

June 11, 2020

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

WuXi Biologics Construction 305 Belmont Street Worcester, Massachusetts

Dear Ms., Little:

On behalf of Consigli Construction (Consigli), 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 that are scheduled to begin at 305 Belmont Street in Worcester, Massachusetts (the Site). Dewatering activities are anticipated to be needed during excavation activities for the construction of a new building on the property. It is anticipated the dewatering activities at the Site will begin in June 2020 with an estimated construction completion date of December 2021.

Dewatered groundwater from within the excavation areas is proposed to be treated on-Site and will be discharged at a catch basin on either Hospital Drive or Belmont Street under the jurisdiction of the City of Worcester Department of Public Works (DPW), with ultimate discharge to Lake Quinsigamond. Permission from the City of Worcester DPW will be obtained prior to use of their stormwater system. The RGP NOI fillable form is included as Appendix A, along with Site Figures in Appendix B.

Owner and Operator

The Site owner (WuXi Biologics) and Site operator (Consigli Construction Company) will be co-permittees for this NPDES RGP application.

Project Description and Background

The proposed construction is for the redevelopment of 305 Belmont Street for construction of a new 200-foot by 400-foot building. The majority of the building will be slab on grade construction, with a smaller portion of the building including a basement. Other Site activities include new pavement parking lots, driveways, stormwater detention basins and installation of subsurface utilities. It is anticipated that during subsurface Site activities, groundwater will need to be dewatered from excavations to allow for construction activities to continue. Due to elevated concentrations of iron detected in Site groundwater, this RGP NOI is being submitted to cover dewatering needs at the Site.

Receiving Water Information

Lake Quinsigamond (waterbody identification MA51225) is a freshwater lake classified as Class B and is listed as a Category 4 impaired waterbody in the 303(d) Impaired Waterbodies document.



A surface water sample (SW-1) was collected from Lake Quinsigamond within one-quarter mile of the outfall location. The surface water sample was submitted to ESS Laboratory (ESS) in Cranston, Rhode Island, for analysis of ammonia, hardness and RGP metals. Temperature and pH were also were recorded in the field at the time of sample collection. Surface water analytical data is summarized in Table 1 of Appendix C, with a complete copy of the laboratory analytical report included in Appendix F.

In accordance with 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 Massachusetts Department of Environmental Protection (MassDEP) on June 5, 2020. The dilution factor was calculated using the United States Geological Survey (USGS) StreamStats 7Q10 (low-flow statics) value for Lake Quinsigamond at the outfall location, and the proposed discharge rate of 50 gallons-per-million (GPM). The applicable dilution factor is 7.33, with supporting documentation including the MassDEP confirmation in Appendix C.

Source Water Information

To characterize groundwater at the Site and determine a level of treatment needed prior to discharge, one groundwater sample was collected from the on-Site monitoring well MW-1, as shown on Figure 1 in Appendix B. The groundwater sample was collected and submitted to ESS Laboratories of Cranston, Rhode Island (ESS) for laboratory analysis of RGP Parameters. Laboratory analytical results are summarized in Table 1 of Appendix C, with a complete copy of the laboratory analytical report in Appendix F. Laboratory analytical results were compared with the RGP Technology Based Effluent Limitations (TBELs) and were used to calculate the Water Quality Based Effluent Limitations (WQBELs). Contaminants of concern (COCs) are analytes that exceeded the applicable effluent limitations: iron and total suspended solids (TSS). An electronic fillable form for WQBEL calculations is being submitted with this NOI.

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 a catch basin along Hospital Drive or Belmont Street for ultimate discharge to Lake Quinsigamond. Prior to use of the stormwater drainage system along Hospital Drive and Belmont Street, permission for system usage will be obtained from the City of Worcester's DPW. Copies of the stormwater drainage plans showing the route effluent will take from the Site to the outfall location are shown on Figures 3 in Appendix B. The outfall location (Outfall No.1) is located at 42°16'28.12"N, 71°45'27.48"W.

Treatment System

The proposed treatment system is capable of treating up to 50 gallons per minute (GPM) and begins with a weir tank capable of holding up to 10,000 gallons of water. From the weir tank, water will pass through bag filtration prior to entering liquid-phase reactivated carbon vessels followed by an ion exchange media vessel. The water will then pass through a flow meter before being discharged to a nearby catch basin. The treatment system Process Flow Diagram is included in Appendix B as Figure 4, followed by cut sheets.

Best Management Practices Plan – Consigli as the system operator, will develop a Best Management Practices Plan (BMPP) for the groundwater extraction and treatment systems for this project. The BMPP will be developed in accordance with the requirements of the RGP and implemented upon initiation of the discharge.



Endangered Species Act Eligibility

Review of the Massachusetts Geographic Information Systems (MassGIS) Priority Resource Map, Figure 2 of Appendix B, shows the Project is not within an ACEC and no National 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 is one threatened, endangered or candidate species within the geographical extent of the project boundaries. This species is the Northern Long-Eared Bat (*Myotis septentrionalis*). Since there are no critical habitats designed for this species by USFWS, Tighe & Bond reviewed a map of Long-Eared Bat locations and Hibernacula as provided by the NHESP. According to this map there are no Long-Eared Bats known within the Worcester area, and the closest Hibernacula is not located within the Site boundaries, or within one-mile of the outfall location. Based on this information, and the construction activities involving below grade excavations, this Site qualifies for Criterion C: the operator has decided that based on the best scientific and commercial data available, construction activities will have no effect on the Long-Eared Bat. A Copy of the USFWS IPaC consultation letter and NHESP Long-Eared Bat and Hibernacula Map is included in Appendix D.

National Historic Preservation Act Eligibility Determination

An electronic review of the Massachusetts Cultural Resource Information System database (Appendix E), 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.

The proposed treatment system has been designed to reduce the levels of associated COCs to below the applicable effluent limits. Treated effluent will be sampled at start up and in accordance with permit requirements and submitted for laboratory analysis for analytes 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 project, please do not hesitate to contact Bryan Gammons at bgammons@tighebond.com, at your convenience.

Very truly yours,

TIGHE & BOND, INC.

Bryan Gammons Project Manager

Enclosures

Copy: MassDEP, Division of Watershed Management

MassDEP, Boston

Appendices

Appendix A: Notice of Intent Fillable Form

Appendix B: Figure 1: Site Plan

Figure 2: Priority Resource Map

Figure 3: City of Worcester Drainage Plans to Outfall Location

Figure 4: Process Flow Diagram

Appendix C: Table 1: Groundwater and Surface Water Analytical Summary

Dilution Factor Confirmation and StreamStats Report

"The 303(d) List- Waters Requiring a TMDL" Lake Quinsigamond Page

Appendix D: USFWS IPac Letter and NHESP Mapping

Appendix E: Massachusetts Cultural Resources Information System Report

Appendix F: Laboratory Analytical Report

APPENDIX A

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

A. General site information:

1. Name of site:	Site address:						
	Street:						
	City:		State:	Zip:			
2. Site owner	Contact Person:						
	Telephone:	Email:					
	Mailing address:						
	Street:						
Owner is (check one): ☐ Federal ☐ State/Tribal ☐ Private ☐ Other; if so, specify:	City:	Zip:					
3. Site operator, if different than owner	Contact Person:						
	Telephone:	Email:					
	Mailing address:						
	Street:						
	City:		State:	Zip:			
4. NPDES permit number assigned by EPA:	5. Other regulatory program(s) that apply to the site (check all that apply):						
	☐ MA Chapter 21e; list RTN(s):	\Box CERCLA					
NPDES permit is (check all that apply: \square RGP \square DGP \square CGP	☐ NH Groundwater Management Permit or	☐ UIC Program					
☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Groundwater Release Detection Permit:	□ POTW Pretreatment					
	☐ CWA Section 404						

В.	Receiving water information:	:
1 N	lame of receiving water(s).	

