMER RESIDENCES
84 & 88 GALEN STREET
RTN:
3-36084 (2020)

PROPOSED BUILDING
AND PARKING GARAGE

LIMIT OF P-1 BELOW

LIMIT OF P-1 & P-2 BELOW

GALEN STREET

STORMTECH SC-740
140 CHAMBERS
CHAMBER INV = 8.10'
STONE INV = 6.60'
ESTIMATED GROUNDWATER = 4.60'
VOLUME = 6,585 CF

STORMTECH SC-740
86 CHAMBERS
CHAMBER INV = 6.90'
STONE INV = 6.40'
ESTIMATED GROUNDWATER = 4.40'
VOLUME = 3,859 CF

LEGEND

- PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- EASEMENT
- EDGE OF PAVEMENT
- CURB
- CONCRETE/SIDEWALK
- RETAINING WALL
- CHAIN LINK FENCE
- GUARDRAIL
- CONTOUR
- CATCH BASIN
- UTILITY POLE
- EXISTING BUILDING

PROPOSED LEGEND

- PROPOSED EDGE OF PAVEMENT
- PROPOSED CURB
- PROPOSED SIDEWALK
- PROPOSED STORM WATER BASIN
- PROPOSED STORM WATER PIPE
- PROPOSED STORM WATER UNDER DRAIN
- PROPOSED SURFACE CONTOUR
- PROPOSED BUILDING

NOTE

1. BASE MAP FROM "ALTA/NSPS LAND TITLE SURVEY" FROM VHB DATED AUGUST 8 2019 AND FIELD MEASUREMENTS.

00 40' 80'

SCALE: 1" = 40'

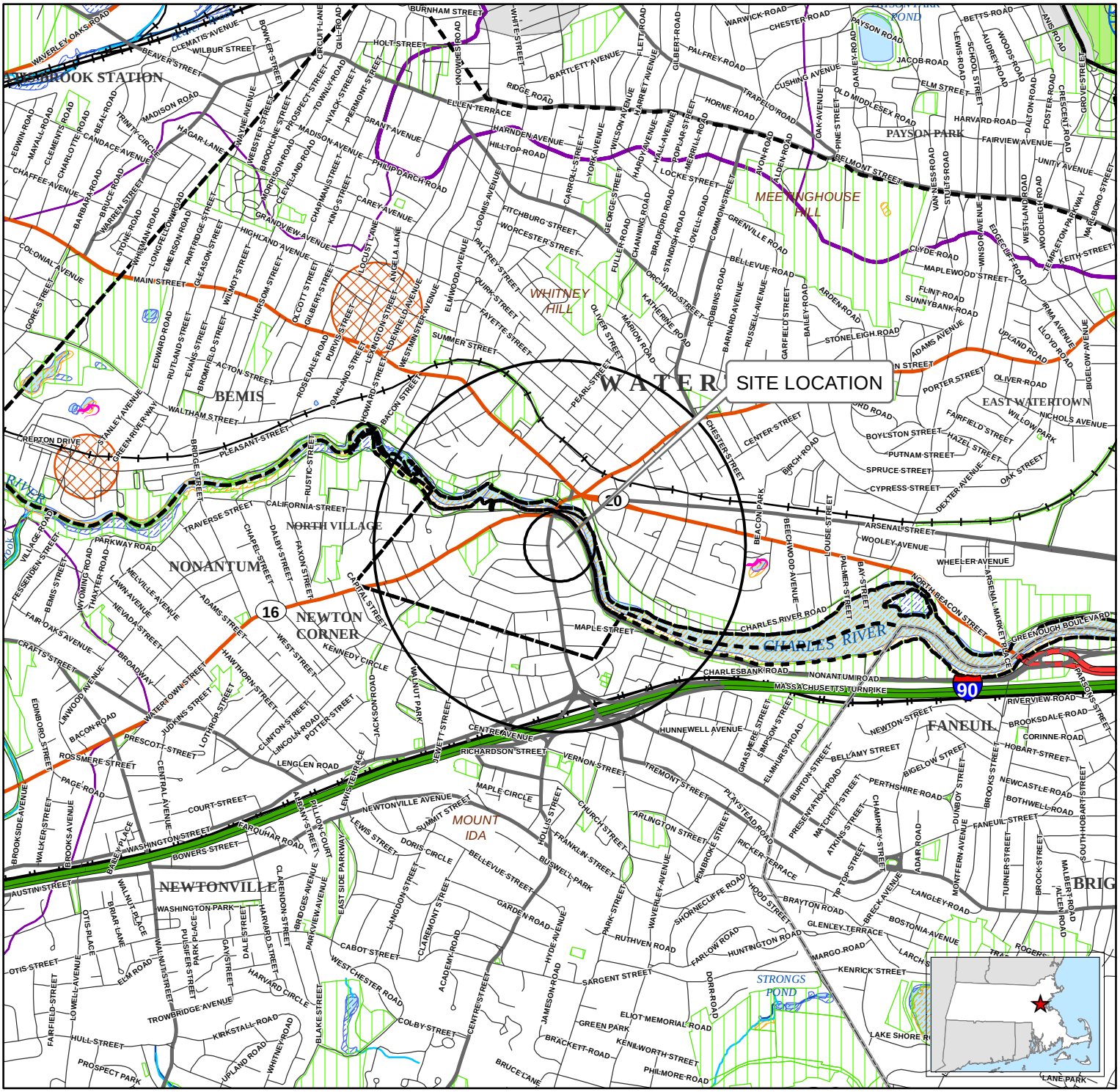
66-88 GALEN STREET
WATERTOWN, MASSACHUSETTS

LOT BOUNDARIES AND RTN SUMMARY

DATE: 11/12/2020
SCALE: 1" = 40'
FIGURE: 1A

Tighe&Bond

Nov 12, 2020-3:46pm Plotted By: JLL
Tighe & Bond, Inc. J:\B\B0849 Boston Development Group\B0849-004 Galen Street\Drawings_Figures\AutoCAD\Environmental\B-0849-004-XD.dwg



Legend

- NHESP Certified Vernal Pools
- NHESP Potential Vernal Pools
- Non-Landfill Solid Waste Sites
- Community Public Water Supply - Surface Water
- Community Public Water Supply - Groundwater
- Non-Community Non-Transient Public Water Supply
- Non-Community Transient Public Water Supply
- Limited Access Highway
- Multi-Lane Highway, NOT Limited Access
- Other Numbered Highway
- Major Road - Collector
- Minor Street or Road
- Aqueducts
- Hydrologic Connections
- Stream/Intermittent Stream
- Powerline
- Pipeline
- Track or Trail
- Trains
- Public Surface Water Supply Protection Area (Zone A)
- DEP Approved Wellhead Protection Area (Zone I)
- DEP Approved Wellhead Protection Area (Zone II)
- DEP Interim Wellhead Protection Area (IWPA)
- Protected and Recreational Open Space
- Solid Waste Landfill
- Area of Critical Environmental Concern (ACEC)
- NHESP Priority Habitats for Rare Species
- NHESP Estimated Habitats for Rare Wildlife
- EPA Designated Sole Source Aquifer
- Major Drainage Basin
- Sub Drainage Basin
- MassDEP Open Water
- MassDEP Inland Wetlands
- MassDEP Coastal Wetlands
- MassDEP Not Interpreted Wetlands
- Public Surface Water Supply (PSWS)
- Water Bodies
- Non-Potential Drinking Water Source Area - High Yield
- Non-Potential Drinking Water Source Area - Medium Yield
- Potentially Productive Medium Yield Aquifer
- Potentially Productive High Yield Aquifer
- County Boundary
- Town Boundary

1:24,000

0 1,000 2,000

Feet

N

FIGURE 2
PRIORITY RESOURCES

66 Galen Street
Watertown, Massachusetts

Data source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology
Circles indicate 500-foot and half-mile radii.
Data valid as of January 2019.

January 2019

Tighe&Bond
Engineers | Environmental Specialists

G:\GIS\MA\SiteLocus\Watertown\MassGIS_66GalenStreet.mxd [Exported By: PJin, 1/24/2019, 4:33:47 PM]

B-0849

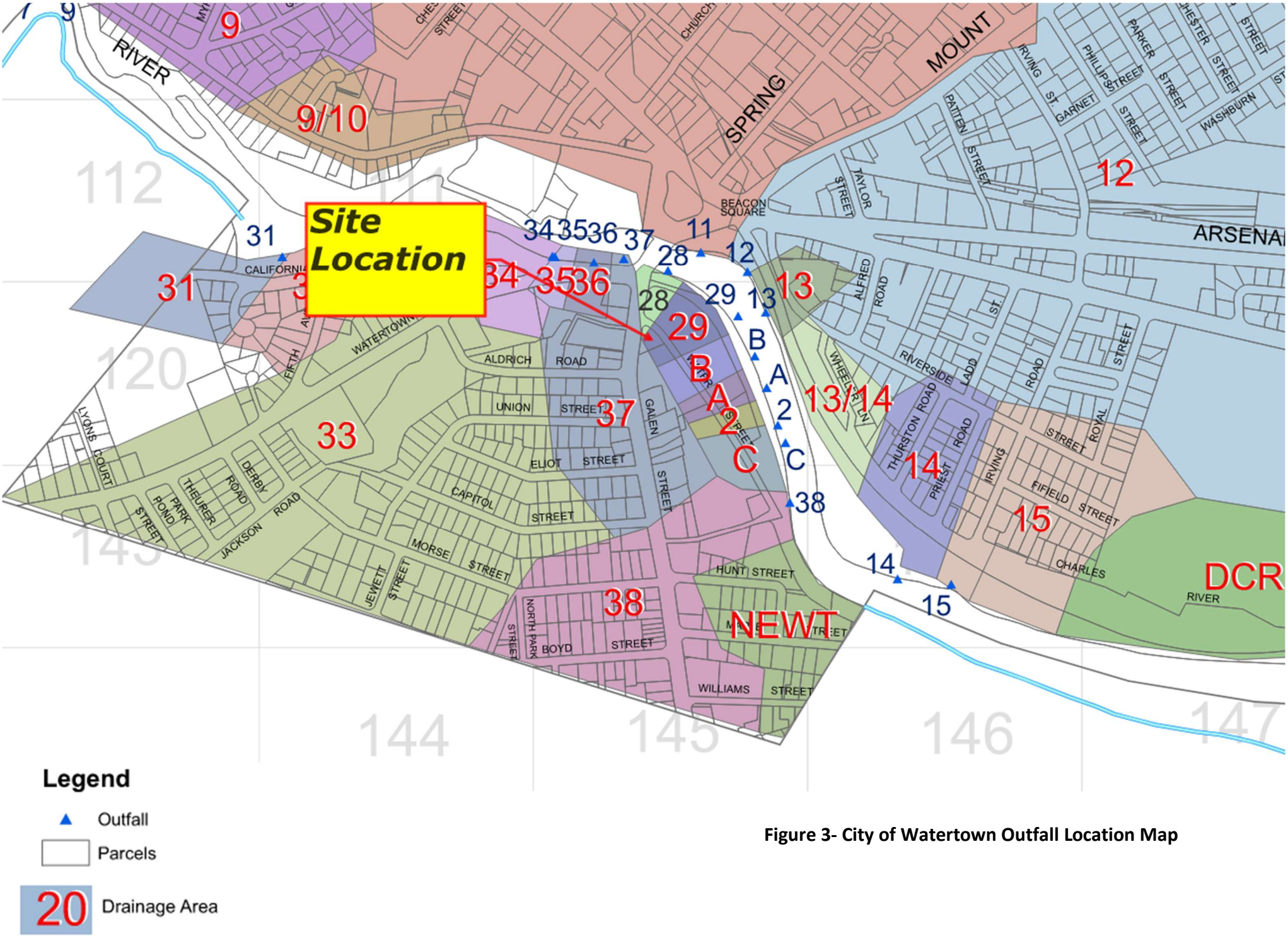
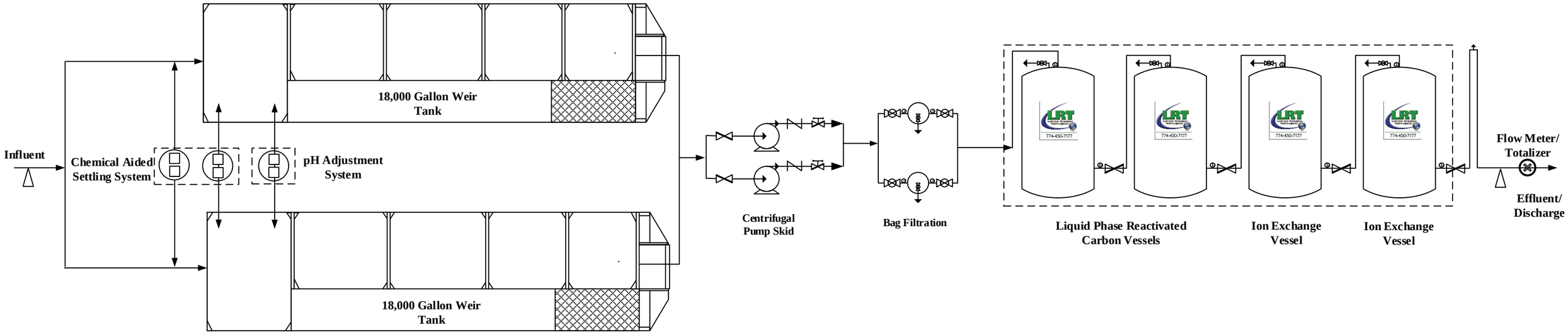


Figure 3- City of Watertown Outfall Location Map



Key:

- Piping/Hose
- Butterfly Valve
- Pressure Gauge
- Ball Valve
- Sample Port
- Check Valve
- Gate Valve
- Contingency

Notes:

1.) Figure is not to scale
2.) System rated for 500 gpm

LRT Lockwood Remediation Technologies LLC	**Lockwood Remediation Technologies, LLC** **89 Crawford Street** **Leominster, MA 01453** **Office: 774-450-7177** **DESIGNED BY:** LRT **DRAWN BY:** JHJ **CHECKED BY:** **DATE:**	**Water Treatment System Schematic**	**66-80 Galen Street** **Watertown, MA**	**PROJECT No.** 2-2190	**FIGURE No.** 4

ATTACHMENT C

TABLES AND RECEIVING WATER INFORMATION

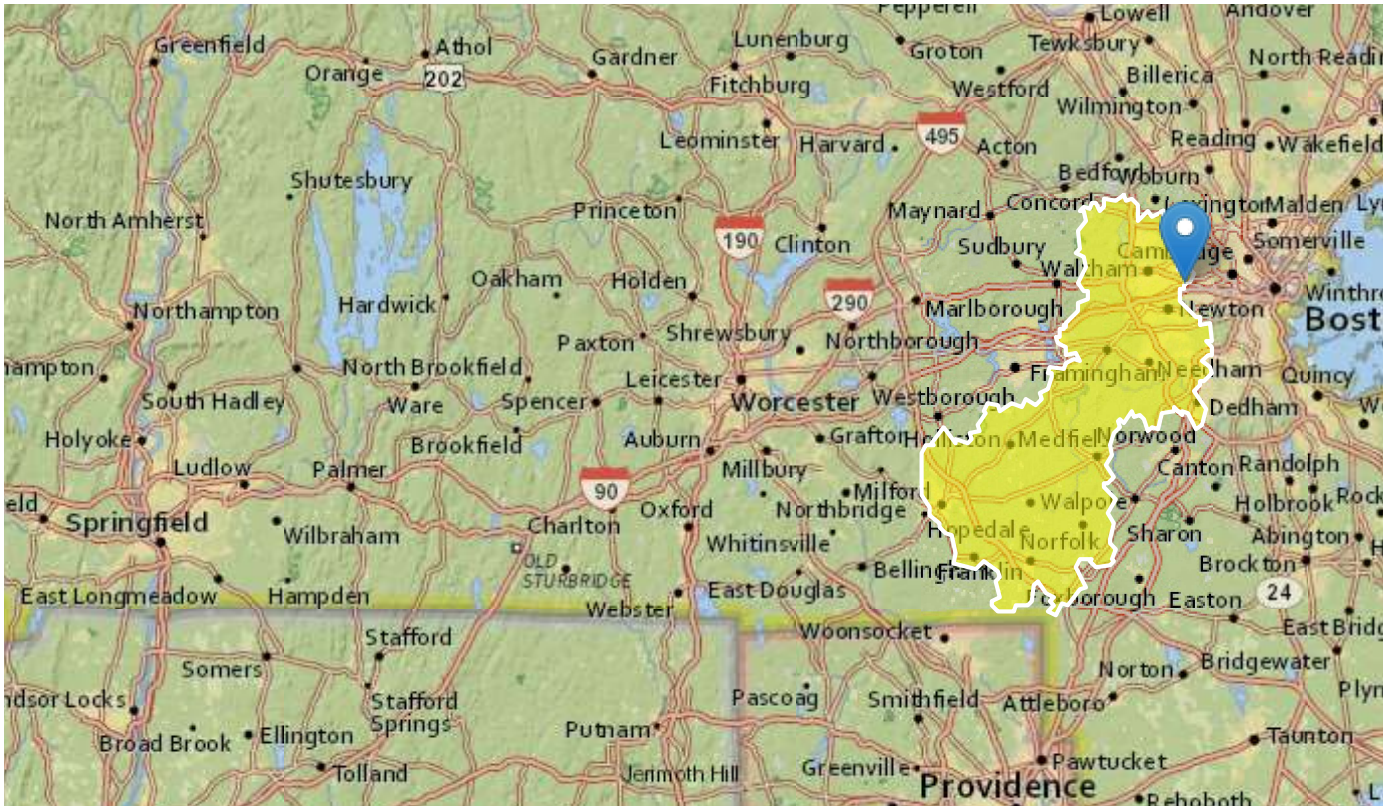
TABLE 1
Summary of Surface and Groundwater Analytical Results
Galen Street
Watertown, Massachusetts

Sample ID Sample Date Lab Sample ID	Analytical Method	SW-1 5/7/2020 L2018950-01	MW-101 5/7/2020 L2018950-02	MW-304 5/7/2020 L2018950-03	MW-204 5/7/2020 L2018950-04	GW Maximum
VOCs (ug/l)						
Acetone	624.1	-	<10	<10	<10	<
Benzene	624.1	-	<1.0	<1.0	<1.0	<
Carbon tetrachloride	624.1	-	<1.0	<1.0	<1.0	<
Dichlorobenzene, 1,2- (o-DCB)	624.1	-	<5.0	<5.0	<5.0	<
Dichlorobenzene, 1,3-(m-DCB)	624.1	-	<5.0	<5.0	<5.0	<
Dichlorobenzene, 1,4- (p-DCB)	624.1	-	<5.0	<5.0	<5.0	<
Dichloroethane, 1,1-	624.1	-	<1.5	<1.5	<1.5	<
Dichloroethane, 1,2-	624.1	-	<1.5	<1.5	<1.5	<
Dichloroethylene, 1,1-	624.1	-	<1.0	<1.0	<1.0	<
Dichloroethylene, cis-1,2-	624.1	-	<1.0	9.2	<1.0	9.2
Dioxane, 1,4-	624.1-SIM	-	<50	<50	<50	<
Ethylbenzene	624.1	-	<1.0	2.2	<1.0	2.2
Ethylene dibromide (EDB)	504.1	-	<0.01	<0.01	<0.01	<
Methyl Tert-Butyl Ether (MTBE)	624.1	-	490 E	<10	<10	490
Methylene Chloride (Dichloromethane)	624.1	-	<1.0	<1.0	<1.0	<
tert Butyl Alcohol	624.1	-	<100	<100	<100	<
tert-Amyl Methyl Ether (TAME)	624.1	-	34	<20	<20	34
Tetrachloroethylene (PCE)	624.1	-	<1.0	<1.0	<1.0	<
Toluene	624.1	-	<1.0	<1.0	<1.0	<
Trichloroethane, 1,1,1-	624.1	-	<2.0	<2.0	<2.0	<
Trichloroethane, 1,1,2-	624.1	-	<1.5	<1.5	<1.5	<
Trichloroethylene (TCE)	624.1	-	<1.0	4.0	<1.0	4.0
Vinyl chloride	624.1	-	<1.0	<1.0	<1.0	<
Xylene (Total)	624.1	-	<1.0	1.7	<1.0	1.7
Xylene, m,p-	624.1	-	<2.0	<2.0	<2.0	<
Xylene, o-	624.1	-	<1.0	1.7	<1.0	1.7
VOCs (Total)	624.1	-	524	19	ND	524
SVOCs (ug/l)						
Acenaphthene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Acenaphthylene	625.1-SIM	-	<0.100	0.187	<0.100	0.187
Anthracene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Benzo(a)anthracene	625.1-SIM	-	<0.100	0.110	<0.100	0.110
Benzo(a)pyrene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Benzo(b)fluoranthene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Benzo(g,h,i)perylene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Benzo(k)fluoranthene	625.1-SIM	-	<0.100	<0.100	<0.100	<
bis(2-Ethylhexyl)phthalate	625.1	-	<2.20	<2.20	<2.20	<
Butyl benzyl phthalate	625.1	-	<5.00	<5.00	<5.00	<
Chrysene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Dibenz(a,h)anthracene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Diethyl phthalate	625.1	-	<5.00	<5.00	<5.00	<
Dimethyl phthalate	625.1	-	<5.00	<5.00	<5.00	<
Di-N-Butyl phthalate	625.1	-	<5.00	<5.00	<5.00	<
Di-N-Octyl phthalate	625.1	-	<5.00	<5.00	<5.00	<
Fluoranthene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Fluorene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Indeno(1,2,3-cd)pyrene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Naphthalene	625.1-SIM	-	<0.100	3.75	0.114	3.75
Pentachlorophenol	625.1-SIM	-	<1.00	<1.00	<1.00	<
Phenanthrene	625.1-SIM	-	<0.100	<0.100	<0.100	<
Pyrene	625.1-SIM	-	<0.100	0.131	<0.100	0.131
SVOCs (Total)	625.1-SIM	-	ND	4.18	0.114	4.18
Total Petroleum Hydrocarbons (ug/L)	1664A	-	<4000	<4000	<4000	<
General Chemistry/Misc. (ug/L)						
Phenolics (Total)	420.1	-	<30	<30	<30	<
Chlorine (Total Residual)	4500CL-D	-	<20	<20	<20	<
Nitrogen, Ammonia	4500NH3-BH	<75	<75	325	<75	325
Hardness (as CaCO3)	200.8	48400	-	-	-	-
Chloride	300	-	172,000	726,000	252,000	726,000
Solids (Total Suspended)	2540D-97	-	51,000	960,000	3,300,000	3,300,000
Cyanide (Physiologically Available)	4500CN-CE	-	<5	843	8	843
PCBs (ug/l)						
Aroclor-1016	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1221	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1232	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1242	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1248	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1254	608.3	-	<0.25	<0.25	<0.25	<
Aroclor-1260	608.3	-	<0.2	<0.2	<0.2	<
PCBs (Total)	608.3	-	ND	ND	ND	<
Total Metals (mg/l)						
Antimony	200.8	<4.00	<4.00	<4.00	<4.00	<
Arsenic	200.8	<1.00	4.08	13.07	9.09	13.07
Cadmium	200.8	<0.20	<0.20	<0.20	0.28	0.28
Chromium (Total)	200.8	<1.00	14.23	51.49	44.80	51.49
Chromium (VI)	7196A	-	<10	<10	<10	<
Chromium (III)	Calculation	-	14	51	44	51
Copper	200.8	2.04	26.82	23.25	64.74	64.74
Iron	200.8	460	8,190	34,800	30,400	34,800
Lead	200.8	1.33	22.76	40.02	17.77	40.02
Mercury	245.1	<0.20	<0.20	<0.20	<0.20	<
Nickel	200.8	<2.00	8.67	30.79	36.52	36.52
Selenium	200.8	<5.00	<5.00	<5.00	<5.00	<
Silver	200.8	<0.40	<0.40	<0.40	0.81	0.81
Zinc	200.8	10.57	52.94	93.82	98.13	98.13
Dissolved Metals (ug/l)						
Antimony	200.8	-	<4.00	<4.00	<4.00	<
Arsenic	200.8	-	<1.00	5.00	<1.00	5.00
Cadmium	200.8	-	<0.20	<0.20	<0.20	<
Chromium (Total)	200.8	-	<1.00	23.4	<1.00	23.4
Copper	200.8		2.2	9.9	12.6	12.6
Iron	200.8	-	190	12,600	188	12,600
Lead	200.8	-	<1.00	30.4	<1.00	30.4
Mercury	245.1	-	<0.20	0.23	<0.20	0.23
Nickel	200.8	-	<2.00	11.2	5.80	11.2
Selenium	200.8	-	<5.00	<5.00	<5.00	<
Silver	200.8	-	<0.40	<0.40	<0.40	<
Zinc	200.8	-	<10.0	33.0	<10.0	33.0