1. Name of receiving water(s):	Name of receiving water(s): Waterbody identification of receiving water(s):							
Receiving water is (check any that apply): \Box Outstar	nding Resource Water □ Ocean Sanctuary □ territor	rial sea □ Wild and Scenic R	iver					
2. Has the operator attached a location map in accord	lance with the instructions in B, above? (check one)	: □ Yes □ No						
Are sensitive receptors present near the site? (check of If yes, specify:	one): □ Yes □ No							
3. Indicate if the receiving water(s) is listed in the Stapollutants indicated. Also, indicate if a final TMDL it 4.6 of the RGP.								
4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.								
5. Indicate the requested dilution factor for the calculaccordance with the instructions in Appendix V for s								
6. Has the operator received confirmation from the a If yes, indicate date confirmation received:	ppropriate State for the 7Q10and dilution factor indi	cated? (check one): ☐ Yes ☐	l No					
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	☐ Contaminated groundwater ☐ Contaminated surface water ☐ The receiving water ☐ Potable water; if so, indicentified municipality or origin:							
Has the operator attached a summary of influent	Has the operator attached a summary of influent	☐ A surface water other						
sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one):	sampling results as required in Part 4.2 of the RGP in accordance with the instruction in Appendix VIII? (check one):	than the receiving water; if so, indicate waterbody:	☐ Other; if so, specify:					
□ Yes □ No	□ Yes □ No							

2. Source water contaminants:							
a. For source waters that are contaminated groundwater or contaminated surface water, indicate are any contaminants present that are not included in	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						
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.	with the instructions in Appendix VIII? (check one): □ Yes □ No						
3. Has the source water been previously chlorinated or otherwise contains resid	dual chlorine? (check one): ☐ Yes ☐ No						
D. Discharge information							
1. The discharge(s) is a(n) (check any that apply): \Box Existing discharge \Box New	w discharge □ New source						
Outfall(s):	Outfall location(s): (Latitude, Longitude)						
Discharges enter the receiving water(s) via (check any that apply): □ Direct di	scharge to the receiving water \Box Indirect discharge, if so, specify:						
☐ A private storm sewer system ☐ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sew	ver system:						
Has notification been provided to the owner of this system? (check one): ☐ Ye	•						
Has the operator has received permission from the owner to use such system for discharges? (check one): Yes No, if so, explain, with an estimated timeframe for obtaining permission:							
Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ☐ No							
Provide the expected start and end dates of discharge(s) (month/year):							
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							

2. Activity Category: (check all that apply)	3. Contamination Type Category: (check all that apply)					
	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 					
 □ I – Petroleum-Related Site Remediation □ II – Non-Petroleum-Related Site Remediation 	b. If Activity Category III, IV, V, VI, VII or VIII: (check either G or H)					
 □ III – 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 	□ G. Sites with Known Contamination 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	□ H. Sites with Unknown Contamination d. If Category III-H, IV-H, V-H, VI-H, VII-H or VIII-H Contamination Type Categories A through F apply				

4. Influent and Effluent Characteristics

	Known	Known				Infl	uent	Effluent Limitations	
Parameter b	or believed absent	or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia								Report mg/L	
Chloride								Report µg/l	
Total Residual Chlorine								0.2 mg/L	
Total Suspended Solids								30 mg/L	
Antimony								206 μg/L	
Arsenic								104 μg/L	
Cadmium								10.2 μg/L	
Chromium III								323 μg/L	
Chromium VI								323 μg/L	
Copper								242 μg/L	
Iron								5,000 μg/L	
Lead								160 μg/L	
Mercury								0.739 μg/L	
Nickel								1,450 μg/L	
Selenium								235.8 μg/L	
Silver								35.1 μg/L	
Zinc								420 μg/L	
Cyanide								178 mg/L	
B. Non-Halogenated VOCs	3		•						
Total BTEX								100 μg/L	
Benzene								5.0 μg/L	
1,4 Dioxane								200 μg/L	
Acetone								7.97 mg/L	
Phenol								1,080 µg/L	

	Known	Known		_		Infl	luent	Effluent Limitations		
Parameter	or believed absent	or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL	
C. Halogenated VOCs										
Carbon Tetrachloride								4.4 μg/L		
1,2 Dichlorobenzene								600 μg/L		
1,3 Dichlorobenzene								320 µg/L		
1,4 Dichlorobenzene								5.0 μg/L		
Total dichlorobenzene								763 µg/L in NH		
1,1 Dichloroethane								70 μg/L		
1,2 Dichloroethane								5.0 μg/L		
1,1 Dichloroethylene								3.2 µg/L		
Ethylene Dibromide								0.05 μg/L		
Methylene Chloride								4.6 μg/L		
1,1,1 Trichloroethane								200 μg/L		
1,1,2 Trichloroethane								5.0 μg/L		
Trichloroethylene								5.0 μg/L		
Tetrachloroethylene								5.0 μg/L		
cis-1,2 Dichloroethylene								70 μg/L		
Vinyl Chloride								2.0 μg/L		
D. Non-Halogenated SVO	Cs	_								
Total Phthalates								190 μg/L		
Diethylhexyl phthalate								101 μg/L		
Total Group I PAHs								1.0 μg/L		
Benzo(a)anthracene								_		
Benzo(a)pyrene								_		
Benzo(b)fluoranthene								<u> </u>		
Benzo(k)fluoranthene								As Total PAHs		
Chrysene								_		
Dibenzo(a,h)anthracene								_		
Indeno(1,2,3-cd)pyrene										

	Known	Known				Inf	luent	Effluent Lin	nitations
Parameter	or believed absent present # of samples Test method limit (µg/l)		Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL			
Total Group II PAHs								100 μg/L	
Naphthalene								20 μg/L	
E. Halogenated SVOCs									
Total PCBs								0.000064 µg/L	
Pentachlorophenol								1.0 μg/L	
	1			•					
F. Fuels Parameters Total Petroleum		1	1	1		1 1			
Hydrocarbons								5.0 mg/L	
Ethanol								Report mg/L	
Methyl-tert-Butyl Ether								70 μg/L	
tert-Butyl Alcohol								120 μg/L in MA 40 μg/L in NH	
tert-Amyl Methyl Ether								90 μg/L in MA 140 μg/L in NH	
Other (i.e., pH, temperatur	re, hardness,	salinity, LC	50, addition	al pollutar	ats 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:	
2. Provide a written description of all treatment system(s) or processes that will be applied to the effluent prior to discharge.	
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	
2. Duoyida tha darign flavy conscity in callons non minute (ann.) of the most limiting component	
3. Provide the design flow capacity in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component:	
Is use of a flow meter feasible? (check one): \square Yes \square No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	
Provide the average effluent flow in 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 Figure 4	

Appendix IV – Part 1 – NOI Page 22 of 24

F. Chemical and additive information No chemicals or additives will be added to the treatment system.

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 \square pH conditioners \square Bioremedial agents, including microbes \square Chlorine or chemicals containing chlorine \square Other; if so, specify:
2. Provide the following information for each chemical/additive, using attachments, if necessary:
a. Product name, chemical formula, and manufacturer of the chemical/additive; b. Purpose or use of the chemical/additive or remedial agent; c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive; d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive; e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).
3. Has the operator attached an explanation which demonstrates that the addition of such chemicals/additives may be authorized under this general permit in accordance
with the instructions in F, above? (check one): \square Yes \square 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) \square the operator \square EPA \square 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): \square Yes \square 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): \square Yes \square No
I. Supplemental information
Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.
Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ☐ Yes ☐ No
Has the operator attached the certification requirement for the Best Management Practices Plan (BMPP)? (check one): ☐ Yes ☐ No

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.							
BMPP certification statement:							
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): \square RGP \square DGP \square CGP \square MSGP \square Individual NPDES permit	Check one: Yes \square No \square NA \square						
☐ Other; if so, specify:							
Signature: Date	te:						
Print Name and Title:							

J. Certification requirement

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in a that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and be no personal knowledge that the information submitted is other than true, accurate, and complete. I am aware that there are information, including the possibility of fine and imprisonment for knowing violations.	versons who manage elief, true, accurate, a	the system, or those and complete. I have
A BMPP meeting the requirements of this general permit will be deve BMPP certification statement: initiating discharge	loped and imple	mented prior to
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. Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site	Check one: Yes □	No □ NA ■
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: Buth Museum	e: // Jun.	20
Trint Name and Title: William Browlea Director of Evangeria		

APPENDIX B

AUGER ENVIRONMENTAL SAMPLE

TIGHE & BOND TEST BORINGS

PROPOSED SPOT ELEVATION

572.5

DATE: 01/03/2020

SCALE: 1" = 70'

FIGURE 1

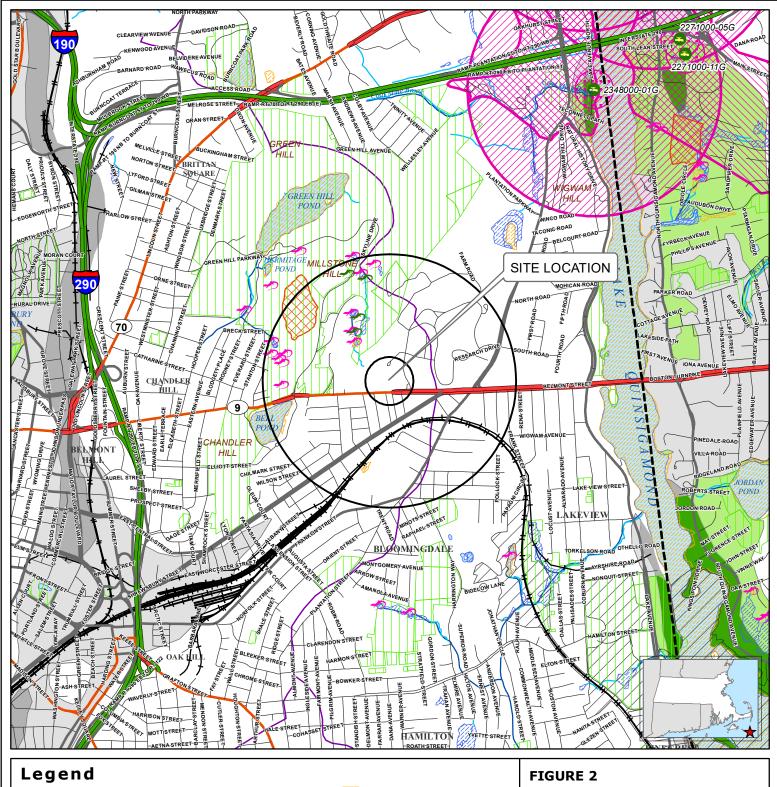
Jan 03, 2020-8:43am Plotted By: JLL

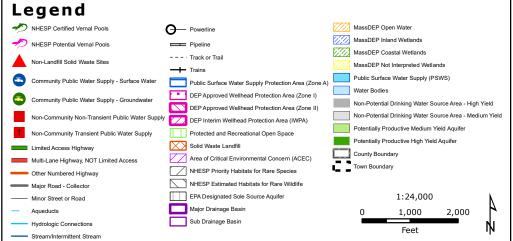
4. DISTURBED SOIL SAMPLES WERE OBTAINED USING A STANDARD SPLIT SPOON SAMPLER ADVANCED BY A

140-POUND HAMMER FREE FALLING FROM A HEIGHT OF 30-INCHES.

6. REFER TO BORING LOGS FOR DETAILED INFORMATION.

5. BEDROCK CORES WERE OBTAINED USING AN NX-SIZED DOUBLE WALL CORE BARREL.





PRIORITY RESOURCES

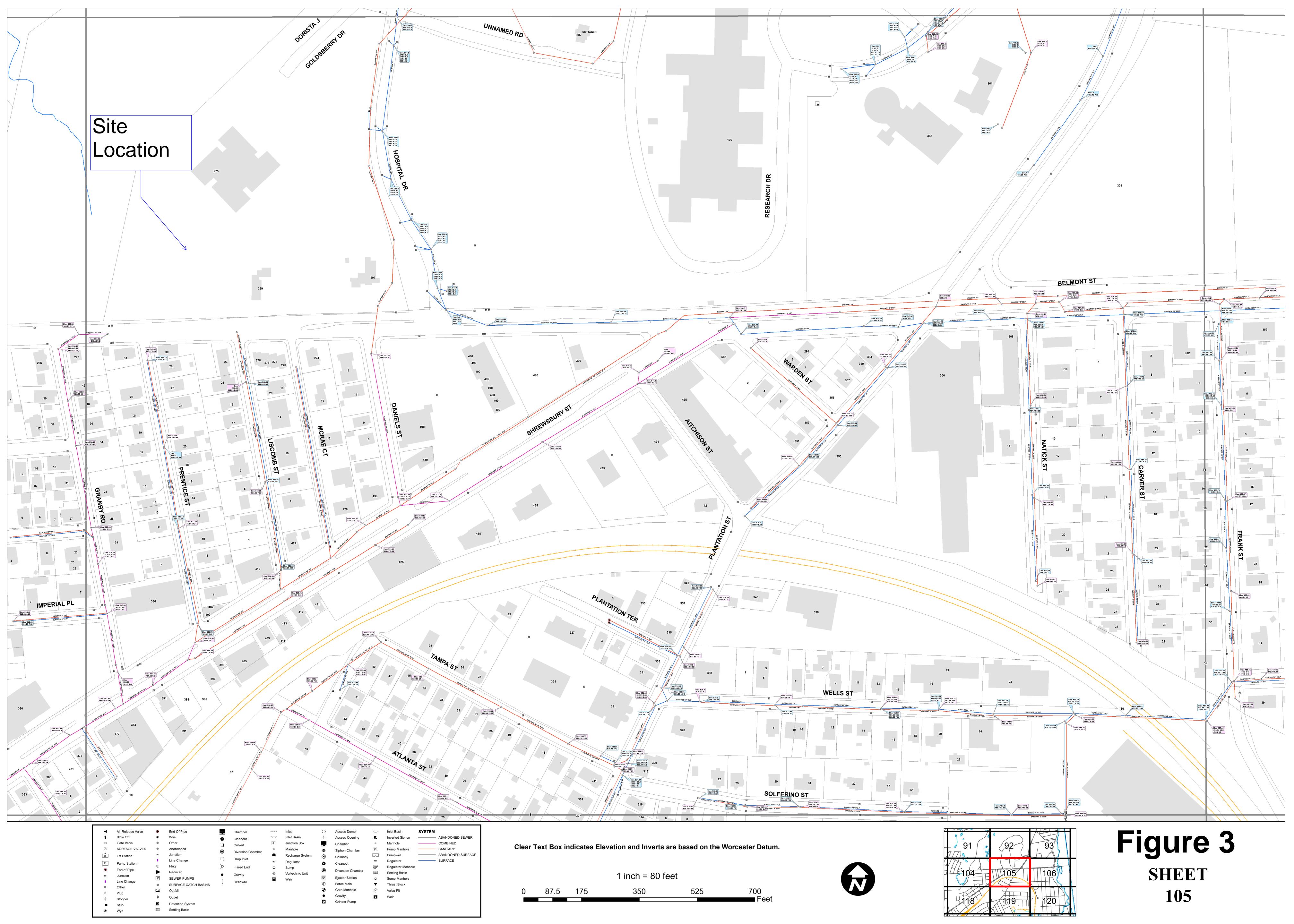
WuXi Biologics Environmental and Geotechnical Site Assessment 305 Belmont Street Worcester, Massachusetts