< xx indicates compound was not reported above laboratory limits.
"-"- Sample not analyzed
Results presented in micrograms per liter (ug/L)
VOCs- Volatile Organic Compounds
PCBs- Polychlorinated Biphenyls
E- indicates laboratory results was estimated. See lab report for Details

StreamStats Report

Region ID: MA
Workspace ID: MA20210510145627687000
Clicked Point (Latitude, Longitude): 42.36443, -71.18454
Time: 2021-05-10 10:56:44 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	274	square miles
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.328	percent
DRFTPERSTR	Area of stratified drift per unit of stream length	0.23	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless

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

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	274	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.328	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.23	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

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

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

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

Statistic	Value	Unit
7 Day 2 Year Low Flow	47.8	ft^3/s
7 Day 10 Year Low Flow	23.8	ft^3/s

Low-Flow Statistics Citations

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

Application Version: 4.5.3
StreamStats Services Version: 1.2.22
NSS Services Version: 2.1.2

Colleen Brothers

From: Keohane, Kathleen (DEP) <Kathleen.Keohane@mass.gov>
Sent: Wednesday, May 12, 2021 10:55 AM
To: Bryan Gammons; Colleen Brothers
Cc: Vakalopoulos, Catherine (DEP); Ruan, Xiaodan (DEP)
Subject: RE: 66 Galen Street - RGP Dilution Factor Calcs

[Caution - External Sender]

The 7Q10 of 23.8 cfs (15 MGD) and the dilution factor calculation of 22 using a design flow of 500 gpm (0.72 MGD) for the proposed discharge to the Charles River Outfall 29 from 66 Galen St, Watertown to the Charles River is correct.

Here is water quality information to assist you with filling out the NOI (some of which you already have):

Waterbody and ID: Charles River (MA72-36)
Classification: B, Warm water fishery
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 "MA72-36" to see the causes of impairments.
TMDLs: There are approved TMDLs (pathogens and phosphorus) for this segment.

As you may know, 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 ePLACE. Instructions on how to apply are located here: https://www.mass.gov/how-to/wm-15-npdes-general-permit-notice-of-intent and information on how to get ePLACE technical assistance is available on the ePLACE Portal webpage: https://eplace.eea.mass.gov/citizenaccess/.

Please let me know if you have any questions.

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Sent: Wednesday, May 12, 2021 8:46 AM
To: Keohane, Kathleen (DEP) <Kathleen.Keohane@mass.gov>
Subject: Re: 66 Galen Street - RGP Dilution Factor Calcs

No problem, thanks for the help!

From: "Keohane, Kathleen (DEP)" <Kathleen.Keohane@mass.gov>
Date: Wednesday, May 12, 2021 at 8:45 AM
To: "Vakalopoulos, Catherine (DEP)" <catherine.vakalopoulos@mass.gov>
Cc: "BGammons@TigheBond.com" <BGammons@TigheBond.com>, "CBrothers@TigheBond.com" <CBrothers@TigheBond.com>
Subject: RE: 66 Galen Street - RGP Dilution Factor Calcs

I was out yesterday afternoon and missed this, I will do today.

From: Vakalopoulos, Catherine (DEP) <catherine.vakalopoulos@mass.gov>
Sent: Tuesday, May 11, 2021 11:07 AM

ATTACHMENT D

SAFETY DATA SHEETS

SAFETY DATA SHEET

M32415 - ANSI - EN

CAUSTIC SODA LIQUID (ALL GRADES)

SDS No.: M32415 **SDS Revision Date:** 13-Jan-2016

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050 1-800-752-5151
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (USA); CANUTEC (Canada): 1-613-996-6666; CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700 (55) 55959542 (Mexico)
Product Identifier:	**CAUSTIC SODA LIQUID (ALL GRADES)**
Trade Name:	Caustic Soda Diaphragm Grade 10%, 15%, 18%, 20%, 25%, 30%, 35%, 40%, 50%, Caustic Soda Membrane 6%, 18%, 20%, 25%, 30%, 48%, 50%, 50% Caustic Soda Membrane OS, 50% Caustic Soda Diaphragm OS, Caustic Soda Low Salt 50%, Membrane Blended, 50% Caustic Soda Diaphragm (West Coast), Membrane Cell Liquor
Synonyms:	Sodium hydroxide solution, Liquid Caustic, Lye Solution, Caustic, Lye, Soda Lye, Secondary Caustic Soda Liquids
Product Use:	Metal finishing, Cleaner, Process chemical, Petroleum Industry
Uses Advised Against:	None identified

SECTION 2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

****

EMERGENCY OVERVIEW:

Color: Colorless to slightly colored
Physical State: Liquid
Appearance: Clear to opaque
Odor: Odorless

Signal Word: **DANGER**

MAJOR HEALTH HAZARDS: CORROSIVE. CAUSES SERIOUS EYE DAMAGE. CAUSES SEVERE SKIN BURNS AND EYE DAMAGE. MAY CAUSE RESPIRATORY IRRITATION. EFFECTS OF CONTACT OR INHALATION MAY BE DELAYED.

PHYSICAL HAZARDS: MAY BE CORROSIVE TO METALS. Mixing with water, acid or incompatible materials may cause splattering and release of heat. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated.

ECOLOGICAL HAZARDS: This material has exhibited moderate toxicity to aquatic organisms. Keep out of water supplies and sewers. This material is alkaline and may raise the pH of surface waters.

PRECAUTIONARY STATEMENTS: Do not get in eyes, on skin, or on clothing. Wear eye protection, face protection, protective gloves. Do not breathe mist, vapors, or spray. Do not ingest. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling- exposure can cause burns which are not immediately painful or visible.

ADDITIONAL HAZARD INFORMATION: This material is corrosive. It may cause severe burns and permanent damage to any tissue with which it comes into contact. Toxicity may be delayed, and may not be readily visible. To treat contacted tissue, flush with water to dilute. There is no specific antidote. Significant exposures must be referred for medical attention immediately.

****

GHS CLASSIFICATION:

GHS: PHYSICAL HAZARDS:	Corrosive to Metals Mixing with water may cause splattering and release of heat
GHS: CONTACT HAZARD - SKIN:	Category 1B - Causes severe skin burns and eye damage.
GHS: CONTACT HAZARD - EYE:	Category 1 - Causes serious eye damage

GHS: TARGET ORGAN TOXICITY (SINGLE EXPOSURE):	Category 3 - May cause respiratory irritation
GHS: CARCINOGENICITY:	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.
GHS: HAZARDOUS TO AQUATIC ENVIRONMENT - ACUTE HAZARD:	Category 3 - Harmful to aquatic life

UNKNOWN ACUTE TOXICITY: 100% of the mixture consists of ingredient(s) of unknown toxicity. There is no acute toxicity data available for this product.

GHS SYMBOL: Corrosive

GHS SIGNAL WORD: **DANGER**

GHS HAZARD STATEMENTS:

GHS - Physical Hazard Statement(s)
• May be corrosive to metals

GHS - Health Hazard Statement(s)
• Causes serious eye damage
• Causes severe skin burns and eye damage
• May cause respiratory irritation

GHS - Precautionary Statement(s) - Prevention
• Do not breathe mist, vapors, or spray
• Wear protective gloves, protective clothing, eye, and face protection
• Wash thoroughly after handling
• Keep only in original container
• Use only outdoors or in a well-ventilated area

GHS - Precautionary Statement(s) - Response
• IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower
• Wash contaminated clothing before reuse
• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
• Immediately call a POISON CENTER or doctor/physician
• IF INHALED: Remove person to fresh air and keep comfortable for breathing
• Immediately call a POISON CENTER or doctor/physician
• IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
• IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
• Specific treatment (see First Aid information on product label and/or Section 4 of the SDS)
• Absorb spillage to prevent material damage

GHS - Precautionary Statement(s) - Storage
• Store locked up
• Store in a well-ventilated place. Keep container tightly closed
• Store in corrosive resistant and NON-ALUMINUM container with a resistant inner liner (NOTE: flammable hydrogen gas may be generated if aluminum container and/or aluminum fittings are used)

GHS - Precautionary Statement(s) - Disposal
• Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations

Hazards Not Otherwise Classified (HNOC)
Mixing with water may cause splattering and release of heat

Additional Hazard Information
Mixing with water may cause splattering and release of heat.

See Section 11: TOXICOLOGICAL INFORMATION

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Sodium hydroxide solution, Liquid Caustic, Lye Solution, Caustic, Lye, Soda Lye, Secondary Caustic Soda Liquids

Component	Percent [%]	CAS Number
Water	48.5 - 94.5	7732-18-5
Sodium Hydroxide	5.5 - 51.5	1310-73-2
Sodium Chloride	0 - 35	7647-14-5

Notes: *All hazardous and non-hazardous components of product composition are listed.*

SECTION 4. FIRST AID MEASURES

INHALATION: If inhalation of mists, vapors, or spray occurs and adverse effects result, remove to uncontaminated area. Evaluate ABC's (is Airway constricted, is Breathing occurring, and is blood Circulating) and treat symptomatically. GET MEDICAL ATTENTION IMMEDIATELY. There is no specific antidote, treat symptomatically.

SKIN CONTACT: Immediately flush contaminated areas with water. Remove contaminated clothing, jewelry, and shoes immediately. Wash contaminated areas with large amounts of water. GET MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

EYE CONTACT: Immediately flush contaminated eyes with a directed stream of water for as long as possible. Remove contact lenses, if present and easy to do. Continue rinsing. GET MEDICAL ATTENTION IMMEDIATELY. Washing eyes within several seconds is essential to achieve maximum effectiveness.

INGESTION: If swallowed, do not induce vomiting. For definite or probable ingestion, do not administer oral fluids. If vomiting occurs spontaneously, keep airway clear. Monitor airway. Volume resuscitation (IV fluids) and circulatory support (CPR) may be required. Never give anything by mouth to an unconscious or convulsive person. GET MEDICAL ATTENTION IMMEDIATELY.

Most Important Symptoms/Effects (Acute and Delayed) Corrosive. This material may be corrosive to any tissue it comes in contact with. It can cause serious burns and extensive tissue destruction resulting in: liquefaction, necrosis, and/or perforation.

Acute Symptoms/Effects: Listed below.
Inhalation (Breathing): Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeospasm, shortness of breath, bronchoconstriction, and possible pulmonary edema. Severe and permanent scarring may occur. Pulmonary edema may develop several hours after a severe acute exposure. Aspiration of this material may cause the same conditions.
Skin: Skin Corrosion. Exposure to skin may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep and painful wounds).
Eye: Serious Eye Damage. Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye, permanent visual defects, and blindness and/or loss of the eye.
Ingestion (Swallowing): Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

Delayed Symptoms/Effects:
- Skin: Repeated and prolonged skin contact may cause a chronic dermatitis

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: May aggravate preexisting conditions such as: eye disorders that decrease tear production or have reduced integrity of the eye; skin disorders that compromise the integrity of the skin; and respiratory conditions including asthma and other breathing disorders.

Protection of First-Aiders: Protect yourself by avoiding contact with this material. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Do not ingest. Use personal protective equipment. Refer to Section 8 for specific personal protective equipment recommendations. At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission.

Notes to Physician: Medical observation and assessment is recommended for all ingestions, all eye exposures, and symptomatic inhalation and dermal exposures. For symptomatic ingestion, do not administer oral fluids and consider investigation by endoscopy, X-ray, or CT scan. Esophageal perforation, airway compromise, hypotension, and shock are possible. For prolonged exposures and significant exposures, consider delayed injury to exposed tissues. There is no antidote. Treatment is supportive care. Follow normal parameters for airway, breathing, and circulation. Surgical intervention may be required.

SECTION 5. FIRE-FIGHTING MEASURES

Fire Hazard: Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. May react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc. to release hydrogen gas which can form explosive mixtures in air.

Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.

Fire Fighting: Move container from fire area if it can be done without risk. Cool containers with water. Do not apply water directly on this product. Heat is generated when mixed with water. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Avoid contact with skin.

Component	Immediately Dangerous to Life/ Health (IDLH)
Sodium Hydroxide 1310-73-2	10 mg/m^3 IDLH

Hazardous Combustion Products: Sodium hydroxide fumes can be generated by thermal decomposition at elevated temperatures

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not flammable

Upper Flammability Level (air): Not flammable

Flash point: Not flammable

Auto-ignition Temperature: Not applicable

GHS: PHYSICAL HAZARDS:
- Corrosive to Metals
- Mixing with water may cause splattering and release of heat

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Do not get in eyes, on skin or on clothing. Avoid breathing mist, vapor, or spray. Do not ingest. Wear appropriate personal protective equipment recommended in Section 8 of the SDS.

Methods and Materials for Containment and Cleaning Up:
In case of spill or leak, stop the leak as soon as possible, if safe to do so. Completely contain spilled materials with dikes, sandbags, etc. Shovel dry material into suitable container. Liquid material may be removed with a vacuum truck. Remaining material may be diluted with water and neutralized with dilute acid, then absorbed and collected. Flush spill area with water, if appropriate.

Environmental Precautions:
Keep out of water supplies and sewers. Do not flush into surface water or sanitary sewer system. This material is alkaline and may raise the pH of surface waters with low buffering capacity. Releases should be reported, if required, to appropriate agencies.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling:
Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Do not ingest. Do not eat, drink or smoke in areas where this material is used. Wear personal protective equipment as described in Exposure Controls/Personal Protection (Section 8) of the SDS. NEVER add water to product. When mixing, slowly add to water to minimize heat generation and spattering.

Safe Storage Conditions:
Store and handle in accordance with all current regulations and standards. Keep container tightly closed and properly labeled. Do not store in aluminum container or use aluminum fittings or transfer lines, as flammable hydrogen gas may be generated. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:
Acids and halogenated compounds, Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys, Releases heat when diluted in water

GHS: PHYSICAL HAZARDS:
- Corrosive to Metals
- Mixing with water may cause splattering and release of heat

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): Listed below for the product components that have regulatory occupational exposure limits (OEL's).

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PELCeiling
Sodium Hydroxide 1310-73-2	2 mg/m^3	-----	-----

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S): Listed below for the product components that have non-regulatory occupational exposure limits (OEL's).

Component	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
Sodium Hydroxide	-----	-----	2 mg/m^3	-----	-----	2 mg/m^3

- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Component	OXY REL 8 hr TWA	OXY REL STEL	OXY REL Ceiling
Sodium Chloride 7647-14-5 (0 - 35)	-----	-----	-----

ENGINEERING CONTROLS: Provide local exhaust ventilation where dust or mist may be generated. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear chemical safety goggles with a face-shield to protect against eye and skin contact when appropriate. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin and Body Protection: Wear protective clothing to minimize skin contact. Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Always place pants legs over boots. Contaminated clothing should be removed, then discarded or laundered. Discard contaminated leather goods.

Hand Protection: Wear appropriate chemical resistant gloves. Consult a glove supplier for assistance in selecting an appropriate chemical resistant glove.

Protective Material Types:
- Natural rubber
- Neoprene
- Nitrile
- Polyvinyl chloride (PVC)
- Tyvek®
- Tychem®

Respiratory Protection: A NIOSH approved respirator with N95 (dust, fume, mist) cartridges may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits, or when symptoms have been observed that are indicative of overexposure. If eye irritation occurs, a full face style mask should be used. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

Component	Immediately Dangerous to Life/ Health (IDLH)
Sodium Hydroxide 1310-73-2	10 mg/m^3 IDLH

HYGIENE MEASURES: Handle in accordance with good industrial hygiene and safety practices. Wash hands and affected skin immediately after handling, before breaks, and at the end of the workday. When using do not eat or drink. When using do not smoke.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear to opaque
Color:	Colorless to slightly colored
Odor:	Odorless
Odor Threshold [ppm]:	No data available.
Molecular Weight:	40.01
Molecular Formula:	NaOH
Decomposition Temperature:	No data available
Boiling Point/Range:	215 - 291°F (102 - 144°C)
Freezing Point/Range:	-26 to 59°F (-32 to 15 °C).
Vapor Pressure:	13 - 135 mmHg @ 60 °C
Vapor Density (air=1):	No data available
Relative Density/Specific Gravity (water=1):	1.05 – 1.56 @ 15.6 °C
Density:	8.8 - 13.0 lbs/gal @ 15.6 °C
Water Solubility:	100%
pH:	14.0 (theoretical value of 7.5% solution)
Volatility:	No data available
Evaporation Rate (ether=1):	No data available
Partition Coefficient (n-octanol/water):	No data available
Flash point:	Not flammable
Flammability (solid, gas):	Not flammable
Lower Flammability Level (air):	Not flammable
Upper Flammability Level (air):	Not flammable
Auto-ignition Temperature:	Not applicable
Viscosity:	About 24cp for 50% solution at 40 °C (104 °F)

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Soluble in water, releasing heat sufficient to ignite combustibles. Reacts with metals, and may form hydrogen gas.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions:
Mixing with water, acid, or incompatible materials may cause splattering and release of large amounts of heat. Will react with some metals forming flammable hydrogen gas. Carbon monoxide gas may form upon contact with reducing sugars, food and beverage products in enclosed spaces.

Conditions to Avoid: (e.g., static discharge, shock, or vibration) -. None known.

Incompatibilities/ Materials to Avoid: Acids and halogenated compounds. Prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc or other alkali sensitive metals or alloys. Releases heat when diluted in water.

Hazardous Decomposition Products: Toxic fumes of sodium oxide

Hazardous Polymerization: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

IRRITATION DATA: PRIMARY SKIN IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)
PRIMARY EYE IRRITATION: Severe Irritation, Corrosive (rabbit, 24 hr)

TOXICITY DATA:

PRODUCT TOXICITY DATA: CAUSTIC SODA LIQUID (ALL GRADES)

LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
No reliable data available	No reliable data available	No data available

COMPONENT TOXICITY DATA:
Note: The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Water 7732-18-5	90 mL/kg (Rat)	-----	-----
Sodium Hydroxide 1310-73-2	140-3400 mg/kg	1350 mg/kg (Rabbit)	-----
Sodium Chloride 7647-14-5	3 g/kg (Rat)	-----	42 g/m^3 (1 hr-Rat)

****

POTENTIAL HEALTH EFFECTS:

Eye contact: Corrosive. Causes serious eye damage which can result in: severe irritation, pain and burns, and permanent damage including blindness.

Skin contact: Corrosive. Causes severe skin burns. Prolonged or repeat skin exposures can result in dermatitis.

Inhalation: Corrosive. Inhalation injury may result from ingestion and/or aspiration of this material. May cause severe irritation of the respiratory tract with potential airway compromise, coughing, choking, pain, and burns of the mucous membrane and respiratory system. This material can be extremely destructive to the tissue of the mucus membranes and respiratory system. Aspiration may cause chemical pneumonitis, pulmonary edema, damage to lung tissue, death.

Ingestion: Corrosive. If swallowed, may cause severe oral and esophageal, mucus membrane, and gastrointestinal burns and possible perforation. If swallowed, may pose a lung aspiration hazard during vomiting.

Chronic Effects: Repeated or prolonged skin contact may result in dermatitis.

SIGNS AND SYMPTOMS OF EXPOSURE:
This material may cause severe burns and permanent damage to any tissue with which it comes into contact. It can cause serious burns and extensive tissue destruction resulting in liquefaction, necrosis and/or perforation. Signs and symptoms of exposure vary, and are dependent on the route of exposure, degree of exposure, and duration of exposure.

Inhalation (Breathing): Respiratory System Effects: Exposure to airborne material may cause irritation, redness of upper and lower airways, coughing, laryngeospasm, shortness of breath, bronchoconstriction, and possible pulmonary edema. Severe and permanent scarring may occur. Pulmonary edema may develop several hours after a severe acute exposure. Aspiration of this material may cause the same conditions.
Skin: Skin Corrosion. Exposure to skin may cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of skin, and damage to underlying tissues (deep and painful wounds).
Eye: Serious Eye Damage. Eye exposures may cause eye lid burns, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to internal contents of the eye, permanent visual defects, and blindness and/or loss of the eye.
Ingestion (Swallowing): Gastrointestinal System Effects: Exposure by ingestion may cause irritation, swelling, and perforation of upper and lower gastrointestinal tissues. Permanent scarring may occur.

TOXICITY:
When in solution, this material will affect all tissues with which it comes in contact. The severity of the tissue damage is a function of its concentration, the length of tissue contact time, and local tissue conditions. After exposure there may be a time delay before irritation and other effects occur. This material is a strong irritant and is corrosive to the skin, eyes, and mucus membranes. This material may cause severe burns and permanent damage to any tissue with which it comes into contact.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

****

GHS HEALTH HAZARDS:

GHS: CONTACT HAZARD - EYE: Category 1 - Causes serious eye damage

GHS: CONTACT HAZARD - SKIN: Category 1B - Causes severe skin burns and eye damage

Skin Absorbent / Dermal Route? No.

GHS: CARCINOGENICITY:
Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC or OSHA.

SPECIFIC TARGET ORGAN TOXICITY (Single Exposure):
Category 3 - Respiratory Irritation

SECTION 12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity:
This material has exhibited moderate toxicity to aquatic organisms. Data provided are for sodium hydroxide

Component	Freshwater Fish	Invertebrate Toxicity:	Algae Toxicity:	Other Toxicity:
Sodium Chloride 7647-14-5 (0 - 35)		340.7 - 469.2 mg/L EC50 = 1000 mg/L EC50	-----	

FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation

PERSISTENCE: This material is alkaline and may raise the pH of surface waters with low buffering capacity This material is believed to exist in the disassociated state in the environment

BIOCONCENTRATION: This material is not expected to bioconcentrate in organisms.

BIOACCUMULATIVE POTENTIAL: Does not bioaccumulate.

MOBILITY IN SOIL: No data available.

ADDITIONAL ECOLOGICAL INFORMATION: This material has exhibited slight toxicity to terrestrial organisms. This material has exhibited moderate toxicity to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from material:
Reuse or reprocess, if possible. May be subject to disposal regulations. Dispose in accordance with all applicable regulations.

Container Management:
Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

SECTION 14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

UN NUMBER: UN1824
PROPER SHIPPING NAME: Sodium Hydroxide Solution
HAZARD CLASS/ DIVISION: 8

PACKING GROUP: II
LABELING REQUIREMENTS: 8
RQ (lbs): RQ 1000 lbs. (Sodium Hydroxide)

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

UN NUMBER: UN1824
SHIPPING NAME: Sodium hydroxide solution
CLASS OR DIVISION: 8
PACKING/RISK GROUP: II
LABELING REQUIREMENTS: 8

MARITIME TRANSPORT (IMO / IMDG) :

UN NUMBER: UN1824
PROPER SHIPPING NAME: Sodium hydroxide solution
HAZARD CLASS / DIVISION: 8
Packing Group: II
LABELING REQUIREMENTS: 8

SECTION 15. REGULATORY INFORMATION

U.S. REGULATIONS

OSHA REGULATORY STATUS:
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):
If a release is reportable under CERCLA section 103, notify the state emergency response commission and local emergency planning committee. In addition, notify the National Response Center at (800) 424-8802 or (202) 426-2675.

Component	CERCLA Reportable Quantities:
Sodium Hydroxide	1000 lb (final RQ)

SARA EHS Chemical (40 CFR 355.30)
No components are listed

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):
Acute Health Hazard

EPCRA SECTION 313 (40 CFR 372.65):
No components are listed

DEPARTMENT OF HOMELAND SECURITY (DHS)- Chemical Facility Anti-Terrorism Standards (6 CFR 27):
No components in this material are regulated under DHS

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):
Not regulated

FDA: This material has Generally Recognized as Safe (GRAS) status under specific FDA regulations. Additional information is available from the Code of Federal Regulations which is accessible on the FDA's website. This product is not produced under all current Good Manufacturing Practices (cGMP) requirements as defined by the Food and Drug Administration (FDA).

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt

Component	U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA):
Water 7732-18-5 (48.5 - 94.5)	Listed
Sodium Hydroxide 1310-73-2 (5.5 - 51.5)	Listed
Sodium Chloride 7647-14-5 (0 - 35)	Listed

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65:
This product and its ingredients are not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act. For additional information, contact OxyChem Technical Services at 1-800-733-1165.

Component	California Proposition 65 Cancer WARNING:	California Proposition 65 CRT List - Male reproductive toxin:	California Proposition 65 CRT List - Female reproductive toxin:	Massachusetts Right to Know Hazardous Substance List	New Jersey Right to Know Hazardous Substance List	New Jersey Special Health Hazards Substance List
Sodium Hydroxide 1310-73-2	Not Listed	Not Listed	Not Listed	Listed	1706	corrosive

Component	New Jersey - Environmental Hazardous Substance List	Pennsylvania Right to Know Hazardous Substance List	Pennsylvania Right to Know Special Hazardous Substances	Pennsylvania Right to Know Environmental Hazard List	Rhode Island Right to Know Hazardous Substance List
Water 7732-18-5	Not Listed	Listed	Not Listed	Not Listed	Not Listed
Sodium Hydroxide 1310-73-2	Not Listed	Listed	Not Listed	Present	Listed

CANADIAN REGULATIONS

• This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations

Component	Water
WHMIS - Classifications of Substances: Uncontrolled product according to WHMIS classification criteria	
Component	Sodium Hydroxide
WHMIS - Classifications of Substances: E	
Component	Sodium Chloride
WHMIS - Classifications of Substances: Uncontrolled product according to WHMIS classification criteria	

SECTION 16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 13-Jan-2016

Other information:
The Safety Data Sheet for Caustic Soda Liquid (ALL Grades) can be used for hazard communication purposes for off-specification, secondary caustic soda liquids generated when cleaning caustic soda storage tanks, including the general disclaimer found in section 16 of the Safety Data Sheet

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health Rating: 3 **Flammability Rating:** 0 **Reactivity Rating:** 1

NFPA 704 - Hazard Identification Ratings (SCALE 0-4) : Listed below.

Health Rating: 3 **Flammability:** 0 **Reactivity Rating:** 1

Reason for Revision:
• Changed GHS Classification: SEE SECTION 2
• Toxicological Information has been revised: SEE SECTION 11

CAUSTIC SODA LIQUID (ALL GRADES)

IMPORTANT:
The information presented herein, while not guaranteed, was prepared by technical personnel and is true and accurate to the best of our knowledge. NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, OR WARRANTY OR GUARANTY OF ANY OTHER KIND, EXPRESSED OR IMPLIED, IS MADE REGARDING PERFORMANCE, SAFETY, SUITABILITY, STABILITY OR OTHERWISE. This information is not intended to be all-inclusive as to the manner and conditions of use, handling, storage, disposal and other factors that may involve other or additional legal, environmental, safety or performance considerations, and OxyChem assumes no liability whatsoever for the use of or reliance upon this information. While our technical personnel will be happy to respond to questions, safe handling and use of the product remains the responsibility of the customer. No suggestions for use are intended as, and nothing herein shall be construed as, a recommendation to infringe any existing patents or to violate any Federal, State, local or foreign laws

OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees

End of Safety Data Sheet

The Pulsatron Series HV designed for high viscosity applications for precise and accurate metering control. The Series HV offers manual control over stroke length and stroke rate as standard with the option to choose between 4-20mA and external pace inputs for automatic control.

Five distinct models are available, having pressure capabilities to 150 PSIG (10 BAR) @ 12 GPD (1.9 lph), and flow capacities to 240 GPD (37.9 lph) @ 80 PSIG (5.6 BAR), with a turndown ratio of 100:1. Metering performance is reproducible to within ± 2% of maximum capacity.

Features

- Automatic Control, available with 4-20mADC direct or external pacing, with stop function.
- Manual Control by on-line adjustable stroke rate and stroke length.
- Auto-Off-Manual switch.
- Highly Reliable timing circuit.
- Circuit Protection against voltage and current upsets.
- Panel Mounted Fuse.
- Solenoid Protection by thermal overload with auto-reset.
- Water Resistant, for outdoor and indoor applications.
- Indicator Lights, panel mounted.
- Guided Ball Check Valve Systems, to reduce back flow and enhance outstanding priming characteristics.
- Viscosities to 20,000 CPS.

Controls

Manual Stroke Rate

- Turn-Down Ratio 10:1

Manual Stroke Length

- Turn-Down Ratio 10:1

4-20mA or 20-4mA Input

- Automatic Control

Operating Benefits

- Reliable metering performance.
- Rated "hot" for continuous duty.
- High viscosity capability.
- Leak-free, sealless, liquid end.

Aftermarket

- KOPkits
- Gauges
- Dampeners
- Pressure Relief Valves
- Tanks
- Pre-Engineered Systems
- Process Controllers (PULSAblue, MicroVision)

Series HV

Specifications and Model Selection

MODEL		LVB3	LVF4	LVG4	LVG5	LVH7
Capacity	GPH	0.50	1.00	2.00	4.00	10.00
nominal	GPD	12	24	48	96	240
(max.)	LPH	1.9	3.8	7.6	15.1	37.9
Pressure	PSIG	150	150	110	110	80
(max.)	BAR	10	10	7	7	5.6
Connections:	Tubing	(S) .50" I.D. X .75" O.D. .38" I.D. X .50" OD (LVB3 & F4 only) (S & D) .50" I.D. X .75" O.D. (LVG4,G5 & H7 only)				

Engineering Data

Pump Head Materials Available: GFPPL, PVC, PVDF, 316 SS

Diaphragm: PTFE-faced CSPE-backed

Check Valves Materials Available:

Seats/O-Rings: PTFE, CSPE, Viton

Balls: Ceramic, PTFE, 316 SS, Alloy C

Fittings Materials Available: GFPPL, PVC, PVDF

Bleed Valve: Same as fitting and check valve selected, except 316SS

Injection Valve & Foot Valve Assy: Same as fitting and check valve selected

Tubing: Clear PVC, White PE

Important: Material Code - GFPPL=Glass-filled Polypropylene, PVC=Polyvinyl Chloride, PE=Polyethylene, PVDF=Polyvinylidene Fluoride, CSPE=Generic formulation of Hypalon, a registered trademark of E.I. DuPont Company. Viton is a registered trademark of E.I. DuPont Company. PVC wetted end recommended for sodium hypochlorite.

Engineering Data

Reproducibility: +/- 2% at maximum capacity

Viscosity Max CPS: 20,000 CPS

Stroke Frequency Max SPM: 125

Stroke Frequency Turn-Down Ratio: 10:1

Stroke Length Turn-Down Ratio: 10:1

Power Input: 115 VAC/50-60 HZ/1 ph, 230 VAC/50-60 HZ/1 ph

Average Current Draw:

@ 115 VAC; Amps: 1.0 Amps

@ 230 VAC; Amps: 0.5 Amps @ 230 VAC

Peak Input Power: 300 Watts

Average Input Power @ Max SPM: 130 Watts

Custom Engineered Designs – Pre-Engineered Systems

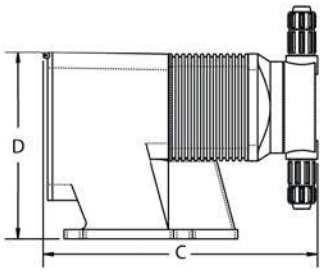
Pre-Engineered Systems

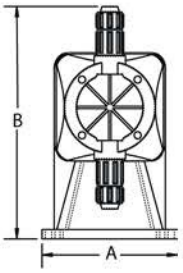
Pulsafeeder's Pre-Engineered Systems are designed to provide complete chemical feed solutions for all electronic metering applications. From stand alone simplex pH control applications to full-featured, redundant sodium hypochlorite disinfection metering, these rugged fabricated assemblies offer turn-key simplicity and industrial-grade durability. The UV-stabilized, high-grade HDPE frame offers maximum chemical compatibility and structural rigidity. Each system is factory assembled and hydrostatically tested prior to shipment.

Dimensions

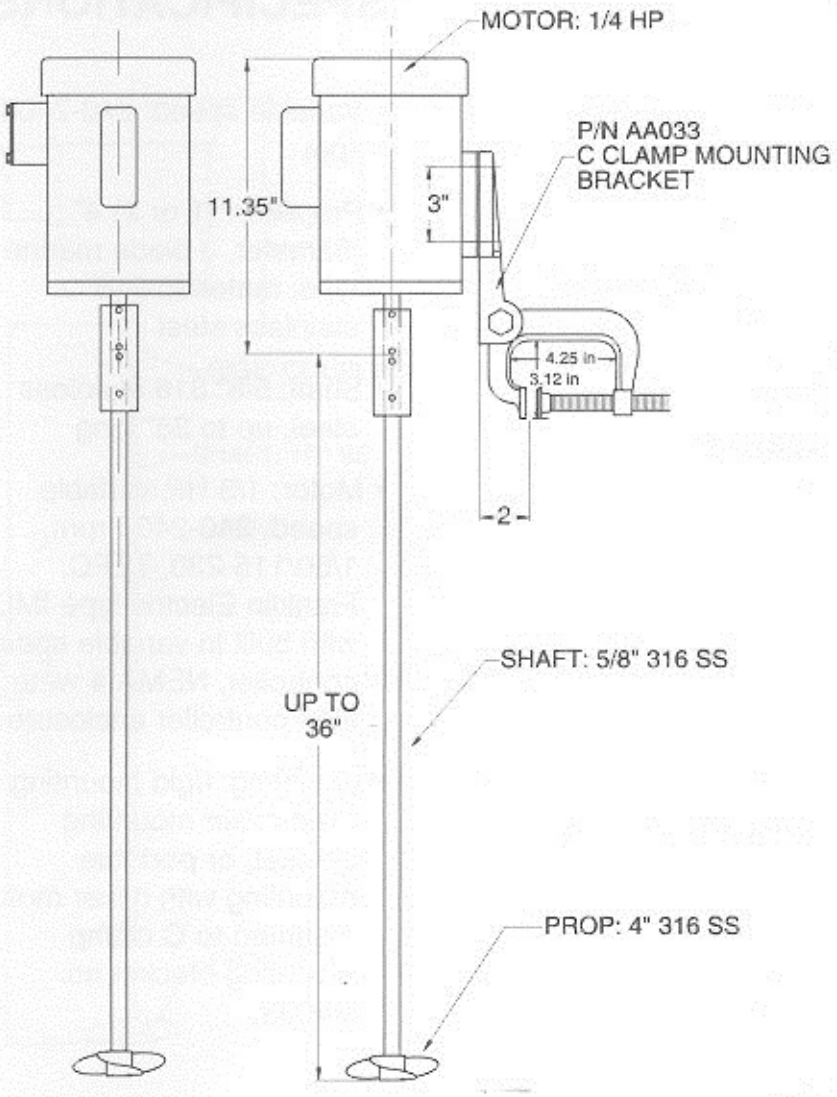
Series HV Dimensions (inches)					
Model No.	A	B	C	D	Shipping Weight
LVB3	5.4	9.3	9.5	7.5	13
LVF4	5.4	10.8	10.8	7.5	18
LVG4	5.4	9.5	10.6	7.5	18
LVG5	5.4	10.8	10.8	7.5	18
LVH7	6.1	11.5	11	8.2	25

NOTE: Inches X 2.54 = cm





MIXER MODEL NO. AA102A



AA102A

SPECIFICATIONS

- Speed: 1,725 rpm
- Propeller: (1 or 2) 4" diameter, 3 blade marine type, material: 316 stainless steel
- Shaft: 5/8" 316 stainless steel, up to 36" long
- Motor: 1/4 HP, 1,725 rpm, 1/60/115-230, capacitor start, or 3/60/230-460, TEFC
- Mounting: rigid mounting to fixed mixer mounting bracket, or portable mounting with mixer motor mounted to C clamp mounting bracket no. AA033.

SAFETY DATA SHEET

Revision date 2018-06-11 **Revision number** 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name Redux E50

Other means of identification

Product code
Synonyms Water And Wastewater Treatment Coagulant/Flocculant

Recommended use of the chemical and restrictions on use

Recommended use [RU] No information available
Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier

Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, Massachusetts 01453
Tel: (774) 450-7177
Hours: Monday-Friday 9:00-5:00 EST

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: (800) 424-9300
Outside USA - +1 (703) 527-3887 collect calls accepted

Contact Point info@reduxtech.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Corrosive to metals	Category 1

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Physical state	Color	Appearance	Odor
liquid	colorless to yellow	clear	no appreciable odor

WARNING

Hazard statements
Causes skin irritation
Causes serious eye irritation
May be corrosive to metals

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Absorb spillage to prevent material damage

Precautionary Statements - Storage
Store in corrosive resistant container with a resistant inner liner

Other information
• May be harmful in contact with skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	weight-%	TRADE SECRET
Trade Secret Ingredient	PROPRIETARY	45 - 55%	*

*The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First Aid Measures

Eye contact
Immediately flush with plenty of water for at least 20 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Seek immediate medical attention.

Skin contact
Immediately wash thoroughly with soap and water, remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation should develop.

Ingestion
Seek medical attention immediately. Give large amounts of water to drink. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

Inhalation
Remove to fresh air.

Most important symptoms and effects, both acute and delayed

Acute effects
Possible eye, skin and respiratory tract irritation.

Chronic effects
May aggravate existing skin, eye, and lung conditions. Persons with kidney disorders have an increased risk from exposure based on general information found on aluminum salts.

Indication of any immediate medical attention and special treatment needed

Note to physicians
Aluminum soluble salts may cause gastroenteritis if ingested. Treatment includes the use of demulcents. Note: Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media
Water Spray, Carbon Dioxide, Foam, Dry Chemical.

Extinguishing media which must not be used for safety reasons
No information available

Special hazards arising from the substance or mixture

Special Hazard
May produce hazardous fumes or hazardous decomposition products.

Advice for firefighters

Firefighting measures
Product is a water solution and nonflammable. In a fire, this product may build up pressure and rupture a sealed container; cool exposed containers with water spray. Use self-contained breathing apparatus in confined areas; avoid breathing mist or spray.

Special protective equipment for firefighters
Not determined

Explosion data

Sensitivity to Mechanical Impact
None.

Sensitivity to Static Discharge
None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions
Wear suitable protective clothing and gloves.

Environmental precautions

Environmental precautions
Do not permit run-off to get into sewers or surface waterways.

Methods and material for containment and cleaning up

Methods for containment
Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.

Methods for cleaning up
Clear spills immediately. Contain large spill and remove using a vacuum truck. Soak up small spills with inert absorbent material and place in a labeled waste container for disposal. Ventilate area of leak or spill. Spills of solution are extremely slippery so all residue must be removed promptly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling
Keep container closed when not in use
Keep away from heat and open flame.
Avoid contact with eyes, skin and clothing
Wash thoroughly after handling
Wear chemical splash goggles, gloves, and protective clothing when handling.
Avoid breathing vapor or mist
Use with adequate ventilation and employ respiratory protection where mist or spray may be generated.
FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions
Do not store in unlined metal containers.
Product may slowly corrode iron, brass, copper, aluminum, mild steel, and stainless steel.
Store in a cool, dry place away from direct heat.
Keep in tightly closed container.

Incompatible products
Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering controls
Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment

Eye/face Protection
Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection
Appropriate chemical resistant gloves should be worn.

Skin and body protection
Standard work clothing and work shoes.

Respiratory protection
If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134.