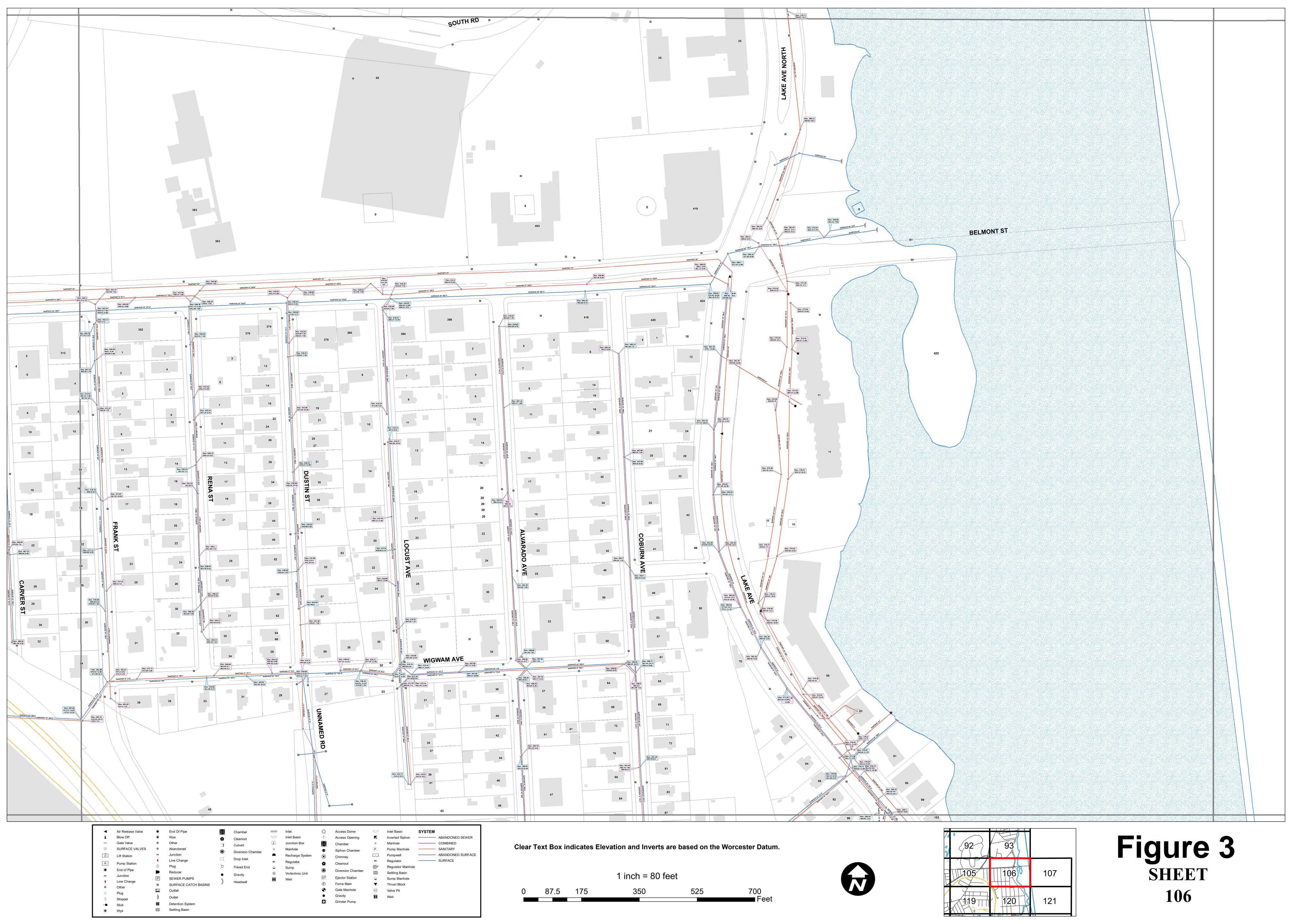
Data source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology Circles indicate 500-foot and half-mile radii.

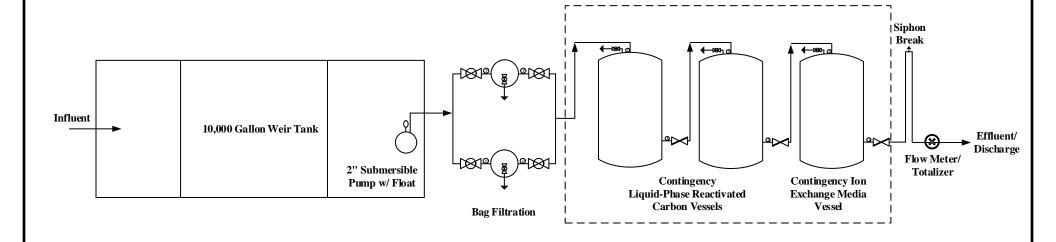
Data valid as of September 2019.

September 2019









Notes:

- 1.) Figure is not to scale
- 2.) System rated for 50 GPM

Key:		
Piping/Hose		
Butterfly valve	\bowtie	
Pressure gauge	ø	
Ball valve	1921	
Contingency	_~~	



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

Office: 774-450-7177

DESIGNED BY: LRT DRAWN BY: JHJ

CHECKED BY: DATE:

Figure 4 Water Treatment System Schematic

WuXi Biologics Building 305 Belmont Street Worcester, MA PROJECT No.
3944
FIGURE No.

SPECIFICATION

CAPACITY: 50 CUBIC YARD (10K GAL) 1/2" A36 PLATE FLOOR CONSTRUCTION 3/6" A36 PLATE WALL CONSTRUCTION

4" X 3" X 11GA. TOP CAP TUBE

6" X 2" X 1/4" FLOOR RAILS

PORTS: (3) 4" FLANGE W/BUTTERFLY VALVE (1) FLANGED INTERNAL

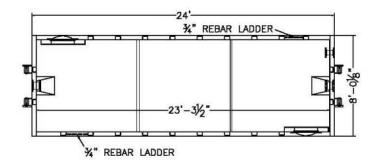
(2) 6" FLANGE W/BUTTERFLY VALVE FLANGED INTERNAL

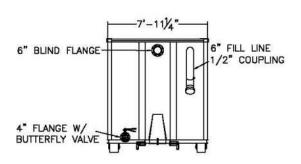
(1) 6" FILL LINE W/ 1/2" COUPLER

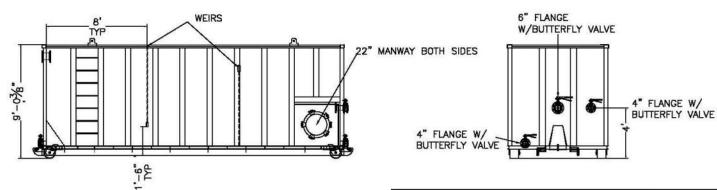
MANWAY: (2) ONE EACH SIDE

OVER UNDER WEIRS WHEELS: 10" STEEL

BLAST: SSPC-SP-6 (COMMERCIAL BLAST) PAINT: POLYURETHANE 3.0-4.0 MILS D.F.T.







10,000 gal. Weir Tank



Lockwood Remediation Technologies, LLC

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



LB Series

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

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



LB Series Features

LB(T)-1500:

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

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

Up to 70' shut off head

Slimline design allows pumps to fit into 8" pipes.



LB Series Features

LB-800:

Designed to fit an 8" pipe.

Up to 60' shut off head.