Other personal protection data
Eyewash fountains and safety showers must be easily accessible.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Color	colorless to yellow
Appearance	clear
Odor	no appreciable odor
Odor threshold	No information available

Property	Values	Remarks / Method
pH	3.5	as is
Melting / freezing point	-7 °C / 19 °F	No information available
Boiling point / boiling range	No information available	No information available
Flash point	Not applicable	No information available
Evaporation rate	No information available	No information available

Flammability (solid, gas)	Not applicable	No information available
Flammability Limit in Air		
Upper flammability limit	Not applicable	No information available
Lower flammability limit	Not applicable	No information available
Vapor pressure	No information available	No information available
Vapor density	No information available	No information available
Specific gravity	1.33 - 1.35	No information available
Solubility (water)	Soluble	No information available
Solubility in other solvents	No information available	No information available
Partition coefficient: n-octanol/water	No information available	No information available
Autoignition temperature	Not applicable	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	No information available	No information available
Dynamic viscosity	< 100 cps @ 20 °C	No information available

Other information

Density	11.0 - 11.3 lb/gal
Bulk Density	No information available
Explosive properties	No information available.
Oxidizing properties	No information available
Softening point	No information available
Molecular weight	No information available
Volatile organic compounds (VOCs) content	No information available
Percent Volatile, wt.%	40 - 50%

10. STABILITY AND REACTIVITY

Reactivity

Reactivity
No data available.

Chemical stability

Chemical stability
Stable.

Possibility of hazardous reactions

Possibility of hazardous reactions
None under normal processing.

Hazardous polymerization
No.

Conditions to avoid

Conditions to avoid
None

Incompatible materials

Materials to avoid
Oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products
Thermal decomposition may release toxic and/or hazardous gases such as Cl_2 and HCl.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
May cause moderate eye irritation that can become severe with prolonged contact. Prolonged exposure to Aluminum salts may cause conjunctivitis.

Skin contact
May be harmful in contact with skin. Prolonged and/or repeated contact may cause skin irritation.

Ingestion
May cause irritation of the mouth, throat and stomach. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Inhalation
Inhalation of mist or vapor may cause respiratory tract irritation.

Acute toxicity - Product Information

Oral LD50 No information available

Dermal LD50 No information available

Inhalation LC50 No information available

Acute toxicity - Component Information

Component	weight-%	Oral LD50	Dermal LD50	Inhalation LC50
Trade Secret Ingredient	45 - 55%	= 9187 mg/kg (Rat)	> 2000 mg/kg (Rat)	--

Information on toxicological effects

Symptoms
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Irritating to skin

Serious eye damage/eye irritation
Causes serious eye irritation

Sensitization
No information available

Germ cell mutagenicity
No information available

Carcinogenicity
This product does not contain any components in concentrations greater than or equal to 0.1% that are listed as known or suspected carcinogens by NTP, IARC, ACGIH, or OSHA.

Reproductive toxicity
No information available

Specific target organ toxicity - Single exposure
No information available.

Specific target organ toxicity - Repeated exposure
No information available

Aspiration hazard
No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	18374 mg/kg
ATEmix (dermal)	4004 mg/kg

Other information
Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Aquatic toxicity - Product Information

Fish	LC 50 (96 hour, static) 776.4 mg/L *Pimephales promelas* (Fathead Minnow) [1] EC 50 (96 hour, static) 265.5 mg/L *Pimephales promelas* (Fathead Minnow) [1]
Crustacea	LC 50 (48 hour, static) 803.8 mg/L *Ceriodaphnia dubia* (Water Flea) [1] NOEC (7 day chronic, static) 200 mg/L *Ceriodaphnia dubia* (Water Flea) [1]
Algae/aquatic plants	No information available

Acute aquatic toxicity - Component Information

Component	weight-%	Algae/aquatic plants	Fish	Toxicity to daphnia and other aquatic invertebrates
Trade Secret Ingredient	45 - 55%	--	LC50 (96 h static) 100 - 500 mg/L (Brachydanio rerio)	--

Persistence and degradability

Persistence and degradability
No information available

Bioaccumulative potential

Bioaccumulative potential
No information available.

Mobility

Mobility
No information available

Results of PBT and vPvB assessment

PBT and vPvB assessment
No information available

Other adverse effects

Other information
[1] Generated from tests conducted by ECT-Superior Laboratories May 2010

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes
Do NOT mix with other chemical wastes. Do not put solutions containing this product into sewer systems. Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations. Do not re-use empty containers.

Contaminated packaging
Since empty containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

DOT

NOT REGULATED FOR TRANSPORTATION
This product is excepted from DOT regulations under 49 CFR 173.154(d) when shipped by road or railway. The product exception is referenced in 49 CFR 172.101 Table. Packaging material must not be aluminum, steel or be degraded by this product

ICAO/IATA

Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
Hazard class	8
Packing group	III
ERG Code	8L

IMDG

Regulated

UN number	UN3264
Proper shipping name	Corrosive Liquid, Acidic, Inorganic, N.O.S. (Polyaluminum Chloride Solution)
Hazard class	8
Packing group	III
EmS	F-A, S-B

Harmonized Tariff Number 2827.32

15. REGULATORY INFORMATION

International Inventories

TSCA (United States)
All ingredients are on the inventory or exempt from listing

Australia (AICS)
All ingredients are on the inventory or exempt from listing

Canada (DSL)
All ingredients are on the inventory or exempt from listing

Canada (NDSL)
None of the ingredients are on the inventory.

China (IECSC)
All ingredients are on the inventory or exempt from listing

EINECS (European Inventory of Existing Chemical Substances)
All ingredients are on the inventory or exempt from listing

ELINCS (European List of Notified Chemical Substances)
None of the ingredients are on the inventory.

ENCS (Japan)
All ingredients are on the inventory or exempt from listing

South Korea (KECL)
All ingredients are on the inventory or exempt from listing

Philippines (PICCS)
All ingredients are on the inventory or exempt from listing

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
AICS - Australian Inventory of Chemical Substances
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - China Inventory of Existing Chemical Substances
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances

U.S. Federal Regulations

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

16. OTHER INFORMATION

NFPA Rating	Health - 1	Flammability - 0	Instability - 0	Special Hazard -
HMIS Rating	Health - 1	Flammability - 0	Physical hazard - 0	Personal protection - B

Product code

Revision date 2015-03-12

Revision number 1

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

SAFETY DATA SHEET

I. Chemical Product and Company Identification

Product Name: Nonionic / Anionic Polymer
Product #s: LRT- 800 Series Polymers

Distributor: Lockwood Remediation Technologies, LLC
89 Crawford Street
Leominster, Massachusetts 01453
Tel: 774-450-7177
Fax: 885-835-0617
Email: plockwood@lrt-llc.net

For Chemical Emergency - Spill, Leak, Fire, Exposure or Accident
Call **CHEMTEL** - Day or Night – 1800-255-3924

II. Composition and Ingredient Information

Components:	CAS #:
Anionic Polyacrylamide	25085-02-3
Permissible Exposure Limit (PEL):	No information available.
Threshold Limit Value (TLV):	Information not available.

III. Hazard Identification

Primary Routes of Exposure: Skin Contact - Eye Contact - Inhalation

Skin Contact: May cause irritation, especially after prolonged or repeated contact.

Eye Contact: Dust contact and solution may cause irritation.

Ingestion: May cause discomfort or gastrointestinal disturbance. Low oral toxicity.

Inhalation: Dust contact and solution may cause irritation.

Unusual Chronic Toxicity: None Known.

IV. First Aid Measures

Skin Contact: Flush with plenty of soap and water for at least 15 minutes. If irritation persists, get medical attention.

Eyes Contact: Immediately flush with water, continuing for 15 minutes. Immediately contact a physician for additional treatment.

Ingestion: If conscious, immediately give 2 to 4 glasses of water, and induce vomiting by touching finger to back of throat or giving syrup of Ipecac.

CAUTION: If unconscious, having breathing or in convulsions, do not induce vomiting or give water.

Inhalation: Remove to fresh air.

V. Fire-Fighting Measures

Flammability Classification: NFPA - Minimal - Will not burn under normal conditions.

Flash Point: Not flammable.

Flammable and Explosive Limits: UEL: ND LEL: ND

Hazardous Combustion Byproducts:

Thermal decomposition expected to produce carbon monoxide, carbon dioxide, and various nitrous oxides and some HCl vapors.

Extinguishing Media: Foam - Carbon Dioxide - Dry Chemical

AVOID USING WATER - MAY CAUSE EXTREMELY SLIPPERY CONDITIONS.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus.
Solutions of product are extremely slippery.

Unusual Fire and Explosion Hazards: Material and its solutions are extremely slippery.

VI. Accidental Release Measures

Procedures: Sweep up or shovel into metal or plastic container. Do not use water to clean area; product is very slippery when wet.

Waste Disposal: Incineration and/or disposal in a chemical landfill. Disposer must comply with Federal, State, and Local disposal or discharge laws.

VII. Handling and Storage Avoid contact with skin, eyes, or clothing.
Do not inhale mist if formed.
Use normal personal hygiene and housekeeping.
Store in a cool dry place.

VIII. Exposure Controls and Personal Protection

Eye Protection: Safety glasses for normal handling conditions.
Splash-proof goggles when handling solutions.
Do not wear contact lens.

Hand Protection: Rubber gloves.

Ventilation: Local exhaust - if dusting occurs. Natural ventilation adequate in absence of dust.

Respiratory Protection: If dusty conditions are encountered, wear NIOSH approved respirator.

Other Protection: Eye wash recommended, full work clothing, add protective rubber clothing if splashing or repeated contact with solution is likely.

IX. Physical and Chemical Properties

Appearance	White granular
State	Solid
Specific Gravity (Water = 1)	0.8 - 1.0
Solubility in Water	Complete

X. Stability and Reactivity

Stability: Product is stable as supplied.

Incompatibility: Oxidizing Agents may cause exothermic reaction.

Hazardous Decomposition or Byproducts:

Thermal decomposition expected to produce carbon oxides, and various nitrous oxides.

Hazardous Polymerization: Will not occur.

XI. Toxicological Information Not listed as a carcinogen by IARC, NTP, OSHA or ACGIH.

XII. Ecological Information

XIII. Disposal Considerations

Incineration and/or disposal in chemical landfill. Disposer must comply with federal, state, and local disposal or discharge laws.

RCRA Status of Unused Material if Discarded: Not a hazardous waste.

Hazardous Waste Number: N/A

XIV. Transport Information

Not DOT regulated. Not a RCRA hazardous waste.

Label Instructions: Signal Word: **"Caution! Products are extremely slippery! "**

XV. Regulatory Information

Reportable Quantity (EPA 40 CFR 302): N/A

Threshold Planning Quantity (EPA 40 CFR 355): N/A

Toxic Chemical Release Reporting (EPA 40 CFR 372): N/A

SARA TITLE 3: Section 311 Hazard Categorizations (40CFR 370): N/A

SARA TITLE 3: Section 313 Information (40CFR 372): N/A

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Information (40CFR 302.4) N/A

US TSCA: Product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C.

XVI. Other Information

		Scale
Health	0	4 = Severe
Flammability	1	3 = Serious
Reactivity	0	2 = Moderate
Personal Protection	**F**	1 = Slight
		0 = Insignificant

Personal Protective Equipment Guide

A = Safety Glasses

B = Safety Glasses, Gloves

C = Safety Glasses, Gloves, Apron

D = Gloves, Apron, Face shield

E = Safety Glasses, Gloves, and Dust Respirator

F = Safety Glasses, Gloves, Apron and Dust Respirator

G = Safety Glasses, Gloves, and Vapor Respirator

H = Splash Goggles, Gloves, Apron, Vapor Respirator

I = Safety Glasses, Gloves, and Dust & Vapor Respirator

J = Splash Goggles, Gloves, Apron, and Dust & Vapor Respirator

K = Air Line Hood/Mask, Gloves, Full Suit, Boots

X = Ask supervisor for special handling instructions

ABBREVIATIONS:

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissible Exposure Limit
TWA - Time Weighted Average
STEL - Short-Term Exposure Limit
ANSI - American National Standard Institute
MSHA - Mine Safety and Health Administration
NIOSH - National Institute for Occupational Safety & Health
NA - Not Applicable
NE - Not Established
NR - Not Required
PPE - Personal Protective Equipment
LEL - Lower Exposure Level
UEL - Upper Exposure Level

Sulfuric Acid, 70-100%

Safety Data Sheet

According to U.S. Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations and according to Canada's Hazardous Products Regulation, February 11, 2015.

Revision Date: 05/07/2018 Date of Issue: 05/31/2016 Version: 4.0

SECTION 1: IDENTIFICATION

Product Identifier

Product Form: Mixture

Product Name: Sulfuric Acid, 70-100%

Formula: H_2O_4S

Intended Use of the Product

Use Of The Substance/Mixture: Industrial use.

Name, Address, and Telephone of the Responsible Party

Manufacturer

CHEMTRADE LOGISTICS INC.
155 Gordon Baker Road
Suite 300
Toronto, Ontario M2H 3N5
For SDS Info: (416) 496-5856
www.chemtradelogistics.com

Emergency Telephone Number

Emergency Number : Canada: CANUTEC +1-613-996-6666 / US: CHEMTREC +1-800-424-9300
INTERNATIONAL: +1-703-741-5970
Chemtrade Emergency Contact: (866) 416-4404
For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

GHS Classification

Met. Corr. 1	H290
Skin Corr. 1A	H314
Eye Dam. 1	H318
Carc. 1A	H350
Aquatic Acute 3	H402

Full text of hazard classes and H-statements : see section 16

Label Elements

GHS Labeling

Hazard Pictograms :


GHS05


GHS08

Signal Word : Danger

Hazard Statements : H290 - May be corrosive to metals.
H314 - Causes severe skin burns and eye damage.
H318 - Causes serious eye damage.
H350 - May cause cancer (Inhalation).
H402 - Harmful to aquatic life.

Precautionary Statements : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P234 - Keep only in original container.
P260 - Do not breathe vapors, mist, or spray.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, and eye protection.
P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P310 - Immediately call a POISON CENTER or doctor.
P321 - Specific treatment (see section 4 on this SDS).
P363 - Wash contaminated clothing before reuse.
P390 - Absorb spillage to prevent material damage.
P405 - Store locked up.
P406 - Store in corrosive resistant container with a resistant inner liner.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Unknown acute toxicity

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	%*	GHS Ingredient Classification
Sulfuric acid**	(CAS-No.) 7664-93-9	70 - 100	Met. Corr. 1, H290 Skin Corr. 1A, H314 Eye Dam. 1, H318 Carc. 1A, H350 Aquatic Acute 3, H402
Water	(CAS-No.) 7732-18-5	0.1 - 30	Not classified

Full text of H-phrases: see section 16

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

**Strong inorganic acid aerosols/mists containing this substance are carcinogenic to humans via inhalation. Under normal conditions of use this route of exposure is not expected.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 30 minutes. Get immediate medical advice/attention. Wash contaminated clothing before reuse.

Eye Contact: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Most Important Symptoms and Effects Both Acute and Delayed

General: Corrosive to eyes, respiratory system and skin. May cause cancer.

Inhalation: May be corrosive to the respiratory tract.

Skin Contact: Causes severe irritation which will progress to chemical burns.

Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans. Prolonged inhalation of fumes or mists may cause erosion of the teeth.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Foam, carbon dioxide, dry chemical.

Unsuitable Extinguishing Media: Do not use water. Do not get water inside containers. Do not apply water stream directly at source of leak.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. This product may act as an oxidizer.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Toxic fumes are released.

Other Information: Do not allow run-off from fire fighting to enter drains or water courses.

Reference to Other Sections

Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not get in eyes, on skin, or on clothing. Do not breathe vapor, mist or spray. Do not handle until all safety precautions have been read and understood.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. As an immediate precautionary measure, isolate spill or leak area in all directions.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb spillage to prevent material damage. Cautiously neutralize spilled liquid. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle empty containers with care because they may still present a hazard. Do not get in eyes, on skin, or on clothing. Do not breathe vapors, mist, spray. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Additional Hazards When Processed: May be corrosive to metals. May release corrosive vapors. NEVER pour water into this substance; when dissolving or diluting always add it slowly to the water.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from extremely high or low temperatures and incompatible materials. Store in original container or corrosive resistant and/or lined container.

Incompatible Materials: Combustible materials. Reducing agents. Strong oxidizers. Strong bases. Metals. Water.

Specific End Use(s)

Industrial use.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Sulfuric acid (7664-93-9)		
Mexico	OEL TWA (mg/m³)	1 mg/m³
USA ACGIH	ACGIH TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
USA ACGIH	ACGIH chemical category	Suspected Human Carcinogen contained in strong inorganic acid mists
USA OSHA	OSHA PEL (TWA) (mg/m³)	1 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	1 mg/m³
USA IDLH	US IDLH (mg/m³)	15 mg/m³
Alberta	OEL STEL (mg/m³)	3 mg/m³
Alberta	OEL TWA (mg/m³)	1 mg/m³
British Columbia	OEL TWA (mg/m³)	0.2 mg/m³ (Thoracic, contained in strong inorganic acid mists)
Manitoba	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
New Brunswick	OEL STEL (mg/m³)	3 mg/m³
New Brunswick	OEL TWA (mg/m³)	1 mg/m³
Newfoundland & Labrador	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nova Scotia	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Nunavut	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Nunavut	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Northwest Territories	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction, strong acid mists only)
Northwest Territories	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction, strong acid mists only)
Ontario	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic)
Prince Edward Island	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic particulate matter)
Québec	VECD (mg/m³)	3 mg/m³
Québec	VEMP (mg/m³)	1 mg/m³
Saskatchewan	OEL STEL (mg/m³)	0.6 mg/m³ (thoracic fraction)
Saskatchewan	OEL TWA (mg/m³)	0.2 mg/m³ (thoracic fraction)
Yukon	OEL STEL (mg/m³)	1 mg/m³
Yukon	OEL TWA (mg/m³)	1 mg/m³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles. Face shield. Insufficient ventilation: wear respiratory protection.

Materials for Protective Clothing: Acid-resistant clothing.

Hand Protection: Wear protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance	:	Clear, Colorless to Amber, Oily
Odor	:	Pungent
Odor Threshold	:	Not available
pH	:	0.3
Evaporation Rate	:	Not available
Melting Point	:	10.56 °C (51.01 °F)
Freezing Point	:	Not available
Boiling Point	:	290 °C (554 °F)
Flash Point	:	Not applicable
Auto-ignition Temperature	:	Not applicable
Decomposition Temperature	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower Flammable Limit	:	Not applicable
Upper Flammable Limit	:	Not applicable
Vapor Pressure	:	0.00027 - 0.16 kPa at 25 °C (77 °F)
Relative Vapor Density at 20°C	:	3.4 (air = 1)
Relative Density	:	Not available
Specific Gravity	:	1.84 g/l
Solubility	:	Water: Miscible
Partition Coefficient: N-Octanol/Water	:	Not available
Viscosity	:	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity: May be corrosive to metals. Contact with metals may evolve flammable hydrogen gas. May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction. This product may act as an oxidizer.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures and incompatible materials.

Incompatible Materials: Combustible materials. Reducing agents. Strong bases. Strong oxidizers. Metals. Water.

Hazardous Decomposition Products: Thermal decomposition generates: Corrosive vapors.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity (Oral): Not classified

Acute Toxicity (Dermal): Not classified

Acute Toxicity (Inhalation): Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 0.3

Eye Damage/Irritation: Causes serious eye damage.

pH: 0.3

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Effects After Inhalation: May be corrosive to the respiratory tract.

Symptoms/Effects After Skin Contact: Causes severe irritation which will progress to chemical burns.

Symptoms/Effects After Eye Contact: Causes permanent damage to the cornea, iris, or conjunctiva.

Symptoms/Effects After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: Strong inorganic acid mists containing sulfuric acid are carcinogenic to humans. Prolonged inhalation of fumes or mists may cause erosion of the teeth.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Water (7732-18-5)	
LD50 Oral Rat	> 90000 mg/kg

Sulfuric acid (7664-93-9)	
LD50 Oral Rat	2140 mg/kg
LC50 Inhalation Rat	510 mg/m³ (Exposure time: 2 h)

Sulfuric acid (7664-93-9)	
IARC Group	1
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

Strong inorganic acid mists containing sulfuric acid	
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Ecology - General: Harmful to aquatic life.

Sulfuric acid (7664-93-9)	
LC50 Fish 1	500 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])
LC50 Fish 2	42 mg/l (Exposure time: 96 h - Species: Gambusia affinis [static])

Persistence and Degradability

Sulfuric Acid, 70-100%	
Persistence and Degradability	Not established.

Bioaccumulative Potential

Sulfuric Acid, 70-100%	
Bioaccumulative Potential	Not established.

Sulfuric acid (7664-93-9)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects

Other Information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Container may remain hazardous when empty. Continue to observe all precautions.

Ecology - Waste Materials: Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

TRANSPORTATION CLASSIFICATION	DOT	TDG	IMDG	IATA
Identification Number	UN1830	UN1830	UN1830	UN1830
Proper Shipping Name	SULFURIC ACID	SULFURIC ACID	SULPHURIC ACID	SULPHURIC ACID
Transport Hazard Class(es)	8	8	8	8
				
Packing Group	II	II	II	II
Environmental Hazards	**Marine Pollutant :** No	**Marine Pollutant** : No	**Marine Pollutant** : No	**Marine Pollutant**: N/A
Emergency Response	**ERG Number :** 137	**ERAP Index:** 3 000	**EMS:** F-A, S-B	**ERG code (IATA):** 8L
Additional Information	Not applicable	Not applicable	Not applicable	Not applicable

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Chemical Name (CAS No.)	CERCLA RQ	EPCRA 304 RQ	SARA 302 TPQ	SARA 313
Sulfuric acid (7664-93-9)	1000 lb	1000 lb	1000 lb	Yes

SARA 311/312

Sulfuric Acid, 70-100%
Immediate (acute) health hazard. Delayed (chronic) health hazard. Reactive hazard

US TSCA Flags Not present

US State Regulations

California Proposition 65

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Sulfuric acid (7664-93-9)	Yes	No	No	No
Strong inorganic acid mists containing sulfuric acid	Yes	No	No	No

State Right-To-Know Lists

Sulfuric acid (7664-93-9)
U.S. - Massachusetts - Right To Know List - Yes U.S. - New Jersey - Right to Know Hazardous Substance List - Yes U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List - Yes U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances - No U.S. - Pennsylvania - RTK (Right to Know) List - Yes

Canadian Regulations

Sulfuric acid (7664-93-9)
Listed on the Canadian DSL (Domestic Substances List) Not listed on the Canadian NDSL (Non-Domestic Substances List)

International Inventories/Lists

Chemical Name (CAS No.)	Australia AICS	Turkey CICR	Korea ECL	EU EINECS	EU ELINCS	EU SVHC	EU NLP	Mexico INSQ
Sulfuric acid (7664-93-9)	Yes	No	Yes	Yes	No	No	No	No

Chemical Name (CAS No.)	China IECSC	Japan ENCS	Japan ISHL	Japan PDSCL	Japan PRTR	Philippines PICCS	New Zealand NZIOC	US TSCA
Sulfuric acid (7664-93-9)	Yes	Yes	No	Yes	No	Yes	Yes	Yes

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Date of Preparation or Latest Revision : 05/07/2018

Revision Summary

Section	Change	Date Changed
16	Data modified	05/07/2018

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR).

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H350	May cause cancer
H402	Harmful to aquatic life

NFPA 704

NFPA Health Hazard : 3
NFPA Fire Hazard : 0
NFPA Reactivity Hazard : 2
NFPA Specific Hazards : W

HMIS Rating

Health : 3
Flammability : 0
Physical : 2
PPE See Section 8

Abbreviations and Acronyms

AICS – Australian Inventory of Chemical Substances
ACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BEI - Biological Exposure Indices (BEI)
CAS No. - Chemical Abstracts Service number
CERCLA RQ - Comprehensive Environmental Response, Compensation, and Liability Act - Reportable Quantity
CICR - Turkish Inventory and Control of Chemicals
DOT – 49 CFR – US Department of Transportation – Code of Federal Regulations Title 49 – Transportation.
EC50 - Median effective concentration
ECL - Korea Existing Chemicals List
EINECS - European Inventory of Existing Commercial Chemical Substances
ELINCS - European List of Notified Chemical Substances
EmS - IMDG Emergency Schedule Fire & Spillage
ENCS - Japanese Existing and New Chemical Substances Inventory
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-observed-effect Concentration
Log Pow - Octanol/water Partition Coefficient
NFPA 704 – National Fire Protection Association - Standard System for the Identification of the Hazards of Materials for Emergency Response
NIOSH - National Institute for Occupational Safety and Health
NLP - Europe No Longer Polymers List
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NZIOC - New Zealand Inventory of Chemicals
OEL - Occupational Exposure Limits
OSHA – Occupational Safety and Health Administration
PEL - Permissible Exposure Limits
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PDSCL - Japan Poisonous and Deleterious Substances Control Law
PPE – Personal Protective Equipment

EPA – Environmental Protection Agency
EPCRA 304 RQ – EPCRA 304 Extremely Hazardous Substance Emergency Planning and Community Right-to-Know-Act – Reportable Quantity
ERAP Index – Emergency Response Assistance Plan Quantity Limit
ErC50 - EC50 in Terms of Reduction Growth Rate
ERG code (IATA) - Emergency Response Drill Code as found in the International Civil Aviation Organization (ICAO)
ERG No. - Emergency Response Guide Number
HCCL - Hazard Communication Carcinogen List
HMIS – Hazardous Materials Information System
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association – Dangerous Goods Regulations
IDLH - Immediately Dangerous to Life or Health
IECSC - Inventory of Existing Chemical Substances Produced or Imported in China
IMDG - International Maritime Dangerous Goods Code
INSQ - Mexican National Inventory of Chemical Substances
ISHL - Japan Industrial Safety and Health Law
PRTR - Japan Pollutant Release and Transfer Register
REL - Recommended Exposure Limit
SADT - Self Accelerating Decomposition Temperature
SARA - Superfund Amendments and Reauthorization Act
SARA 302 - Section 302, 40 CFR Part 355
SARA 311/312 - Sections 311 and 312, 40 CFR Part 370 Hazard Categories
SARA 313 - Section 313, 40 CFR Part 372
SRCL - Specifically Regulated Carcinogen List
STEL - Short Term Exposure Limit
SVHC – European Candidate List of Substance of Very High Concern
TDG – Transport Canada Transport of Dangerous Goods Regulations
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TSCA – United StatesToxic Substances Control Act
TWA - Time Weighted Average
WEEL - Workplace Environmental Exposure Levels

Handle product with due care and avoid unnecessary contact. This information is supplied under U.S. OSHA'S "Right to Know" (29 CFR 1910.1200) and Canada's WHMIS regulations. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The information contained herein is based on data available to us and is believed to be true and accurate but it is not offered as a product specification. No warranty, expressed or implied, regarding the accuracy of this data, the hazards connected with the use of the product, or the results to be obtained from the use thereof, is made and Chemtrade and its affiliates assume no responsibility. Chemtrade is a member of the CIAC (Chemistry Industry Association of Canada) and adheres to the codes and principles of Responsible Care™.

Chemtrade NA GHS SDS 2015

ATTACHMENT E

USFWS IPAC LETTER AND NHESP MAPPING

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: May 17, 2021
Consultation Code: 05E1NE00-2021-SLI-3222
Event Code: 05E1NE00-2021-E-09711
Project Name: Galen Street, Watertown MA

Subject: List of threatened and endangered species that may occur in your proposed project location 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-3222
Event Code: 05E1NE00-2021-E-09711
Project Name: Galen Street, Watertown MA
Project Type: DEVELOPMENT
Project Description: RGP Submittal
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.36337185,-71.1850250615538,14z

Counties: Middlesex County, Massachusetts

Endangered Species Act Species

There is a total of 0 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.

Critical habitats

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

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

Query Results

Degrees, Minutes, Seconds: Latitude = 42º21'45" N, Longitude = 72º48'59" W
Decimal Degrees: Latitude = 42.36, Longitude = -71.18

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
All spatial data is currently mapped for this region

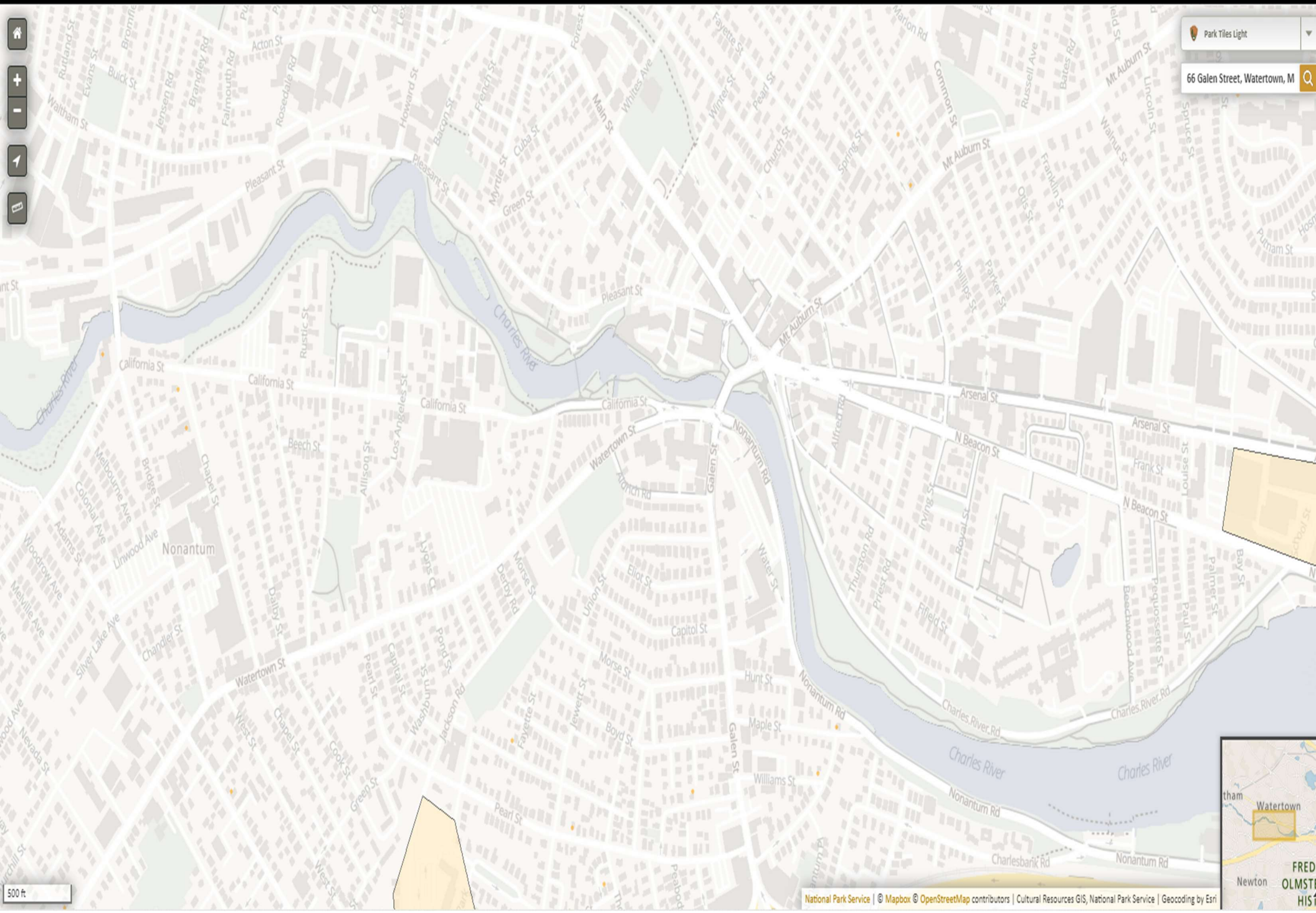
ATTACHMENT F

MACRIS REPORT

National Register of Historic Places

Public, non-restricted data depicting National Register spatial data processed by the Cultural Resources GIS facility. Last minor update, September 2020.

National Park Service
U.S. Department of the Interior



Massachusetts Cultural Resource Information System

MACRIS

MACRIS Search Results

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

Inv. No.	Property Name	Street	Town	Year
WAT.906	Galen Street Bridge over Charles River	Galen St	Watertown	1907
WAT.53	Union Market National Bank	1 Galen St	Watertown	1920
WAT.52	Lewando Cleaning and Dying	7-19 Galen St	Watertown	1906
WAT.322	Watertown Station Carhouse	28 Galen St	Watertown	c 1900
WAT.323	Watertown Carman's Lobby	28 Galen St	Watertown	1934
WAT.203	Strand Theater	43-47 Galen St	Watertown	c 1900
WAT.204		48 Galen St	Watertown	r 1845
WAT.210		111 Galen St	Watertown	r 1898
WAT.208		135-145 Galen St	Watertown	r 1880
WAT.940	Charles River Reservation - Nonantum Road	Nonantum Rd	Watertown	1910

ATTACHMENT G

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

Lab Number:	L2018950
Client:	Tighe & Bond 120 Front Street Suite 7 Worcester, MA 01608
ATTN:	Joel Loitherstein
Phone:	(508) 471-9627
Project Name:	GALEN ST.
Project Number:	B0849
Report Date:	05/15/20

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2018950-01	SW-1	WATER	WATERTOWN	05/07/20 08:00	05/07/20
L2018950-02	MW-101	WATER	WATERTOWN	05/07/20 09:00	05/07/20
L2018950-03	MW-304	WATER	WATERTOWN	05/07/20 11:00	05/07/20
L2018950-04	MW-204	WATER	WATERTOWN	05/07/20 12:00	05/07/20

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

Case Narrative (continued)

Report Submission

May 15, 2020: This final report includes the results of all requested analyses.

May 14, 2020: This is a preliminary report.

The analysis of Ethanol was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analyses performed were specified by the client.

L2018950-02, -03 and -04: Sample containers for the analysis of Dissolved Metals were received for the "MW-101", "MW-304", and "MW-204" samples, but were not listed on the chain of custody. At the client's request, the analysis was performed.

Microextractables

The WG1369840-2 LCS recovery for 1,2-dibromoethane (127%), associated with L2018950, -03, and -04, is outside Alpha's acceptance criteria, but within the acceptance criteria specified in the method.

Dissolved Metals

The WG1369860-3 MS recovery for arsenic (326%), performed on L2018950-02, recovered outside the 70-130% acceptance criteria. The result for this analyte is considered suspect due to either the heterogeneous nature of the sample or matrix interference.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Tiffani Morrissey - Tiffani Morrissey

Title: Technical Director/Representative Date: 05/15/20

ORGANICS

VOLATILES

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 05/08/20 10:40
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	490	E	ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	34		ug/l	20	--	1

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02 Date Collected: 05/07/20 09:00

Client ID: MW-101 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	108		60-140
Fluorobenzene	101		60-140
4-Bromofluorobenzene	101		60-140

Project Name: GALEN ST.
Lab Number: L2018950
Project Number: B0849
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 05/08/20 10:40
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	98		60-140
4-Bromofluorobenzene	102		60-140

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 05/12/20 16:06
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 05/12/20 14:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02 D
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 05/10/20 18:23
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methyl tert butyl ether	360		ug/l	100	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	97		60-140
Fluorobenzene	105		60-140
4-Bromofluorobenzene	93		60-140

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03 Date Collected: 05/07/20 11:00
Client ID: MW-304 Date Received: 05/07/20
Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 05/08/20 11:14
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	2.2		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	9.2		ug/l	1.0	--	1
Trichloroethene	4.0		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	1.7		ug/l	1.0	--	1
Xylenes, Total	1.7		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03 Date Collected: 05/07/20 11:00

Client ID: MW-304 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	104		60-140
4-Bromofluorobenzene	100		60-140

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 05/08/20 11:14
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	99		60-140
4-Bromofluorobenzene	83		60-140

Project Name: GALEN ST.
Lab Number: L2018950
Project Number: B0849
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 05/12/20 16:11
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 05/12/20 14:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1
Analytical Date: 05/08/20 11:47
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethane	ND		ug/l	1.5	--	1
Carbon tetrachloride	ND		ug/l	1.0	--	1
1,1,2-Trichloroethane	ND		ug/l	1.5	--	1
Tetrachloroethene	ND		ug/l	1.0	--	1
1,2-Dichloroethane	ND		ug/l	1.5	--	1
1,1,1-Trichloroethane	ND		ug/l	2.0	--	1
Benzene	ND		ug/l	1.0	--	1
Toluene	ND		ug/l	1.0	--	1
Ethylbenzene	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	1.0	--	1
Trichloroethene	ND		ug/l	1.0	--	1
1,2-Dichlorobenzene	ND		ug/l	5.0	--	1
1,3-Dichlorobenzene	ND		ug/l	5.0	--	1
1,4-Dichlorobenzene	ND		ug/l	5.0	--	1
p/m-Xylene	ND		ug/l	2.0	--	1
o-xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
Acetone	ND		ug/l	10	--	1
Methyl tert butyl ether	ND		ug/l	10	--	1
Tert-Butyl Alcohol	ND		ug/l	100	--	1
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--	1

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04 Date Collected: 05/07/20 12:00

Client ID: MW-204 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	102		60-140
Fluorobenzene	104		60-140
4-Bromofluorobenzene	98		60-140

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 128,624.1-SIM
Analytical Date: 05/08/20 11:47
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS-SIM - Westborough Lab						
1,4-Dioxane	ND		ug/l	50	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	98		60-140
4-Bromofluorobenzene	84		60-140

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 14,504.1
Analytical Date: 05/12/20 16:16
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 05/12/20 14:37

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Microextractables by GC - Westborough Lab							
1,2-Dibromoethane	ND		ug/l	0.010	--	1	A

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 05/08/20 08:45
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG1368693-10					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	100	--
Tertiary-Amyl Methyl Ether	ND		ug/l	20	--

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 05/08/20 08:45
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG1368693-10					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	100		60-140
Fluorobenzene	104		60-140
4-Bromofluorobenzene	97		60-140

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1-SIM
Analytical Date: 05/08/20 08:45
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02-04 Batch: WG1369113-4					
1,4-Dioxane	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Fluorobenzene	97		60-140
4-Bromofluorobenzene	82		60-140

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 128,624.1
Analytical Date: 05/10/20 12:17
Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1369159-10					
Methylene chloride	ND		ug/l	1.0	--
1,1-Dichloroethane	ND		ug/l	1.5	--
Carbon tetrachloride	ND		ug/l	1.0	--
1,1,2-Trichloroethane	ND		ug/l	1.5	--
Tetrachloroethene	ND		ug/l	1.0	--
1,2-Dichloroethane	ND		ug/l	1.5	--
1,1,1-Trichloroethane	ND		ug/l	2.0	--
Benzene	ND		ug/l	1.0	--
Toluene	ND		ug/l	1.0	--
Ethylbenzene	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	1.0	--
Trichloroethene	ND		ug/l	1.0	--
1,2-Dichlorobenzene	ND		ug/l	5.0	--
1,3-Dichlorobenzene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	5.0	--
p/m-Xylene	ND		ug/l	2.0	--
o-xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
Acetone	ND		ug/l	10	--
Methyl tert butyl ether	ND		ug/l	10	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Pentafluorobenzene	96		60-140
Fluorobenzene	105		60-140
4-Bromofluorobenzene	93		60-140

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 14,504.1
Analytical Date: 05/12/20 15:21
Analyst: AMM

Extraction Method: EPA 504.1
Extraction Date: 05/12/20 14:37

Parameter	Result	Qualifier	Units	RL	MDL	
Microextractables by GC - Westborough Lab for sample(s): 02-04 Batch: WG1369840-1						
1,2-Dibromoethane	ND		ug/l	0.010	--	A

Lab Control Sample Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG1368693-9								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Carbon tetrachloride	100		-		70-130	-		41
1,1,2-Trichloroethane	95		-		70-130	-		45
Tetrachloroethene	105		-		70-130	-		39
1,2-Dichloroethane	100		-		70-130	-		49
1,1,1-Trichloroethane	105		-		70-130	-		36
Benzene	105		-		65-135	-		61
Toluene	100		-		70-130	-		41
Ethylbenzene	100		-		60-140	-		63
Vinyl chloride	95		-		5-195	-		66
1,1-Dichloroethene	100		-		50-150	-		32
cis-1,2-Dichloroethene	105		-		60-140	-		30
Trichloroethene	100		-		65-135	-		48
1,2-Dichlorobenzene	100		-		65-135	-		57
1,3-Dichlorobenzene	85		-		70-130	-		43
1,4-Dichlorobenzene	90		-		65-135	-		57
p/m-Xylene	102		-		60-140	-		30
o-xylene	100		-		60-140	-		30
Acetone	90		-		40-160	-		30
Methyl tert butyl ether	95		-		60-140	-		30
Tert-Butyl Alcohol	100		-		60-140	-		30
Tertiary-Amyl Methyl Ether	100		-		60-140	-		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG1368693-9								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	99				60-140
Fluorobenzene	104				60-140
4-Bromofluorobenzene	92				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-04 Batch: WG1369113-3								
1,4-Dioxane	80		-		60-140	-		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Fluorobenzene	95				60-140
4-Bromofluorobenzene	85				60-140

Lab Control Sample Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1369159-9								
Methylene chloride	100		-		60-140	-		28
1,1-Dichloroethane	95		-		50-150	-		49
Carbon tetrachloride	105		-		70-130	-		41
1,1,2-Trichloroethane	95		-		70-130	-		45
Tetrachloroethene	90		-		70-130	-		39
1,2-Dichloroethane	110		-		70-130	-		49
1,1,1-Trichloroethane	110		-		70-130	-		36
Benzene	110		-		65-135	-		61
Toluene	105		-		70-130	-		41
Ethylbenzene	85		-		60-140	-		63
Vinyl chloride	95		-		5-195	-		66
1,1-Dichloroethene	100		-		50-150	-		32
cis-1,2-Dichloroethene	110		-		60-140	-		30
Trichloroethene	105		-		65-135	-		48
1,2-Dichlorobenzene	100		-		65-135	-		57
1,3-Dichlorobenzene	95		-		70-130	-		43
1,4-Dichlorobenzene	95		-		65-135	-		57
p/m-Xylene	90		-		60-140	-		30
o-xylene	80		-		60-140	-		30
Acetone	86		-		40-160	-		30
Methyl tert butyl ether	95		-		60-140	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1369159-9								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Pentafluorobenzene	99				60-140
Fluorobenzene	107				60-140
4-Bromofluorobenzene	98				60-140

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Microextractables by GC - Westborough Lab	Associated sample(s): 02-04		Batch: WG1369840-2						
1,2-Dibromoethane	**127**	Q	-		80-120	-			A

Matrix Spike Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*	*Column*
Microextractables by GC - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1369840-3 QC Sample: L2018723-01 Client ID: MS Sample													
1,2-Dibromoethane	ND	0.25	0.347	**139**	Q	-	-		80-120	-		20	A
1,2-Dibromo-3-chloropropane	ND	0.25	0.296	119		-	-		80-120	-		20	A
1,2,3-Trichloropropane	ND	0.25	0.317	**127**	Q	-	-		80-120	-		20	A