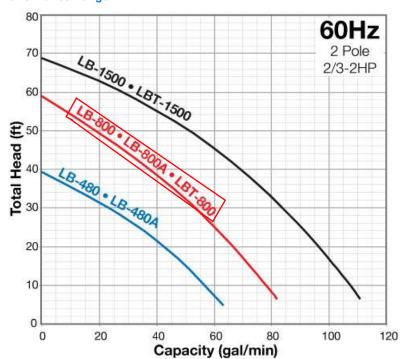
Available in 110V and 220V single-phase with 50 foot cables.

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

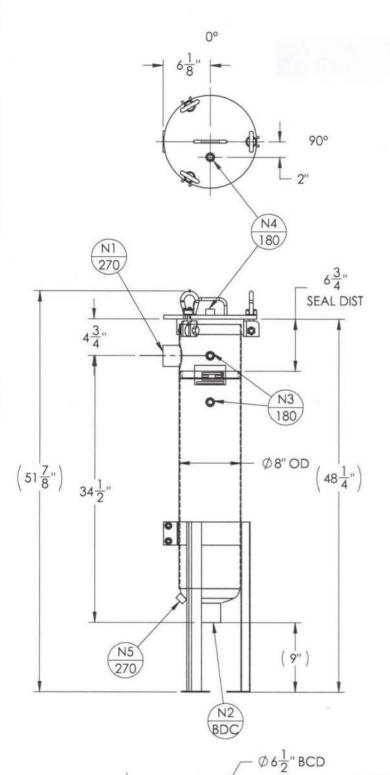
Oil Lifter provides lubrication of the seal faces.

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

Performance Range



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



 $\Box 5\frac{5}{8}$

		NOZZLE	SCHEDULE	
MARK	QTY	SIZE	/ RATING	DESCRIPTION
N1	1	2" 150	# NPT	INLET
N2	1	2" 150	# NPT	OUTLET
N3	2	1/2" 30	00# NPT	PRESS GA
N4	1	1/2" 30	00# NPT	VENT
N5	1	1/2" 30	00# NPT	CLEAN DRAIN
N6			-	DIRTY DRAIN
	VESS	SEL DESIG	N CONDITION	S
CODE:	BES	T COMME	RCIAL PRACT	ICE
M.A.W.P.:	150 PSI @	250°F	M.D.M.T.:	-20° F @ 150 PSI
M.A.E.P.:	15 PSI @	250°F		
CORROSION	ALLOWANCE	: NONE	HYDROTEST	PRESS: 195 PSI
STAMP:	'NC'		SERVICE:	NON LETHAL
PWHT:	N/A		RADIOGRAP	HY: N/A
MATERIAL:	SS 304/	L	GASKET:	BUNA-N

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



NOTES:

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

A 1	REV. DATE		REVISIO	N N	DRAWN APP'D
THIRD ANGLE PROJECTION TOLERANCES-UNLESS OTHERWISE NOTED DECIMAL X + 11	(R	Leomi Tel:	awford Street nster, MA 01453 774.450.7177 388.835.0617	3	
DECIMAL X =±.1' XX =±.02' XXX == .005"	1	LRT	Provided Bag	Filter Housing	
FRACTIONAL <24" = #1/16" >24" = #1/8"	EQUIPMENT:		BAG FILTER HOL	JSING (EB SERIES)	
ANGULAR *# 1*	MODEL NO:		S4EB11	2-2P-SW	
MAX. MACHINED 125/ SURFACE FINISH 125/	CUSTOMER:			ni.	
PARENT: NONE	DRAWN: CR	DATE: 3011	JOB No.	DWG. No.	REV. No
PAGE: 1 OF 4	CHK'D: JM	SCALE: NTS	V-	001-0123	0

1:1

 $\emptyset \frac{1}{2}$ " TYP.



Polyester Liquid Filter Bag



Features

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

Applications

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

Sizes

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

Micron Ratings

Available fibers range from 1 to 1500 microns

Options

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

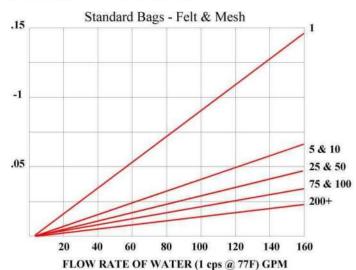
Optional Filter Media

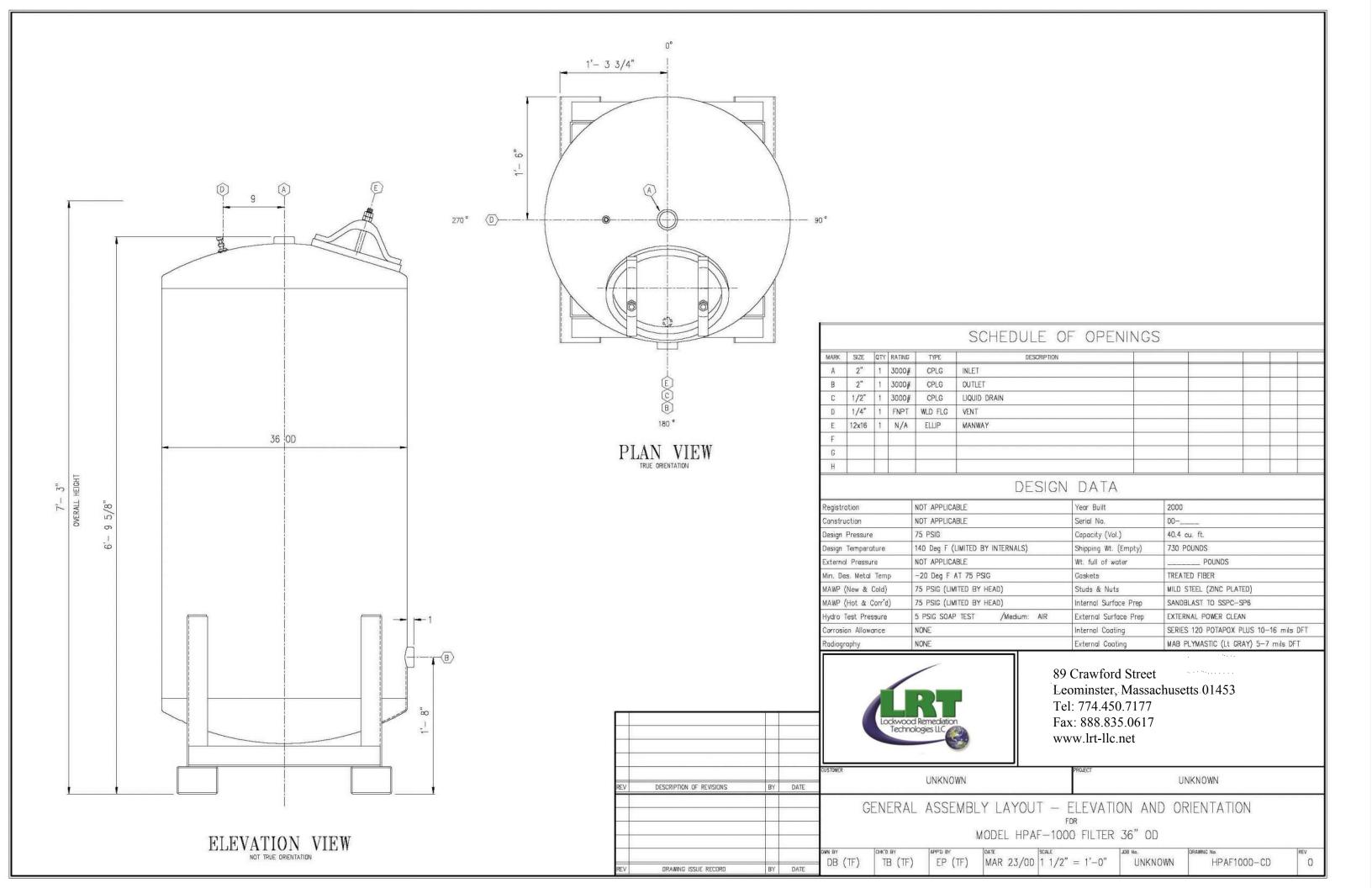
Felt: Nomex, Polyester, Polypropylene

Monofilament: Nylon, Polyester, Polypropylene

Multifilament: Nylon, Polyester

Polypropylene: Oil Removal







89 Crawford Street

Leominster, Massachusetts 01453

Tel: 774.450.7177 Fax: 888.835.0617 www.lrt-llc.net

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

GENERAL DESCRIPTION

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

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

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



RESINTECH CGS is a sodium form standard crosslinked gel strong acid cation resin. *CGS* is optimized for residential applications that require good regeneration efficiency and high capacity. *RESINTECH CGS* is intended for use in all residential and commercial softening applications that do not have significant amounts of chlorine in the feedwater. *CGS* is supplied in the sodium form.



FEATURES & BENEFITS

RESIDENTIAL SOFTENING APPLICATIONS

Resin parameters are optimized for residential softeners

LOW COLOR THROW

SUPERIOR PHYSICAL STABILITY

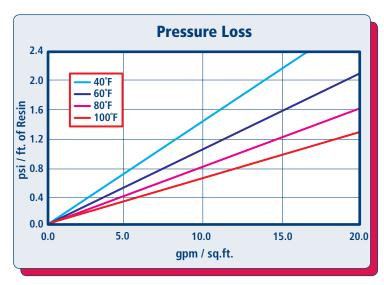
93% plus sphericity and high crush strengths together with carefully controlled particle distribution provides long life and low pressure drop

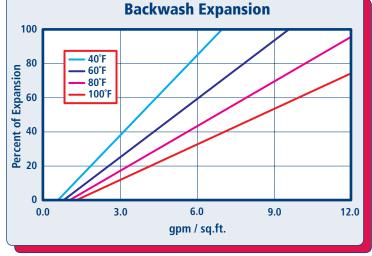
COMPLIES WITH US FDA REGULATIONS

Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the US FDA

Prior to first use for potable water, resin should be backwashed for a minimum of 20 minutes, followed by 10 bed volumes of downflow rinse.

HYDRAULIC PROPERTIES





PRESSURE LOSS

The graph above shows the expected pressure loss of *ResinTech CGS* per foot of bed depth as a function of flow rate at various temperatures.

BACKWASH

The graph above shows the expansion characteristics of *ResinTech CGS* as a function of flow rate at various temperatures.

RESINTECH® CGS

PHYSICAL PROPERTIES

Polymer Structure Styrene/DVB

Polymer Type Gel

Functional Group Sulfonic Acid Physical Form Spherical beads

Ionic Form as shipped Sodium

Total Capacity

Sodium form >1.8 meq/mL

Water Retention

Sodium form 40 to 52 percent

Approximate Shipping Weight

Sodium form 50 lbs./cu.ft.

Screen Size Distribution (U.S. mesh) 16 to 50

Maximum Fines Content (<50 mesh) 1 percent

Minimum Sphericity 90 percent

Uniformity Coefficient 1.6 approx.

Resin Color Amber

Note: Physical properties can be certified on a per lot basis, available upon request

SUGGESTED OPERATING CONDITIONS

Maximum continuous temperature

Sodium form 250°F

Minimum bed depth 24 inches

Backwash expansion 25 to 50 percent

Maximum pressure loss 25 psi
Operating pH range 0 to 14 SU

Regenerant Concentration

Salt cycle 10 to 15 percent NaCl Regenerant level 4 to 15 lbs./cu.ft. Regenerant flow rate. 0.5 to 1.5 gpm/cu.ft.

Regenerant contact time >20 minutes

Displacement flow rate

Displacement volume

10 to 15 gallons/cu.ft.

Rinse flow rate

Same as service flow

Rinse volume

35 to 60 gallons/cu.ft.

Service flow rate

1 to 10 gpm/cu.ft.

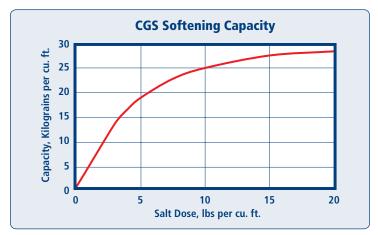
Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.

For operation outside these guidelines, contact ResinTech Technical Support

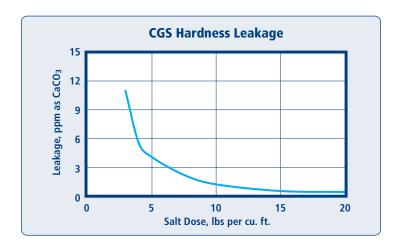
APPLICATIONS

SOFTENING

RESINTECH CGS is a standard crosslinked cation resin optimized for residential and commercial applications. This type of resin is easier to regenerate than the higher crosslinked resins. CGS has marginal resistance to chlorine and other oxidants and is not ideal for high temperature and other high stress applications.



Capacity and leakage data are based on the following: 2:1 Ca:Mg ratio, 500 ppm TDS as CaCO3, 0.2% hardness in the salt and 10% brine concentration applied co-currently through the resin over 30 minutes. No engineering downgrade has been applied.





East Coast - West Berlin, NJ p:856.768.9600 • Midwest - Chicago, IL p:708.777.1167 • West Coast - Los Angeles, CA p:323.262.1600



Recordall® Cold Water Top Load Bronze Disc Meter Size 2" (DN 50mm) NSF/ANSI Standard 61 Certified, Annex G

DESCRIPTION

Badger Meter offers the Recordall Disc meter in Cast Bronze and a Lead-Free Alloy. The Lead-Free Alloy (Trade designation: M170-LL) version has been certified to comply with NSF/ANSI Standard 61, Annex G and carries the NSF-61 Mark on the housing. All components of the Lead-Free Alloy meter, i.e., disc, chamber, housing, seals, etc. comprise the certified system.

APPLICATIONS: For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

OPERATION: Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanentlysealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register dial face.

OPERATING PERFORMANCE: The Badger Meter Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates (100 \pm 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

CONSTRUCTION: Badger Meter Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: bronze meter housing, measuring chamber, and permanently, sealed register. A corrosion-resistant engineered polymer material is used for the measuring chamber

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment. The built-in strainer has an effective straining area of twice the inlet size.

MAGNETIC DRIVE: Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading, remote or automatic meter reading options.

SEALED REGISTER: The standard register consists of a straight-reading, odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating engineered polymer gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Automatic meter reading systems are available for all Recordall Disc meters. All reading options are removable from the meter without disrupting water service.

TAMPER-PROOF FEATURES: Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw/or Torx° tamper seal resistant screw is added to the meter. Both can be installed at the meter site or at the factory.

MAINTENANCE: Badger Meter Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger Meter offers various maintenance and meter component exchange programs to fit the needs of the utility.

CONNECTIONS: Tailpieces/Flanges for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.



Model 170 shown with optional 1" Test Plug

SPECIFICATIONS

Typical Operating 2 1/2-170 GPM (.57 to 39 m³/hr) Range (100% ± 1.5%)

Low Flow 1 1/2 GPM (.34 m³/hr)

(Min. 95%) Maximum

100 GPM (23 m³/hr) **Continuous Operation**

Pressure Loss 3.3 PSI at 100 GPM at Maximum (.23 bar at 23 m³/hr) **Continuous Operation**

Maximum Operating 80°F (26°C)

Temperature

Maximum Operating 150 PSI (10 bar) **Pressure**

Measuring Element Nutating disc, positive displacement

Register Type Straight reading, permanently

> sealed magnetic drive standard. Remote reading or Automatic Meter

Reading units optional. Registration 100 Gallons, 10 Cubic Feet, 1 m3

Register Capacity 100,000,000 Gallons,

10,000,000 Cubic Feet, 1,000,000 m³.

6 odometer wheels

2" AWWA two bolt elliptical flange, **Meter Connections**

drilled, or 2" - 11 1/2 NPT internal pipe threads.

1" NPT test plug (TP) available on elliptical **Optional Test Plug**

long and short versions.

MATERIALS

Meter Housing Cast Bronze, Lead-Free Alloy Bronze, Lead-Free Alloy **Housing Top Plates Measuring Chamber Engineered Polymer** Disc **Engineered Polymer**

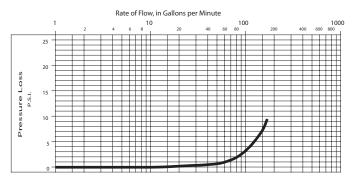
Trim Stainless Steel/Bronze Strainer **Engineered Polymer Disc Spindle** Stainless Steel

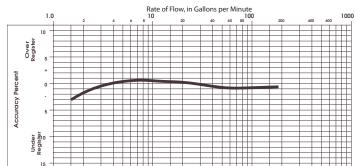
Magnet Ceramic **Magnet Spindle** Stainless Steel

Register Lid and Box Engineered Polymer or Bronze **Generator Housing**

Engineered Polymer

PRESSURE LOSS CHART ACCURACY CHART





METER SIZE	METER MODEL	A LAYING LENGTH	B HEIGHT REG./RTR	C HEIGHT GEN.	D CENTERLINE BASE	WIDTH	APPROX. SHIPPING WEIGHT
2"	170 EL, Hex.	15 ¹ / ₄ "	8"	9³/ ₈ "	2 ⁷ / ₈ "	9 ¹ / ₂ "	30 lb.
(50mm)	170 EL, TP	(387mm)	(203mm)	(238mm)	(73mm)	(241mm)	(13.6kg)
2"	170 ELL,	17"	8"	9³/ ₈ "	2 ⁷ / ₈ "	9 ¹ / ₂ "	30 lb.
(50mm)	170 ELL, TP	(432mm)	(203mm)	(238mm)	(73mm)	(241mm)	(13.6kg)

EL = Elliptical

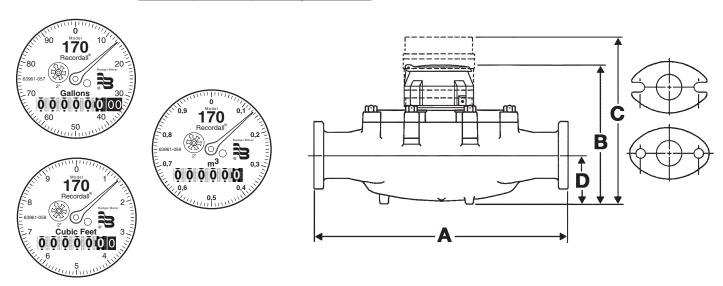
ELL = Elliptical Long

Hex = Hexagon, $2'' - 11^{1}/_{2}$ NPT Thread

TP=Test Plug 1"

Sweep Hand Registration

MODEL	GALLON	CU.FT.	CU. METER
M170	100	10	1



APPENDIX C

TABLE 1 - Groundwater and Surface Water Analytical Results WuXi Biologics Belmont Street

Worcester, Massachusetts

Sample ID Sample Date Lab Sample ID	MCP Criteria RCGW-2	RGP Efflue TBEL	nt Limits ⁽¹⁾ WQBEL	MW-1 3/6/2020 20C0231-01	SW-1 3/6/2020 20C0231-02
A. Inorganics Ammonia (mg/L)		Report		<0.1	
Chloride (mg/L)		Report		5.3	
Hardness (ug/L)		Report		62,500	81,700
Chlorine, Total Residual (ug/L)		200	81	<20.0	
Total Suspended Solids (mg/L)		30		750	
Metals (ug/l) Antimony	8000	206	4,693	<10	<5
Arsenic	900	104	73	9.7	<1
Cadmium	4	10.2	1.6678	<0.2	< 0.2
Chromium, hexavalent (Cr+6)	300	323	521.5	<10	<10
Conner		323 242	83.9 56	24.4	<10
Copper Iron		5,000	5,845	6.8 8,190	<2 235
Lead	10	160	17.31	3.4	<2
Mercury	20	0.739	6.64	<0.2	< 0.2
Nickel	200	1,450	313.6	13.2	<5
Selenium	100	235.8	36.7	<1	<1
Silver Zinc	7 900	35.1 420	18.5 621.4	<2 34.3	<0.5 15.6
Cyanide SW-846 9014 (mg/l)	300	420	021.4	34.3	15.0
Total Cyanide	0.03	178	38.1	<0.005	
B. Non-Halogenated VOCs (ug/L)					
BTEX Benzene	1000	5		<0.5	
Toluene	40000			<0.5	
Ethylbenzene Tabal Volumes	5000			< 0.5	
Total Xylenes <i>Total BTEX</i>		100		<0.5 <0.5	
1,4-Dioxane	6000	200		<0.5	
Acetone	50000	7,790		<0.23 <5	
Phenol		1,080	2,200	<50	
C. Halogenated VOCs (ug/l)			=		
Carbon tetrachloride	2	4.4	11.7	<0.3	
1,2-Dichlorobenzene 1,3-Dichlorobenzene	2000 6000	600 320		<0.5 <0.5	
1,4-Dichlorobenzene	60	5		<0.5	
1,1-Dichloroethane	2000	70		<0.5	
1,2-Dichloroethane	5	5		< 0.5	
1,1-Dichloroethene	80	3.2		<0.5	
1,2-Dibromoethane (EDB)	2	0.05		<0.015	
Methylene chloride 1,1,1-Trichloroethane	2000 4000	4.6 200		<0.5 <0.5	
1,1,2-Trichloroethane	900	5		<0.5	
Tetrachloroethylene	50	5	24.2	<0.5	
Trichloroethene	5	5		<0.5	
cis-1,2-Dichloroethene Vinyl chloride	20 2	70 2		<0.5 <0.2	
D. Non-Halogenated SVOCs					
Phthalates					
bis(2-Ethylhexyl)phthalate	50000	101	16.1	<1.87	
Butyl benzyl phthalate	10000			<2.34	
Di-N-Butyl phthalate	5000			<2.34	
Diethyl phthalate	9000 50000			<2.34 <2.34	
Dimethyl phthalate Di-N-Octyl phthalate	100000			<2.34	
Total Phthalates		190		<13.57	
Group I PAHs					
Benzo(a)anthracene	1000	1	0.0279	< 0.05	
Benzo(a)pyrene	500	1	0.0279	< 0.05	
Benzo(b)fluoranthene Benzo(k)fluoranthene	400 100	1 1	0.0279 0.0279	<0.05 <0.05	
Chrysene	70	1	0.0279	<0.05	
Dibenz(a,h)anthracene	40	1	0.0279	<0.05	
Indeno(1,2,3-cd)pyrene	100	1	0.0279	< 0.05	
Total Group I PAHs	NE	1		<0.35	
Group II PAHs	6000			∠0.10	
Acenaphthene Acenaphthylene	40			<0.19 <0.19	
Anthracene	30			<0.19	
Benzo(g,h,i)perylene	20			<0.19	
Fluoranthene	200			< 0.19	
Fluorene	40			<0.19	
Phenanthrene Pyrene	10000 20			<0.19 <0.19	
Total Group II PAHs		100		<1.52	
Naphthalene	700	20		<0.19	
E. Halogenated SVOCs PCBs 608.3 (ug/l)					
Aroclor-1016	5			<0.09	
Aroclor-1221	5			<0.09	
Aroclor-1232	5			<0.09	
Aroclor 1242	5			<0.09	
Aroclor-1248 Aroclor-1254	5 5			<0.09 <0.09	
Aroclor-1254 Aroclor-1260	5			<0.09	
Aroclor-1262	5			<0.09	
Aroclor-1268	5			<0.09	
Total PCBs Pentachlorophenol	 200	0.000064 1	0.5 ⁽²⁾	<0.09 <0.84	
	200			\U.04	
<u>F. Fuel Parameters</u> TPH (mg/l)		5		<5	
Ethanol (mg/L)	10	Report		<10	
Methyl tert-butyl ether (ug/L)	5000	70	147	<0.5	
tert-Amyl Methyl Ether (TAME) (ug/L) tert Butyl Alcohol (ug/L)		90		<1 <25	
Notes		120		\ 23	