SEMIVOLATILES

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 05/13/20 12:46
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--	1
Butyl benzyl phthalate	ND		ug/l	5.00	--	1
Di-n-butylphthalate	ND		ug/l	5.00	--	1
Di-n-octylphthalate	ND		ug/l	5.00	--	1
Diethyl phthalate	ND		ug/l	5.00	--	1
Dimethyl phthalate	ND		ug/l	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	78		42-122
2-Fluorobiphenyl	81		46-121
4-Terphenyl-d14	93		47-138

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 05/11/20 18:08
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.100	--	1
Fluoranthene	ND		ug/l	0.100	--	1
Naphthalene	ND		ug/l	0.100	--	1
Benzo(a)anthracene	ND		ug/l	0.100	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Benzo(b)fluoranthene	ND		ug/l	0.100	--	1
Benzo(k)fluoranthene	ND		ug/l	0.100	--	1
Chrysene	ND		ug/l	0.100	--	1
Acenaphthylene	ND		ug/l	0.100	--	1
Anthracene	ND		ug/l	0.100	--	1
Benzo(ghi)perylene	ND		ug/l	0.100	--	1
Fluorene	ND		ug/l	0.100	--	1
Phenanthrene	ND		ug/l	0.100	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--	1
Pyrene	ND		ug/l	0.100	--	1
Pentachlorophenol	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	52		25-87
Phenol-d6	41		16-65
Nitrobenzene-d5	84		42-122
2-Fluorobiphenyl	90		46-121
2,4,6-Tribromophenol	100		45-128
4-Terphenyl-d14	97		47-138

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 05/13/20 13:10
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--	1
Butyl benzyl phthalate	ND		ug/l	5.00	--	1
Di-n-butylphthalate	ND		ug/l	5.00	--	1
Di-n-octylphthalate	ND		ug/l	5.00	--	1
Diethyl phthalate	ND		ug/l	5.00	--	1
Dimethyl phthalate	ND		ug/l	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	75		42-122
2-Fluorobiphenyl	76		46-121
4-Terphenyl-d14	90		47-138

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 05/11/20 18:25
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.100	--	1
Fluoranthene	ND		ug/l	0.100	--	1
Naphthalene	3.75		ug/l	0.100	--	1
Benzo(a)anthracene	0.110		ug/l	0.100	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Benzo(b)fluoranthene	ND		ug/l	0.100	--	1
Benzo(k)fluoranthene	ND		ug/l	0.100	--	1
Chrysene	ND		ug/l	0.100	--	1
Acenaphthylene	0.187		ug/l	0.100	--	1
Anthracene	ND		ug/l	0.100	--	1
Benzo(ghi)perylene	ND		ug/l	0.100	--	1
Fluorene	ND		ug/l	0.100	--	1
Phenanthrene	ND		ug/l	0.100	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--	1
Pyrene	0.131		ug/l	0.100	--	1
Pentachlorophenol	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		25-87
Phenol-d6	39		16-65
Nitrobenzene-d5	80		42-122
2-Fluorobiphenyl	86		46-121
2,4,6-Tribromophenol	95		45-128
4-Terphenyl-d14	96		47-138

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1
Analytical Date: 05/13/20 13:33
Analyst: ALS

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--	1
Butyl benzyl phthalate	ND		ug/l	5.00	--	1
Di-n-butylphthalate	ND		ug/l	5.00	--	1
Di-n-octylphthalate	ND		ug/l	5.00	--	1
Diethyl phthalate	ND		ug/l	5.00	--	1
Dimethyl phthalate	ND		ug/l	5.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	82		42-122
2-Fluorobiphenyl	79		46-121
4-Terphenyl-d14	83		47-138

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 129,625.1-SIM
Analytical Date: 05/11/20 18:42
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.100	--	1
Fluoranthene	ND		ug/l	0.100	--	1
Naphthalene	0.114		ug/l	0.100	--	1
Benzo(a)anthracene	ND		ug/l	0.100	--	1
Benzo(a)pyrene	ND		ug/l	0.100	--	1
Benzo(b)fluoranthene	ND		ug/l	0.100	--	1
Benzo(k)fluoranthene	ND		ug/l	0.100	--	1
Chrysene	ND		ug/l	0.100	--	1
Acenaphthylene	ND		ug/l	0.100	--	1
Anthracene	ND		ug/l	0.100	--	1
Benzo(ghi)perylene	ND		ug/l	0.100	--	1
Fluorene	ND		ug/l	0.100	--	1
Phenanthrene	ND		ug/l	0.100	--	1
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--	1
Pyrene	ND		ug/l	0.100	--	1
Pentachlorophenol	ND		ug/l	1.00	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		25-87
Phenol-d6	33		16-65
Nitrobenzene-d5	82		42-122
2-Fluorobiphenyl	86		46-121
2,4,6-Tribromophenol	92		45-128
4-Terphenyl-d14	96		47-138

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1
Analytical Date: 05/12/20 14:59
Analyst: SZ

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:39

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG1369166-1					
Bis(2-ethylhexyl)phthalate	ND		ug/l	2.20	--
Butyl benzyl phthalate	ND		ug/l	5.00	--
Di-n-butylphthalate	ND		ug/l	5.00	--
Di-n-octylphthalate	ND		ug/l	5.00	--
Diethyl phthalate	ND		ug/l	5.00	--
Dimethyl phthalate	ND		ug/l	5.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
Nitrobenzene-d5	76		42-122
2-Fluorobiphenyl	79		46-121
4-Terphenyl-d14	84		47-138

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 129,625.1-SIM
Analytical Date: 05/11/20 17:51
Analyst: CB

Extraction Method: EPA 625.1
Extraction Date: 05/10/20 15:38

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 02-04 Batch: WG1369167-1					
Acenaphthene	ND		ug/l	0.100	--
Fluoranthene	ND		ug/l	0.100	--
Naphthalene	ND		ug/l	0.100	--
Benzo(a)anthracene	ND		ug/l	0.100	--
Benzo(a)pyrene	ND		ug/l	0.100	--
Benzo(b)fluoranthene	ND		ug/l	0.100	--
Benzo(k)fluoranthene	ND		ug/l	0.100	--
Chrysene	ND		ug/l	0.100	--
Acenaphthylene	ND		ug/l	0.100	--
Anthracene	ND		ug/l	0.100	--
Benzo(ghi)perylene	ND		ug/l	0.100	--
Fluorene	ND		ug/l	0.100	--
Phenanthrene	ND		ug/l	0.100	--
Dibenzo(a,h)anthracene	ND		ug/l	0.100	--
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.100	--
Pyrene	ND		ug/l	0.100	--
Pentachlorophenol	ND		ug/l	1.00	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		25-87
Phenol-d6	42		16-65
Nitrobenzene-d5	78		42-122
2-Fluorobiphenyl	89		46-121
2,4,6-Tribromophenol	94		45-128
4-Terphenyl-d14	103		47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG1369166-2								
Bis(2-ethylhexyl)phthalate	82		-		29-137	-		82
Butyl benzyl phthalate	77		-		1-140	-		60
Di-n-butylphthalate	83		-		8-120	-		47
Di-n-octylphthalate	77		-		19-132	-		69
Diethyl phthalate	81		-		1-120	-		100
Dimethyl phthalate	80		-		1-120	-		183

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Nitrobenzene-d5	70				42-122
2-Fluorobiphenyl	79				46-121
4-Terphenyl-d14	82				47-138

Lab Control Sample Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-04 Batch: WG1369167-2								
Acenaphthene	77		-		60-132	-		30
Fluoranthene	83		-		43-121	-		30
Naphthalene	76		-		36-120	-		30
Benzo(a)anthracene	81		-		42-133	-		30
Benzo(a)pyrene	77		-		32-148	-		30
Benzo(b)fluoranthene	84		-		42-140	-		30
Benzo(k)fluoranthene	88		-		25-146	-		30
Chrysene	76		-		44-140	-		30
Acenaphthylene	82		-		54-126	-		30
Anthracene	80		-		43-120	-		30
Benzo(ghi)perylene	42		-		1-195	-		30
Fluorene	80		-		70-120	-		30
Phenanthrene	75		-		65-120	-		30
Dibenzo(a,h)anthracene	59		-		1-200	-		30
Indeno(1,2,3-cd)pyrene	43		-		1-151	-		30
Pyrene	82		-		70-120	-		30
Pentachlorophenol	96		-		38-152	-		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 02-04 Batch: WG1369167-2								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49				25-87
Phenol-d6	34				16-65
Nitrobenzene-d5	71				42-122
2-Fluorobiphenyl	76				46-121
2,4,6-Tribromophenol	82				45-128
4-Terphenyl-d14	89				47-138

PCBS

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 05/12/20 19:47
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 05/11/20 16:51
Cleanup Method: EPA 3665A
Cleanup Date: 05/12/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/12/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	87		37-123	B
Decachlorobiphenyl	70		38-114	B
2,4,5,6-Tetrachloro-m-xylene	89		37-123	A
Decachlorobiphenyl	77		38-114	A

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 05/12/20 19:59
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 05/11/20 16:51
Cleanup Method: EPA 3665A
Cleanup Date: 05/12/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/12/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		37-123	B
Decachlorobiphenyl	68		38-114	B
2,4,5,6-Tetrachloro-m-xylene	81		37-123	A
Decachlorobiphenyl	76		38-114	A

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 127,608.3
Analytical Date: 05/12/20 20:10
Analyst: CW

Extraction Method: EPA 608.3
Extraction Date: 05/11/20 16:51
Cleanup Method: EPA 3665A
Cleanup Date: 05/12/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/12/20

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/l	0.250	--	1	A
Aroclor 1221	ND		ug/l	0.250	--	1	A
Aroclor 1232	ND		ug/l	0.250	--	1	A
Aroclor 1242	ND		ug/l	0.250	--	1	A
Aroclor 1248	ND		ug/l	0.250	--	1	A
Aroclor 1254	ND		ug/l	0.250	--	1	A
Aroclor 1260	ND		ug/l	0.200	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	62		37-123	B
Decachlorobiphenyl	51		38-114	B
2,4,5,6-Tetrachloro-m-xylene	81		37-123	A
Decachlorobiphenyl	85		38-114	A

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Method Blank Analysis
Batch Quality Control

Analytical Method: 127,608.3
Analytical Date: 05/12/20 05:11
Analyst: AWS

Extraction Method: EPA 608.3
Extraction Date: 05/11/20 09:05
Cleanup Method: EPA 3665A
Cleanup Date: 05/11/20
Cleanup Method: EPA 3660B
Cleanup Date: 05/11/20

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 02-04 Batch: WG1369277-1						
Aroclor 1016	ND		ug/l	0.250	--	A
Aroclor 1221	ND		ug/l	0.250	--	A
Aroclor 1232	ND		ug/l	0.250	--	A
Aroclor 1242	ND		ug/l	0.250	--	A
Aroclor 1248	ND		ug/l	0.250	--	A
Aroclor 1254	ND		ug/l	0.250	--	A
Aroclor 1260	ND		ug/l	0.200	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	58		37-123	B
Decachlorobiphenyl	54		38-114	B
2,4,5,6-Tetrachloro-m-xylene	59		37-123	A
Decachlorobiphenyl	62		38-114	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 02-04 Batch: WG1369277-2									
Aroclor 1016	72		-		50-140	-		36	A
Aroclor 1260	67		-		8-140	-		38	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	59				37-123	B
Decachlorobiphenyl	55				38-114	B
2,4,5,6-Tetrachloro-m-xylene	61				37-123	A
Decachlorobiphenyl	65				38-114	A

METALS

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-01 Date Collected: 05/07/20 08:00

Client ID: SW-1 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Not Specified

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Copper, Total	0.00204		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Iron, Total	0.460		mg/l	0.050	--	1	05/12/20 04:30	05/14/20 10:49	EPA 3005A	19,200.7	LC
Lead, Total	0.00133		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	05/12/20 07:49	05/12/20 13:41	EPA 245.1	3,245.1	GD
Nickel, Total	ND		mg/l	0.00200	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Zinc, Total	0.01057		mg/l	0.01000	--	1	05/12/20 04:30	05/12/20 15:23	EPA 3005A	3,200.8	AM
Total Hardness by SM 2340B - Mansfield Lab											
Hardness	48.4		mg/l	0.660	NA	1	05/12/20 04:30	05/14/20 10:49	EPA 3005A	19,200.7	LC

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02 Date Collected: 05/07/20 09:00

Client ID: MW-101 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00408		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Chromium, Total	0.01423		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Copper, Total	0.02682		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Iron, Total	8.19		mg/l	0.050	--	1	05/12/20 04:30	05/14/20 10:54	EPA 3005A	19,200.7	LC
Lead, Total	0.02276		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	05/12/20 07:49	05/12/20 13:43	EPA 245.1	3,245.1	GD
Nickel, Total	0.00867		mg/l	0.00200	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
Zinc, Total	0.05294		mg/l	0.01000	--	1	05/12/20 04:30	05/12/20 15:28	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	0.014		mg/l	0.010	--	1		05/12/20 15:28	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0022		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Iron, Dissolved	0.190		mg/l	0.050	--	1	05/13/20 02:00	05/13/20 12:50	EPA 3005A	19,200.7	BV
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	05/13/20 02:42	05/13/20 17:09	EPA 245.1	3,245.1	GD
Nickel, Dissolved	ND		mg/l	0.0020	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	05/13/20 02:00	05/13/20 11:24	EPA 3005A	3,200.8	AM

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03 Date Collected: 05/07/20 11:00

Client ID: MW-304 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Arsenic, Total	0.01307		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Chromium, Total	0.05149		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Copper, Total	0.02325		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Iron, Total	34.8		mg/l	0.050	--	1	05/12/20 04:30	05/14/20 10:58	EPA 3005A	19,200.7	LC
Lead, Total	0.04002		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	05/12/20 07:49	05/12/20 13:45	EPA 245.1	3,245.1	GD
Nickel, Total	0.03079		mg/l	0.00200	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
Zinc, Total	0.09382		mg/l	0.01000	--	1	05/12/20 04:30	05/12/20 15:33	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	0.051		mg/l	0.010	--	1		05/12/20 15:33	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	0.0050		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Chromium, Dissolved	0.0234		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0099		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Iron, Dissolved	12.6		mg/l	0.050	--	1	05/13/20 02:00	05/13/20 13:07	EPA 3005A	19,200.7	BV
Lead, Dissolved	0.0304		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Mercury, Dissolved	0.00023		mg/l	0.00020	--	1	05/13/20 02:42	05/13/20 17:12	EPA 245.1	3,245.1	GD
Nickel, Dissolved	0.0112		mg/l	0.0020	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM
Zinc, Dissolved	0.0330		mg/l	0.0100	--	1	05/13/20 02:00	05/13/20 11:29	EPA 3005A	3,200.8	AM

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04 Date Collected: 05/07/20 12:00

Client ID: MW-204 Date Received: 05/07/20

Sample Location: WATERTOWN Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Antimony, Total	ND		mg/l	0.00400	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Arsenic, Total	0.00909		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Cadmium, Total	0.00028		mg/l	0.00020	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Chromium, Total	0.04480		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Copper, Total	0.06474		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Iron, Total	30.4		mg/l	0.050	--	1	05/12/20 04:30	05/14/20 11:03	EPA 3005A	19,200.7	LC
Lead, Total	0.01777		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Mercury, Total	ND		mg/l	0.00020	--	1	05/12/20 07:49	05/12/20 13:48	EPA 245.1	3,245.1	GD
Nickel, Total	0.03652		mg/l	0.00200	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Silver, Total	0.00081		mg/l	0.00040	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
Zinc, Total	0.09813		mg/l	0.01000	--	1	05/12/20 04:30	05/12/20 16:14	EPA 3005A	3,200.8	AM
General Chemistry - Mansfield Lab											
Chromium, Trivalent	0.044		mg/l	0.010	--	1		05/12/20 16:14	NA	107,-	
Dissolved Metals - Mansfield Lab											
Antimony, Dissolved	ND		mg/l	0.0040	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Copper, Dissolved	0.0126		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Iron, Dissolved	0.188		mg/l	0.050	--	1	05/13/20 02:00	05/13/20 13:12	EPA 3005A	19,200.7	BV
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Mercury, Dissolved	ND		mg/l	0.00020	--	1	05/13/20 02:42	05/13/20 16:52	EPA 245.1	3,245.1	GD
Nickel, Dissolved	0.0058		mg/l	0.0020	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	05/13/20 02:00	05/13/20 11:34	EPA 3005A	3,200.8	AM

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1369371-1										
Iron, Total	ND		mg/l	0.050	--	1	05/12/20 04:30	05/12/20 10:30	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Hardness by SM 2340B - Mansfield Lab for sample(s): 01-04 Batch: WG1369371-1										
Hardness	ND		mg/l	0.660	NA	1	05/12/20 04:30	05/14/20 09:48	19,200.7	LC

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1369376-1										
Antimony, Total	ND		mg/l	0.00400	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Arsenic, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Cadmium, Total	ND		mg/l	0.00020	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Chromium, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Copper, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Lead, Total	ND		mg/l	0.00100	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Nickel, Total	ND		mg/l	0.00200	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Selenium, Total	ND		mg/l	0.00500	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Silver, Total	ND		mg/l	0.00040	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM
Zinc, Total	ND		mg/l	0.01000	--	1	05/12/20 04:30	05/12/20 14:09	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1369378-1										
Mercury, Total	ND		mg/l	0.00020	--	1	05/12/20 07:49	05/12/20 13:23	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02-04 Batch: WG1369860-1										
Antimony, Dissolved	ND		mg/l	0.0040	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Arsenic, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Cadmium, Dissolved	ND		mg/l	0.0002	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Chromium, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Copper, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Lead, Dissolved	ND		mg/l	0.0010	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Nickel, Dissolved	ND		mg/l	0.0020	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Selenium, Dissolved	ND		mg/l	0.0050	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Silver, Dissolved	ND		mg/l	0.0004	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM
Zinc, Dissolved	ND		mg/l	0.0100	--	1	05/13/20 02:00	05/13/20 11:03	3,200.8	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02-04 Batch: WG1369861-1										
Iron, Dissolved	ND		mg/l	0.050	--	1	05/13/20 02:00	05/13/20 12:42	19,200.7	BV

Prep Information

Digestion Method: EPA 3005A

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02-04 Batch: WG1369862-1										
Mercury, Dissolved	ND		mg/l	0.00020	--	1	05/13/20 02:42	05/13/20 16:46	3,245.1	GD

Prep Information

Digestion Method: EPA 245.1

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1369371-2								
Iron, Total	111		-		85-115	-		
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-04 Batch: WG1369371-2								
Hardness	103		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1369376-2								
Antimony, Total	90		-		85-115	-		
Arsenic, Total	104		-		85-115	-		
Cadmium, Total	104		-		85-115	-		
Chromium, Total	99		-		85-115	-		
Copper, Total	92		-		85-115	-		
Lead, Total	104		-		85-115	-		
Nickel, Total	99		-		85-115	-		
Selenium, Total	100		-		85-115	-		
Silver, Total	98		-		85-115	-		
Zinc, Total	101		-		85-115	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1369378-2								
Mercury, Total	104		-		85-115	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 Batch: WG1369860-2					
Antimony, Dissolved	97	-	85-115	-	
Arsenic, Dissolved	98	-	85-115	-	
Cadmium, Dissolved	111	-	85-115	-	
Chromium, Dissolved	100	-	85-115	-	
Copper, Dissolved	98	-	85-115	-	
Lead, Dissolved	110	-	85-115	-	
Nickel, Dissolved	102	-	85-115	-	
Selenium, Dissolved	102	-	85-115	-	
Silver, Dissolved	102	-	85-115	-	
Zinc, Dissolved	105	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 Batch: WG1369861-2					
Iron, Dissolved	100	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 Batch: WG1369862-2					
Mercury, Dissolved	98	-	85-115	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369371-3 QC Sample: L2019403-01 Client ID: MS Sample												
Iron, Total	0.523	1	1.60	108		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369371-3 QC Sample: L2019403-01 Client ID: MS Sample												
Hardness	424	66.2	474	76		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369371-7 QC Sample: L2019134-01 Client ID: MS Sample												
Iron, Total	7.00	1	7.83	83		-	-		75-125	-		20
Total Hardness by SM 2340B - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369371-7 QC Sample: L2019134-01 Client ID: MS Sample												
Hardness	375	66.2	431	85		-	-		75-125	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369376-3 QC Sample: L2019134-01 Client ID: MS Sample												
Antimony, Total	ND	0.5	0.5445	109		-	-		70-130	-		20
Arsenic, Total	0.00737	0.12	0.1284	101		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.05416	106		-	-		70-130	-		20
Chromium, Total	0.00109	0.2	0.2102	104		-	-		70-130	-		20
Copper, Total	0.00270	0.25	0.2492	98		-	-		70-130	-		20
Lead, Total	0.00477	0.51	0.5503	107		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.5103	102		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1231	102		-	-		70-130	-		20
Silver, Total	ND	0.05	0.04979	100		-	-		70-130	-		20
Zinc, Total	ND	0.5	0.5223	104		-	-		70-130	-		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369378-3 QC Sample: L2018885-01 Client ID: MS Sample												
Mercury, Total	ND	0.005	0.00344	**69**	Q	-	-		70-130	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369860-3 QC Sample: L2018950-02 Client ID: MW-101										
Antimony, Dissolved	ND	0.5	0.4397	88		-	-	70-130	-	20
Arsenic, Dissolved	ND	0.12	0.3912	**326**	Q	-	-	70-130	-	20
Cadmium, Dissolved	ND	0.051	0.0527	103		-	-	70-130	-	20
Chromium, Dissolved	ND	0.2	0.1888	94		-	-	70-130	-	20
Copper, Dissolved	0.0022	0.25	0.2364	94		-	-	70-130	-	20
Lead, Dissolved	ND	0.51	0.5249	103		-	-	70-130	-	20
Nickel, Dissolved	ND	0.5	0.4804	96		-	-	70-130	-	20
Selenium, Dissolved	ND	0.12	0.1112	93		-	-	70-130	-	20
Silver, Dissolved	ND	0.05	0.0491	98		-	-	70-130	-	20
Zinc, Dissolved	ND	0.5	0.5162	103		-	-	70-130	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369861-3 QC Sample: L2018950-02 Client ID: MW-101										
Iron, Dissolved	0.190	1	1.15	96		-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369862-3 QC Sample: L2018950-04 Client ID: MW-204										
Mercury, Dissolved	ND	0.005	0.00430	86		-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369371-8 QC Sample: L2019134-01 Client ID: DUP Sample						
Iron, Total	7.00	6.98	mg/l	0		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369376-4 QC Sample: L2019134-01 Client ID: DUP Sample						
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	0.00737	0.00761	mg/l	3		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	0.00109	ND	mg/l	NC		20
Copper, Total	0.00270	0.00240	mg/l	12		20
Lead, Total	0.00477	0.00476	mg/l	0		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Silver, Total	ND	ND	mg/l	NC		20
Zinc, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1369378-4 QC Sample: L2018885-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/l	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369860-4 QC Sample: L2018950-02 Client ID: MW-101					
Antimony, Dissolved	ND	ND	mg/l	NC	20
Arsenic, Dissolved	ND	ND	mg/l	NC	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Chromium, Dissolved	ND	ND	mg/l	NC	20
Copper, Dissolved	0.0022	0.0024	mg/l	9	20
Lead, Dissolved	ND	ND	mg/l	NC	20
Nickel, Dissolved	ND	ND	mg/l	NC	20
Selenium, Dissolved	ND	ND	mg/l	NC	20
Silver, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	ND	ND	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369861-4 QC Sample: L2018950-02 Client ID: MW-101					
Iron, Dissolved	0.190	0.185	mg/l	3	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02-04 QC Batch ID: WG1369862-4 QC Sample: L2018950-04 Client ID: MW-204					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-01
Client ID: SW-1
Sample Location: WATERTOWN

Date Collected: 05/07/20 08:00
Date Received: 05/07/20
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/08/20 15:01	05/08/20 21:54	121,4500NH3-BH	AT

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-02
Client ID: MW-101
Sample Location: WATERTOWN

Date Collected: 05/07/20 09:00
Date Received: 05/07/20
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	51.		mg/l	5.0	NA	1	-	05/08/20 13:33	121,2540D	EM
Cyanide, Total	ND		mg/l	0.005	--	1	05/08/20 13:20	05/08/20 17:08	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/07/20 20:33	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/08/20 15:01	05/08/20 21:55	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	05/11/20 07:05	05/11/20 07:15	74,1664A	DR
Phenolics, Total	ND		mg/l	0.030	--	1	05/08/20 05:05	05/11/20 08:20	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/08/20 00:32	05/08/20 01:36	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	172.		mg/l	5.00	--	10	-	05/08/20 17:11	44,300.0	AT

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-03
Client ID: MW-304
Sample Location: WATERTOWN
Sample Depth:
Matrix: Water

Date Collected: 05/07/20 11:00
Date Received: 05/07/20
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	960		mg/l	50	NA	10	-	05/08/20 13:33	121,2540D	EM
Cyanide, Total	0.843		mg/l	0.025	--	5	05/08/20 13:20	05/08/20 17:11	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/07/20 20:33	121,4500CL-D	AS
Nitrogen, Ammonia	0.325		mg/l	0.075	--	1	05/08/20 15:01	05/08/20 21:56	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	05/11/20 07:05	05/11/20 07:15	74,1664A	DR
Phenolics, Total	ND		mg/l	0.030	--	1	05/08/20 05:05	05/11/20 09:18	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/08/20 00:32	05/08/20 01:37	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	726.		mg/l	25.0	--	50	-	05/08/20 21:00	44,300.0	AT

Project Name: GALEN ST.
Project Number: B0849
Lab Number: L2018950
Report Date: 05/15/20

SAMPLE RESULTS

Lab ID: L2018950-04
Client ID: MW-204
Sample Location: WATERTOWN
Sample Depth:
Matrix: Water

Date Collected: 05/07/20 12:00
Date Received: 05/07/20
Field Prep: Refer to COC

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total Suspended	3300		mg/l	100	NA	20	-	05/08/20 13:33	121,2540D	EM
Cyanide, Total	0.008		mg/l	0.005	--	1	05/08/20 13:20	05/08/20 17:12	121,4500CN-CE	LH
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/07/20 20:33	121,4500CL-D	AS
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/08/20 15:01	05/08/20 21:57	121,4500NH3-BH	AT
TPH, SGT-HEM	ND		mg/l	4.00	--	1	05/11/20 07:05	05/11/20 07:15	74,1664A	DR
Phenolics, Total	ND		mg/l	0.030	--	1	05/08/20 05:05	05/11/20 08:26	4,420.1	MV
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/08/20 00:32	05/08/20 01:38	1,7196A	CB
Anions by Ion Chromatography - Westborough Lab										
Chloride	252.		mg/l	5.00	--	10	-	05/08/20 17:33	44,300.0	AT

Project Name: GALEN ST. **Lab Number:** L2018950

Project Number: B0849 **Report Date:** 05/15/20

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1368482-1										
Chlorine, Total Residual	ND		mg/l	0.02	--	1	-	05/07/20 20:33	121,4500CL-D	AS
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1368519-1										
Chromium, Hexavalent	ND		mg/l	0.010	--	1	05/08/20 00:32	05/08/20 01:31	1,7196A	CB
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1368560-1										
Phenolics, Total	ND		mg/l	0.030	--	1	05/08/20 05:05	05/11/20 08:18	4,420.1	MV
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1368625-1										
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	05/08/20 13:33	121,2540D	EM
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG1368649-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	05/08/20 15:01	05/08/20 21:50	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1368790-1										
Cyanide, Total	ND		mg/l	0.005	--	1	05/08/20 11:10	05/08/20 16:23	121,4500CN-CE	LH
Anions by Ion Chromatography - Westborough Lab for sample(s): 02-04 Batch: WG1368885-1										
Chloride	ND		mg/l	0.500	--	1	-	05/08/20 16:38	44,300.0	AT
General Chemistry - Westborough Lab for sample(s): 02-04 Batch: WG1369280-1										
TPH, SGT-HEM	ND		mg/l	4.00	--	1	05/11/20 07:05	05/11/20 07:15	74,1664A	DR

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1368482-2								
Chlorine, Total Residual	96		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1368519-2								
Chromium, Hexavalent	101		-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1368560-2								
Phenolics, Total	92		-		70-130	-		
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1368625-2								
Solids, Total Suspended	94		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG1368649-2								
Nitrogen, Ammonia	101		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1368790-2								
Cyanide, Total	97		-		90-110	-		
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-04 Batch: WG1368885-2								
Chloride	92		-		90-110	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: GALEN ST.

Project Number: B0849

Lab Number: L2018950

Report Date: 05/15/20

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04 Batch: WG1369280-2					
TPH	88	-	64-132	-	34

Matrix Spike Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368482-4 QC Sample: L2018950-02 Client ID: MW-101												
Chlorine, Total Residual	ND	0.25	0.26	104		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368519-4 QC Sample: L2018950-02 Client ID: MW-101												
Chromium, Hexavalent	ND	0.1	0.102	102		-	-		85-115	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368560-4 QC Sample: L2018950-02 Client ID: MW-101												
Phenolics, Total	ND	0.4	0.37	92		-	-		70-130	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1368649-4 QC Sample: L2018756-06 Client ID: MS Sample												
Nitrogen, Ammonia	0.137	4	3.71	89		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368790-4 QC Sample: L2018950-04 Client ID: MW-204												
Cyanide, Total	0.008	0.2	0.192	92		-	-		90-110	-		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368885-3 QC Sample: L2018805-01 Client ID: MS Sample												
Chloride	10.2	4	14.0	95		-	-		90-110	-		18
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1369280-4 QC Sample: L2018994-01 Client ID: MS Sample												
TPH	ND	19	14.0	74		-	-		64-132	-		34

Lab Duplicate Analysis
Batch Quality Control

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368482-3 QC Sample: L2018950-04 Client ID: MW-204						
Chlorine, Total Residual	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368519-3 QC Sample: L2018950-02 Client ID: MW-101						
Chromium, Hexavalent	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368560-3 QC Sample: L2018950-02 Client ID: MW-101						
Phenolics, Total	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368625-3 QC Sample: L2018950-03 Client ID: MW-304						
Solids, Total Suspended	960	1100	mg/l	14		29
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1368649-3 QC Sample: L2018756-06 Client ID: DUP Sample						
Nitrogen, Ammonia	0.137	0.077	mg/l	**55**	Q	20
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368790-3 QC Sample: L2018950-02 Client ID: MW-101						
Cyanide, Total	ND	ND	mg/l	NC		30
Anions by Ion Chromatography - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1368885-4 QC Sample: L2018805-01 Client ID: DUP Sample						
Chloride	10.2	10.0	mg/l	2		18
General Chemistry - Westborough Lab Associated sample(s): 02-04 QC Batch ID: WG1369280-3 QC Sample: L2018863-01 Client ID: DUP Sample						
TPH	ND	ND	mg/l	NC		34

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2018950-01A	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),HARDU(180),AG-2008T(180),AS-2008T(180),SE-2008T(180),HG-U(28),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2018950-01B	Plastic 500ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		NH3-4500(28)
L2018950-02A	Vial unpreserved	A	NA		3.2	Y	Absent		SUB-ETHANOL(14)
L2018950-02A1	Vial unpreserved	A	NA		3.2	Y	Absent		SUB-ETHANOL(14)
L2018950-02A2	Vial unpreserved	A	NA		3.2	Y	Absent		SUB-ETHANOL(14)
L2018950-02B	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02B1	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02C	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02C1	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02D	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02D1	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-02E	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		504(14)
L2018950-02F	Vial Na2S2O3 preserved	A	NA		3.2	Y	Absent		504(14)
L2018950-02G	Plastic 250ml NaOH preserved	A	>12	>12	3.2	Y	Absent		TCN-4500(14)
L2018950-02H	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		FE-RI(180),AG-2008S(180),CR-2008S(180),ZN-2008S(180),AS-2008S(180),PB-2008S(180),NI-2008S(180),SE-2008S(180),CD-2008S(180),CU-2008S(180),SB-2008S(180),HG-R(28)

*Values in parentheses indicate holding time in days

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2018950-02J	Plastic 250ml HNO3 preserved	A	<2	<2	3.2	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),AG-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2018950-02K	Plastic 500ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		NH3-4500(28)
L2018950-02L	Plastic 950ml unpreserved	A	7	7	3.2	Y	Absent		HEXCR-7196(1),CL-300(28),TRC-4500(1)
L2018950-02M	Plastic 950ml unpreserved	A	7	7	3.2	Y	Absent		TSS-2540(7)
L2018950-02N	Amber 950ml H2SO4 preserved	A	<2	<2	3.2	Y	Absent		TPHENOL-420(28)
L2018950-02P	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		TPH-1664(28)
L2018950-02Q	Amber 1000ml HCl preserved	A	NA		3.2	Y	Absent		TPH-1664(28)
L2018950-02R	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L2018950-02S	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L2018950-02T	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		PCB-608.3(7)
L2018950-02U	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-02V	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-02W	Amber 1000ml Na2S2O3	A	7	7	3.2	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-03A	Vial unpreserved	B	NA		5.5	Y	Absent		SUB-ETHANOL(14)
L2018950-03A1	Vial unpreserved	B	NA		5.5	Y	Absent		SUB-ETHANOL(14)
L2018950-03A2	Vial unpreserved	B	NA		5.5	Y	Absent		SUB-ETHANOL(14)
L2018950-03B	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03B1	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03C	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03C1	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03D	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03D1	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		624.1-RGP(7),624.1-SIM-RGP(7)
L2018950-03E	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		504(14)
L2018950-03F	Vial Na2S2O3 preserved	B	NA		5.5	Y	Absent		504(14)
L2018950-03G	Plastic 250ml NaOH preserved	B	>12	>12	5.5	Y	Absent		TCN-4500(14)

*Values in parentheses indicate holding time in days

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2018950-03H	Plastic 250ml HNO3 preserved	B	<2	<2	5.5	Y	Absent		CR-2008S(180),AG-2008S(180),FE-RI(180),AS-2008S(180),PB-2008S(180),ZN-2008S(180),NI-2008S(180),SE-2008S(180),CU-2008S(180),CD-2008S(180),SB-2008S(180),HG-R(28)
L2018950-03J	Plastic 250ml HNO3 preserved	B	<2	<2	5.5	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),AG-2008T(180),AS-2008T(180),HG-U(28),SE-2008T(180),CR-2008T(180),SB-2008T(180),PB-2008T(180)
L2018950-03K	Plastic 500ml H2SO4 preserved	B	<2	<2	5.5	Y	Absent		NH3-4500(28)
L2018950-03L	Plastic 950ml unpreserved	B	7	7	5.5	Y	Absent		HEXCR-7196(1),CL-300(28),TRC-4500(1)
L2018950-03M	Plastic 950ml unpreserved	B	7	7	5.5	Y	Absent		TSS-2540(7)
L2018950-03N	Amber 950ml H2SO4 preserved	B	<2	<2	5.5	Y	Absent		TPHENOL-420(28)
L2018950-03P	Amber 1000ml HCl preserved	B	NA		5.5	Y	Absent		TPH-1664(28)
L2018950-03Q	Amber 1000ml HCl preserved	B	NA		5.5	Y	Absent		TPH-1664(28)
L2018950-03R	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		PCB-608.3(7)
L2018950-03S	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		PCB-608.3(7)
L2018950-03T	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		PCB-608.3(7)
L2018950-03U	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-03V	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-03W	Amber 1000ml Na2S2O3	B	7	7	5.5	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-04A	Vial unpreserved	C	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L2018950-04A1	Vial unpreserved	C	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L2018950-04A2	Vial unpreserved	C	NA		4.0	Y	Absent		SUB-ETHANOL(14)
L2018950-04B	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04B1	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04C	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04C1	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04D	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04D1	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		624.1-SIM-RGP(7),624.1-RGP(7)
L2018950-04E	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		504(14)

*Values in parentheses indicate holding time in days

Project Name: GALEN ST.
Project Number: B0849

Lab Number: L2018950
Report Date: 05/15/20

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2018950-04F	Vial Na2S2O3 preserved	C	NA		4.0	Y	Absent		504(14)
L2018950-04G	Plastic 250ml NaOH preserved	C	>12	>12	4.0	Y	Absent		TCN-4500(14)
L2018950-04H	Plastic 250ml HNO3 preserved	C	<2	<2	4.0	Y	Absent		AG-2008S(180),CR-2008S(180),FE-RI(180),AS-2008S(180),PB-2008S(180),ZN-2008S(180),SE-2008S(180),NI-2008S(180),CU-2008S(180),SB-2008S(180),CD-2008S(180),HG-R(28)
L2018950-04J	Plastic 250ml HNO3 preserved	C	<2	<2	4.0	Y	Absent		CD-2008T(180),NI-2008T(180),ZN-2008T(180),FE-UI(180),CU-2008T(180),SE-2008T(180),AS-2008T(180),HG-U(28),AG-2008T(180),CR-2008T(180),PB-2008T(180),SB-2008T(180)
L2018950-04K	Plastic 500ml H2SO4 preserved	C	<2	<2	4.0	Y	Absent		NH3-4500(28)
L2018950-04L	Plastic 950ml unpreserved	C	7	7	4.0	Y	Absent		CL-300(28),HEXCR-7196(1),TRC-4500(1)
L2018950-04M	Plastic 950ml unpreserved	C	7	7	4.0	Y	Absent		TSS-2540(7)
L2018950-04N	Amber 950ml H2SO4 preserved	C	<2	<2	4.0	Y	Absent		TPHENOL-420(28)
L2018950-04P	Amber 1000ml HCl preserved	C	NA		4.0	Y	Absent		TPH-1664(28)
L2018950-04Q	Amber 1000ml HCl preserved	C	NA		4.0	Y	Absent		TPH-1664(28)
L2018950-04R	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		PCB-608.3(7)
L2018950-04S	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		PCB-608.3(7)
L2018950-04T	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		PCB-608.3(7)
L2018950-04U	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-04V	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)
L2018950-04W	Amber 1000ml Na2S2O3	C	7	7	4.0	Y	Absent		625.1-RGP(7),625.1-SIM-RGP(7)

*Values in parentheses indicate holding time in days

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PAH Total: With respect to Alkylated PAH analyses, the 'PAHs, Total' result is defined as the summation of results for all or a subset of the following compounds: Naphthalene, C1-C4 Naphthalenes, 2-Methylnaphthalene, 1-Methylnaphthalene, Biphenyl, Acenaphthylene, Acenaphthene, Fluorene, C1-C3 Fluorenes, Phenanthrene, C1-C4 Phenanthrenes/Anthracenes, Anthracene, Fluoranthene, Pyrene, C1-C4 Fluoranthenes/Pyrenes, Benz(a)anthracene, Chrysene, C1-C4 Chrysenes, Benzo(b)fluoranthene, Benzo(j)+(k)fluoranthene, Benzo(e)pyrene, Benzo(a)pyrene, Perylene, Indeno(1,2,3-cd)pyrene, Dibenz(ah)+(ac)anthracene, Benzo(g,h,i)perylene. If a 'Total' result is requested, the results of its individual components will also be reported.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

The target compound Chlordane (CAS No. 57-74-9) is reported for GC ECD analyses. Per EPA,this compound "refers to a mixture of chlordane isomers, other chlorinated hydrocarbons and numerous other components." (Reference: USEPA Toxicological Review of Chlordane, In Support of Summary Information on the Integrated Risk Information System (IRIS), December 1997.)

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less

Report Format: Data Usability Report

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

Data Qualifiers

than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	GALEN ST.	**Lab Number:**	L2018950
Project Number:	B0849	**Report Date:**	05/15/20

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

3 Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

4 Methods for Chemical Analysis of Water and Wastes. EPA 600/4-79-020. Revised March 1983.

14 Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water. EPA/600/4-88/039, Revised July 1991.

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

44 Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.

74 Method 1664,Revision A: N-Hexane Extractable Material (HEM; Oil & Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-polar Material) by Extraction and Gravimetry, EPA-821-R-98-002, February 1999.