TPH - Total Petroleum Hydrocarbons PCBs- Polychlorinated Biphenyls

PCBs- Polychlorinated Biphenyls
VOCs- Volatile Organic Compounds
SVOCs- Semi-Volatile Organic Compounds
Results presented in micrograms per liter (µg/L), are equivalent to parts per billion (ppb)
Results presented in milligrams per liter (mg/L), are equivalent to parts per billion (ppm)
< xx indicates compound was not detected. Detection limit is provided.
Boxed/Bold values indicate exceedance of indicated standard
"--"- Not established or Not Test For
TBEL - Technology Based Effluent Limit
WQBEL - Water Quality Based Effluent Limit
(1) Final Effluent Limits to be Specified in EPA Authorization
(2) Compliance Level Shown

Colleen Brothers

From: Vakalopoulos, Catherine (DEP) < catherine.vakalopoulos@state.ma.us>

Sent: Friday, June 5, 2020 3:46 PM

To: Bryan Gammons
Cc: Colleen Brothers

Subject: Re: Worcester - 305 Belmont Street Project - RGP Dilution Factor Review

Hi Bryan,

Your revised dilution factor calculation of 7.33 based on a design flow of 50 gpm and a 7Q10 of 0.456 MGD is correct. Please note the fee info I included below. We will be transitioning to a new online reporting and payment system in early July and you will know when this happens because the instructions at the link below will be different.

Have a nice weekend!

Cathy

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection 1 Winter St., Boston, MA 02108, 617-348-4026 Please consider the environment before printing this e-mail

From: Bryan Gammons <BGammons@TigheBond.com>

Sent: Tuesday, June 2, 2020 2:21 PM **To:** Vakalopoulos, Catherine (DEP)

Cc: Colleen Brothers

Subject: RE: Worcester - 305 Belmont Street Project - RGP Dilution Factor Review

CAUTION: This email originated from a sender outside of the Commonwealth of Massachusetts mail system. Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Cathy,

I hope you are doing well.

You had previously approved our dilution factor in the emails below. The contractor recently provided an updated dewatering system with a reduced flow rate, therefore we revised our dilution factor calculations and the 7Q10 StreamStats information (attached). We will recalculate the WQBELs if you are ok with our revised dilution factor.

Thank you for your help, Bryan

Bryan Gammons | Senior Environmental Scientist

Tighe & Bond | 120 Front Street - Suite 7| Worcester, MA 01608 | T. 508.304.6366 Cell: 617.413.1693 www.tighebond.com | Follow us on: Twitter Facebook LinkedIn

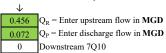
Tighe&Bond

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

Water Body	Segment ID	Description	Size	Units	Impairment	EPA TMDL No.
Kettle Brook	MA51-01	Outlet Kettle Brook Reservoir #1, Leicester	7.00	Miles	(Dewatering*)	
		to inlet Leesville Pond, Auburn (excluding			(Non-Native Aquatic Plants*)	
		the approximately 0.4 miles through Waite Pond segment MA51170) (through former			Benthic Macroinvertebrates	
		segments: City Pond MA51021, Smiths			Escherichia Coli (E. Coli)	
		Pond MA51156, and Stoneville Pond			Fecal Coliform	
		MA51160).			Nutrient/Eutrophication Biological Indicators	
Lake Quinsigamond	MA51125	Shrewsbury/Worcester.	474.00	Acres	(Eurasian Water Milfoil, Myriophyllum spicatum*)	
					(Non-Native Aquatic Plants*)	
					Algae	644
					Dissolved Oxygen	644
					Enterococcus	
Lake Ripple	MA51135	Grafton.	47.00	Acres	(Non-Native Aquatic Plants*)	
					Aquatic Plants (Macrophytes)	
Manchaug Pond	MA51091	Douglas/Sutton.	364.00	Acres	(Non-Native Aquatic Plants*)	
					Dissolved Oxygen	
					Mercury in Fish Tissue	42392
Marble Pond	MA51093	Sutton.	8.00	Acres	(Non-Native Aquatic Plants*)	
					Aquatic Plants (Macrophytes)	
Middle River	MA51-02	Headwaters, outlet Coes Pond, Worcester	3.40	Miles	(Debris*)	
		to confluence with the unnamed tributary			(Physical substrate habitat alterations*)	1
		locally known as "Mill Brook" (downstream of the railroad spur bridge west of Tobias			(Trash*)	1
		Boland Way), Worcester (through Middle			Benthic Macroinvertebrates	
		River Pond formerly segment MA51101).			Escherichia Coli (E. Coli)	
					Metals	
					Nutrient/Eutrophication Biological Indicators	
					Turbidity	
Mill River	MA51-35	Headwaters, outlet North Pond,	11.80	Miles	(Non-Native Aquatic Plants*)	
		Milford/Upton to Mendon/Blackstone			Aquatic Plants (Macrophytes)	
		corporate boundary (through former segments Fiske Millpond MA51049, Mill			Metals	
		Pond MA51102, Hopedale Pond MA51065 and Spindleville Pond MA51158) (formerly part of segment MA51-10).			PCBs In Fish Tissue	

Enter number values in green boxes below

Enter values in the units specified



Enter a dilution factor, if other than zero



Enter values in the units specified

\downarrow	
62.5	C_d = Enter influent hardness in mg/L CaCO ₃
81.7	C _s = Enter receiving water hardness in mg/L CaCO ₃

Enter receiving water concentrations in the units specified

	0
\downarrow	_
8.57	pH in Standard Units
9.71	Temperature in °C
0.15	Ammonia in mg/L
81.7	Hardness in mg/L CaCO ₃
0	Salinity in ppt
0	Antimony in μg/L
0	Arsenic in μg/L
0	Cadmium in µg/L
0	Chromium III in µg/L
0	Chromium VI in µg/L
0	Copper in µg/L
235	Iron in μg/L
0	Lead in μg/L
0	Mercury in μg/L
0	Nickel in μg/L
0	Selenium in μg/L
0	Silver in μg/L
15.6	Zinc in μg/L

Enter influent concentrations in the units specified

\downarrow	•
0	TRC in μg/L
0	Ammonia in mg/ L
0	Antimony in μg/L
9.7	Arsenic in μg/L
0	Cadmium in μg/L
0	Chromium III in μg/L
0	Chromium VI in μg/L
0	Copper in µg/L
8190	Iron in μg/L
3.4	Lead in μg/L
0	Mercury in μg/L
13.2	Nickel in μg/L
0	Selenium in μg/L
0	Silver in μg/L
34.3	Zinc in μg/L
0	Cyanide in μg/L
0	Phenol in μg/L
0	Carbon Tetrachloride in µg/L
0	Tetrachloroethylene in μg/L
0	Total Phthalates