107 Alpha Analytical - In-house calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

127 Method 608.3: Organochlorine Pesticides and PCBs by GC/HSD, EPA 821-R-16-009, December 2016.

128 Method 624.1: Purgeables by GC/MS, EPA 821-R-16-008, December 2016.

129 Method 625.1: Base/Neutrals and Acids by GC/MS, EPA 821-R-16-007, December 2016.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene, Naphthalene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
EPA TO-12 Non-methane organics
EPA 3C Fixed gases
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb**,** As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 5/7/20

ALPHA Job #: L2018950

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Client Information

Client: Tighe + Bond
Address: 1 University Ave
Westwood MA 02090
Phone: 9786046953
Email: JSLoitherstein@tighebond.com
bgammons@tighebond.com
acantara@tighebond.com

Project Information

Project Name: Galen St
Project Location: Watertown
Project #: BOS49
Project Manager: Joel Loitherstein
ALPHA Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 5/14/20

Report Information - Data Deliverables

☒ ADEx ☒ EMAIL

Billing Information

☒ Same as Client info PO #:

Regulatory Requirements & Project Information Requirements

☐ Yes ☒ No MA MCP Analytical Methods ☐ Yes ☒ No CT RCP Analytical Methods
☐ Yes ☒ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☒ No GW1 Standards (Info Required for Metals & EPH with Targets)
☒ Yes ☐ No NPDES RGP
☐ Other State /Fed Program _____ Criteria _____

Additional Project Information:
(1) RGP metals: As, Cd, Cr+3, Cr+6, Cu, Fe, Pb, Hg, Ni, Se, Zn, Ag, Sb
(2) Only Report VOCs/SVOCs on the attached table (RGP List)
Please use RGP test methods and detection limits

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC: 8260 ☒ 624 ☐ 524.2 RGPlist	SVOC: ABN ☐ PAH 625 RGPlist	METALS: MCP 13 ☐ MCP 14 ☐ RCP 15	METALS: RCRA5 ☐ RCRA8 ☐ PP13	EPH: Ranges & Targets ☐ Ranges Only	VPH: Ranges & Targets ☐ Ranges Only 8260 RGP	PCB ☐ PEST 608	TPH: Quant Only ☐ Fingerprint 1664	Ammonia, Chloride, TSS	RGP metals (1)/Hardness	Cyanide	Methane, ethane, ammonia	Sample Comments	TOTAL # BOTTLES
18950-01	SW-1	5/7/20	800	Fresh Water	CB									X			X		2
02	MW-101	5/7/20	900	GW	CB	X	X			X	X	X	X	X	X	X			26
03	MW-304	5/7/20	1100	GW	CB	X	X			X	X	X	X	X	X	X			26
04	MW-204	5/7/20	1200	GW	CB	X	X			X	X	X	X	X	X	X			26

Container Type	V	A				A	A	A	A/G	P	P	P/G	V	P					
Preservative	H	H				D	H	B	A/G	NA	C	C	A	D					

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
Collane Brotton	5/7/20 1315		5/7/20 1315
	5/7/20 1648		5/7/20 1648

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)

Additional Resource for Selecting Sufficiently Sensitive Test Methods for RGP Notice of Intent (NOI) Sampling Requirements[1]

Table 1: Parameters, Required Minimum Levels (MLs), and Common Test Methods[2]

Parameter	Requirements	
	ML Must Be ≤	Commonly Used Test Method(s) from 40 C.F.R. Part 136 that Generally Achieves the ML Noted
A. Inorganics		
Ammonia	0.1 mg/L	SM 4500 B and D; 350.1
Chloride	230 mg/L	SM 4110 B; 300.0
Total Residual Chlorine	50 µg/L	SM 4500-Cl G and E
Total Suspended Solids	30 mg/L	SM 2540 D
Antimony	206 µg/L	200.8 and 200.9
Arsenic	FW= 10 µg/L SW= 36 µg/L	200.8 and 200.9 in FW 200.7, 200.8 and 200.9 in SW
Cadmium	FW= 0.25 µg/L SW= 8.8 µg/L in MA SW= 9.3 µg/L in NH	200.8 in FW 200.8 and 200.9 in SW
Chromium III	FW= 74 µg/L SW= 100 µg/L	200.7, 200.8 and 200.9
Chromium VI	FW= 11 µg/L SW= 50 µg/L	218.6
Copper	FW= 9 µg/L SW= 3.1 µg/L	200.8 and 200.9
Iron	FW = 1,000 µg/L	200.7 and 200.8
Lead	FW= 2.5 µg/L SW= 8.1 µg/L	200.8 and 200.9
Mercury	FW= 0.77 µg/L SW= 0.739 µg/L	245.1, 245.7 and 1631E
Nickel	FW= 52 µg/L SW= 8.2 µg/L	200.8 and 200.9
Selenium	FW= 5.0 µg/L SW= 71 µg/L	200.8 and 200.9 in FW 200.7, 200.8 and 200.9 in SW
Silver	FW= 3.2 µg/L SW= 1.9 µg/L	200.8
Zinc	FW= 120 µg/L SW= 81 µg/L	200.7 and 200.8
Cyanide	FW = 5.2 µg/L SW = 5.0 µg/L	SM 4500-CN
B. Non-Halogenated Volatile Organic Compounds		
Total BTEX[3]	100 µg/L (sum of individual MLs)	624 and 1624B
Benzene	5.0 µg/L	624 and 1624B
1,4 Dioxane	50 µg/L	SIM
Acetone	7.97 mg/L	524.2
Phenol	300 µg/L	420.1 and 420.4

Parameter	Requirements	
	ML Must Be ≤	Commonly Used Test Method(s) from 40 C.F.R. Part 136 that Generally Achieves the ML Noted
C. Halogenated Volatile Organic Compounds		
Carbon Tetrachloride	1.6 µg/L in MA 4.4 µg/L in NH	624
1,2 Dichlorobenzene	600 µg/L	624
1,3 Dichlorobenzene	320 µg/L	624
1,4 Dichlorobenzene	5.0 µg/L	624
Total Dichlorobenzene[4]	Not required in MA 763 µg/L in NH (sum of individual MLs)	624
1,1 Dichloroethane	70 µg/L	624
1,2 Dichloroethane	5.0 µg/L	624
1,1 Dichloroethylene	3.2 µg/L	624
Ethylene Dibromide	0.05 µg/L	SIM
Methylene Chloride	4.6 µg/L	624
1,1,1 Trichloroethane	200 µg/L	624
1,1,2 Trichloroethane	5.0 µg/L	624
Trichloroethylene	5.0 µg/L	624
Tetrachloroethylene	3.3 µg/L in MA 5.0 µg/L in NH	624
cis-1,2 Dichloroethylene	70 µg/L	624
Vinyl Chloride	2.0 µg/L	624
D. Non-Halogenated Semi-Volatile Organic Compounds		
Total Phthalates[5]	190 µg/L in MA FW = 3.0 µg/L in NH SW = 3.4 µg/L in NH	625 and 1625B in MA 625 in NH
Diethylhexyl Phthalate	2.2 µg/L in MA 5.9 µg/L in NH	625 in MA 625 and 1625B in NH
Total Group I Polycyclic Aromatic Hydrocarbons[6]	1.0 µg/L (sum of individual MLs)	SIM
Benzo(a)anthracene	0.1 µg/L	SIM
Benzo(a)pyrene	0.1 µg/L	SIM
Benzo(b)fluoranthene	0.1 µg/L	SIM
Benzo(k)fluoranthene	0.1 µg/L	SIM
Chrysene	0.1 µg/L	SIM
Dibenzo(a,h)anthracene	0.1 µg/L	SIM
Indeno(1,2,3-cd)pyrene	0.1 µg/L	SIM
Total Group II Polycyclic Aromatic Hydrocarbons[7]	100 µg/L (sum of individual MLs)	625
Naphthalene	20 µg/L	625

Parameter	Requirements	
	ML Must Be ≤	Commonly Used Test Method(s) from 40 C.F.R. Part 136 that Generally Achieves the ML Noted
E. Halogenated Semi-Volatile Organic Compounds		
Total Polychlorinated Biphenyls[8]	0.5 µg/L	608
Pentachlorophenol[9]	1.0 µg/L	625
F. Fuels Parameters		
Total Petroleum Hydrocarbons	5.0 mg/L	1664A and B
Ethanol	0.4 mg/L	1666/1671/D3695
Methyl-tert-Butyl Ether	20 µg/L in MA 70 µg/L in NH	SIM
tert-Butyl Alcohol	120 µg/L in MA 40 µg/L in NH	1666
tert-Amyl Methyl Ether	90 µg/L in MA 140 µg/L in NH	624

Table 1 Footnotes:

[1] The minimum levels specified in this table will satisfy the sufficiently sensitive test method requirements for the purposes of sample analysis used to prepare a Notice of Intent (NOI) for coverage under the Remediation General Permit. Where less sensitive minimum levels (MLs) may be used upon authorization to discharge, these MLs will be noted in the written authorization to discharge for an individual site.

[2] The following abbreviations are used in Table 1, above:
- [a] mg/L = milligrams per liter
- [b] µg/L = micrograms per liter
- [c] FW = freshwater
- [d] SW = saltwater
- [e] SM = standard method
- [d] SIM = selected ion monitoring

[3] Total BTEX is the sum of: benzene (CAS No. 71432); toluene (CAS No. 108883); ethylbenzene (CAS No. 100-41-4); and (m,p,o) xylenes (CAS Nos. 108-88-3, 106-42-3, 95-47-6, and 1330-20-7).

[4] Total dichlorobenzene is the sum of: 1,2 dichlorobenzene (CAS No. 95-50-1); 1,3 dichlorobenzene (CAS No. 541-73-1); and 1,4 dichlorobenzene (CAS No. 106-46-7).

[5] Total Phthalates is the sum of: diethylhexyl phthalate (CAS No. 117-81-7); butyl benzyl phthalate (CAS No. 85-68-7); di-n-butyl phthalate (CAS No. 84-74-2); diethyl phthalate (CAS No. 84-66-2); dimethyl phthalate (CAS No. 131-11-3); di-n-octyl phthalate (CAS No. 117-84-0). For the diethylhexyl phthalate in NH, EPA anticipates that the applicable ML will be revised to 2.2 µg/L, once incorporated into the RGP for sites in New Hampshire.

[6] Total Group I PAHs is the sum of: benzo(a)anthracene (CAS No. 56-55-3); benzo(a)pyrene (CAS No. 50-32-8); benzo(b)fluoranthene (CAS No. 205-99-2); benzo(k)fluoranthene (CAS No. 207-08-9; chrysene (CAS No. 218-01); dibenzo(a,h)anthracene (CAS No. 53-70-3); indeno(1,2,3-cd)pyrene (CAS No. 193-39-5).

[7] Total Group II PAHs is the sum of: acenaphthene (CAS No. 83-32-9); acenaphthylene (CAS No. 208-96-8); anthracene (CAS No. 120-12-7); benzo(g,h,i)perylene (CAS No. 191-24-2); fluoranthene (CAS No. 206-44-0); fluorene (CAS No. 86-73-7); naphthalene (CAS No. 91-20-3); phenanthrene (CAS No. 85-01-8); pyrene (CAS No. 129-00-0).

[8] Total PCBs is the sum of the following aroclors: PCB-1016, PCB-1221, PCB-1232, PCB-1242, PCB-1248, PCB-1254, and PCB-1260.

[8] The ML for analysis of pentachlorophenol must be as close to 1.0 µg/L as possible, not to exceed ≤ 5.0 µg/L.

ALPHA ANALYTICAL
World Class Chemistry

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2018950

Client Information	Project Information	Regulatory Requirements/Report Limits
Client: Alpha Analytical Labs Address: Eight Walkup Drive Westborough, MA 01581-1019 Phone: 508-439-5132 Email: akane@alphalab.com	Project Location: MA Project Manager: Ashaley Kane **Turnaround & Deliverables Information** Due Date: Deliverables:	State/Federal Program: Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2018950

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
	MW-101	05-07-20 09:00	WATER	Ethanol by EPA 1671 Revision A	
	MW-304	05-07-20 11:00	WATER	Ethanol by EPA 1671 Revision A	
	MW-204	05-07-20 12:00	WATER	Ethanol by EPA 1671 Revision A	

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	5/11/20		
Form No: AL_subcoc				

May 15, 2020

Ashaley Kane
Alpha Analytical
145 Flanders Road
Westborough, MA 01581
TEL: (508) 439-5132
FAX:

RE: L2018950 **WorkOrder:** 20050658

Dear Ashaley Kane:

TEKLAB, INC received 3 samples on 5/12/2020 10:52:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Marvin L. Darling II

Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com

Teklab, Inc.
Environmental Laboratory

Report Contents

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20050658
Client Project: L2018950
Report Date: 15-May-2020

This reporting package includes the following:

Teklab, Inc.
Environmental Laboratory

Definitions

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20050658

Client Project: L2018950
Report Date: 15-May-2020

Abbr Definition

*	Analytes on report marked with an asterisk are not NELAP accredited
CCV	Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.
CRQL	A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.
DF	Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.
DNI	Did not ignite
DUP	Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.
ICV	Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.
IDPH	IL Dept. of Public Health
LCS	Laboratory control sample is a sample matrix, free from the analytes of interest,spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.
LCSD	Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MBLK	Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.
MDL	"The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."
MS	Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).
MSD	Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).
MW	Molecular weight
ND	Not Detected at the Reporting Limit
NELAP	NELAP Accredited
PQL	Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.
RL	The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.
RPD	Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).
SPK	The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.
Surr	Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.
TIC	Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"
TNTC	Too numerous to count (> 200 CFU)

Qualifiers

# - Unknown hydrocarbon	B - Analyte detected in associated Method Blank
C - RL shown is a Client Requested Quantitation Limit	E - Value above quantitation range
H - Holding times exceeded	I - Associated internal standard was outside method criteria
J - Analyte detected below quantitation limits	M - Manual Integration used to determine area response
ND - Not Detected at the Reporting Limit	R - RPD outside accepted recovery limits
S - Spike Recovery outside recovery limits	T - TIC(Tentatively identified compound)
X - Value exceeds Maximum Contaminant Level	

Teklab, Inc.
Environmental Laboratory

Case Narrative

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2018950

Work Order: 20050658
Report Date: 15-May-2020

Cooler Receipt Temp: 0.8 °C

Locations

Collinsville

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	jhriley@teklabinc.com

Springfield

Address	3920 Pintail Dr Springfield, IL 62711-9415
Phone	(217) 698-1004
Fax	(217) 698-1005
Email	KKlostermann@teklabinc.com

Kansas City

Address	8421 Nieman Road Lenexa, KS 66214
Phone	(913) 541-1998
Fax	(913) 541-1998
Email	jhriley@teklabinc.com

Collinsville Air

Address	5445 Horseshoe Lake Road Collinsville, IL 62234-7425
Phone	(618) 344-1004
Fax	(618) 344-1005
Email	EHurley@teklabinc.com

Chicago

Address	1319 Butterfield Rd. Downers Grove, IL 60515
Phone	(630) 324-6855
Fax	
Email	arenner@teklabinc.com

Teklab, Inc.
Environmental Laboratory

Accreditations

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20050658
Client Project: L2018950
Report Date: 15-May-2020

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2021	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2021	Collinsville
Louisiana	LDEQ	166493	NELAP	6/30/2020	Collinsville
Louisiana	LDEQ	166578	NELAP	6/30/2020	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2020	Collinsville
Arkansas	ADEQ	88-0966		3/14/2021	Collinsville
Illinois	IDPH	17584		5/31/2021	Collinsville
Kentucky	UST	0073		1/31/2021	Collinsville
Missouri	MDNR	00930		5/31/2021	Collinsville
Missouri	MDNR	930		1/31/2022	Collinsville

Teklab, Inc. Environmental Laboratory

Laboratory Results

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2018950
Matrix: AQUEOUS

Work Order: 20050658
Report Date: 15-May-2020

Sample ID	Client Sample ID	Certification	Qual	RL	Result	Units	DF	Date Analyzed	Date Collected
EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORGANICS									
Ethanol									
20050658-001A	MW-101	*		20	**ND**	mg/L	1	05/12/2020 19:56	05/07/2020 9:00
20050658-002A	MW-304	*		20	**ND**	mg/L	1	05/12/2020 20:33	05/07/2020 11:00
20050658-003A	MW-204	*		20	**ND**	mg/L	1	05/12/2020 21:11	05/07/2020 12:00

Teklab, Inc. Environmental Laboratory

Quality Control Results

http://www.teklabinc.com/

Client: Alpha Analytical
Work Order: 20050658
Client Project: L2018950
Report Date: 15-May-2020

EPA 600 1671A, PHARMACEUTICAL MANUFACTURING INDUSTRY NON-PURGEABLE VOLATILE ORG

Batch R276583 **SampType:** MBLK Units **mg/L**
SampID: MBLK-051220

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**ND**						05/12/2020

Batch R276583 **SampType:** LCS Units **mg/L**
SampID: LCS-051220

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**260**	250.0	0	103.0	70	132	05/12/2020

Batch R276583 **SampType:** MS Units **mg/L**
SampID: 20050658-003AMS

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	Low Limit	High Limit	Date Analyzed
Ethanol	20		**230**	250.0	0	90.3	70	132	05/12/2020

Batch R276583 **SampType:** MSD Units **mg/L** RPD Limit **30**
SampID: 20050658-003AMSD

Analyses	RL	Qual	Result	Spike	SPK Ref Val	%REC	RPD Ref Val	%RPD	Date Analyzed
Ethanol	20		**250**	250.0	0	99.7	225.9	9.85	05/12/2020

Teklab, Inc.
Environmental Laboratory

Receiving Check List

http://www.teklabinc.com/

Client: Alpha Analytical
Client Project: L2018950

Work Order: 20050658
Report Date: 15-May-2020

Carrier: UPS

Completed by: Amanda R. Ham
On: 12-May-2020

Received By: KMT

Reviewed by: Elizabeth A. Hurley
On: 12-May-2020

Pages to follow: Chain of custody 1 Extra pages included 0

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	Temp °C 0.8
Type of thermal preservation?	None ☐	Ice ☑	Blue Ice ☐	Dry Ice ☐
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Reported field parameters measured:	Field ☐	Lab ☐	NA ☑	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐		

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

Water – at least one vial per sample has zero headspace?	Yes ☑	No ☐	No VOA vials ☐
Water - TOX containers have zero headspace?	Yes ☐	No ☐	No TOX containers ☑
Water - pH acceptable upon receipt?	Yes ☑	No ☐	NA ☐
NPDES/CWA TCN interferences checked/treated in the field?	Yes ☐	No ☐	NA ☑

Any No responses must be detailed below or on the COC.

20050658

Subcontract Chain of Custody

Tek Lab, Inc.
5445 Horsehoe Lake Road
Collinsville, IL 62234-7425

Alpha Job Number
L2018950

Client Information

Client: Alpha Analytical Labs
Address: Eight Walkup Drive
Westborough, MA 01581-1019

Phone: 508-439-5132
Email: akane@alphalab.com

Project Information

Project Location: MA
Project Manager: Ashaley Kane

Turnaround & Deliverables Information

Due Date:
Deliverables:

Regulatory Requirements/Report Limits

State/Federal Program:
Regulatory Criteria:

Project Specific Requirements and/or Report Requirements

Reference following Alpha Job Number on final report/deliverables: L2018950

Report to include Method Blank, LCS/LCSD:

Additional Comments: Send all results/reports to subreports@alphalab.com

Lab ID	Client ID	Collection Date/Time	Sample Matrix	Analysis	Batch QC
20050658-001	MW-101	05-07-20 09:00	WATER	Ethanol by EPA 1671 Revision A	
-002	MW-304	05-07-20 11:00	WATER	Ethanol by EPA 1671 Revision A	
-003	MW-204	05-07-20 12:00	WATER	Ethanol by EPA 1671 Revision A	

0.8°C CL763 ice
no HS KL 5/12/20

	Relinquished By:	Date/Time:	Received By:	Date/Time:
	[signature]	5/11/20	[signature] UPS	5/12/20 1052
Form No: AL_subcoc				

KL 5/12/20

ATTACHMENT H

HISTORICAL GROUNDWATER ANALYTICAL RESULTS

TABLE 1
Summary of Groundwater Analytical Data
66 Galen Street
Watertown, Massachusetts

Sample Name	MCP	MW-1	MW-2	MW-6	MW-7	MW-8
Sample Date	RCGW-2	2/22/2019	2/21/2019	2/21/2019	2/22/2019	2/22/2019
Lab Sample ID		L1906937-04	L1906937-01	L1906937-02	L1906937-05	L1906937-06
VOCs (mg/l)						
Acetone	50	0.17	<0.025	<0.005	<0.005	<0.005
Methyl tert butyl ether (MTBE)	5	<0.002	<0.01	0.047	<0.002	<0.002
Naphthalene	0.7	<0.002	0.45	<0.002	<0.002	<0.002
Styrene	0.1	<0.001	0.0055	<0.001	<0.001	<0.001
Tetrahydrofuran	50	<0.002	<0.01	0.014	<0.002	<0.002
Trimethylbenzene, 1,3,5-	1	<0.002	0.011	<0.002	<0.002	<0.002
Trimethylbenzene, 1,2,4-	100	<0.002	0.023	<0.002	<0.002	<0.002
Tertiary-Amyl Methyl Ether (TAME)		<0.002	<0.01	0.021	<0.002	<0.002
Xylene, p/m-	3	<0.002	0.037	<0.002	<0.002	<0.002
Xylene, o-	3	<0.001	0.02	<0.001	<0.001	<0.001
Xylenes (Total)	3	<0.001	0.057	<0.001	<0.001	<0.001
VPH (mg/l)						
C9-C10 Aromatics	4	<0.05	0.428	<0.05	<0.05	<0.05
C5-C8 Aliphatics, Adjusted	3	<0.05	<0.125	<0.05	<0.05	<0.05
C9-C12 Aliphatics, Adjusted	5	<0.05	<0.125	<0.05	<0.05	<0.05
EPH (mg/l)						
C9-C18 Aliphatics	5	<0.1	<0.2	<0.1	<0.1	<0.1
C19-C36 Aliphatics	50	<0.1	<0.2	<0.1	<0.1	<0.1
C11-C22 Aromatics, Adjusted	5	<0.1	0.602	<0.1	<0.1	<0.1
Acenaphthylene	0.04	<0.01	0.0358	<0.01	<0.01	<0.01
Fluorene	0.04	<0.01	0.0246	<0.01	<0.01	<0.01
Methylnaphthalene, 2-	2	<0.01	0.103	<0.01	<0.01	<0.01
Naphthalene	0.7	<0.01	0.335	<0.01	<0.01	<0.01
Metals (mg/l)						
Antimony	8	<0.05	<0.05	<0.05	<0.05	<0.05
Arsenic	0.9	<0.005	<0.005	<0.005	<0.005	<0.005
Barium	50	0.046	0.059	0.048	0.017	<0.01
Beryllium	0.2	<0.005	<0.005	<0.005	<0.005	<0.005
Cadmium	0.004	*<0.004*	*<0.004*	*<0.004*	*<0.004*	*<0.004*
Chromium	0.3	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	0.01	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
Mercury	0.02	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	0.2	<0.025	<0.025	<0.025	<0.025	<0.025
Selenium	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
Silver	0.007	*<0.007*	*<0.007*	*<0.007*	*<0.007*	*<0.007*
Thallium	3	<0.02	<0.02	<0.02	<0.02	<0.02
Vanadium	4	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	0.9	<0.05	<0.05	<0.05	<0.05	<0.05
General Chemistry (mg/l)						
Cyanide, Total	0.03	-	-	-	**0.134**	<0.005

Values compared to the Massachusetts Contingency Plan (MCP) Reportable Concentrations for Category 2 Groundwater (RCGW-2)
Volatile organic compounds not detected above detection limits are not shown in the table; see laboratory report for the complete
Boxed values indicate exceedances of the applicable RCGW-2 standards
Italicized indicates reporting limit is less than or equal to the applicable standard
ND - indicates analyte was not detected above reporting limit provided
mg/l - milligram per liter
- - analyte not tested
EPH - Extractable Petroleum Hydrocarbons
VPH - Volatile Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds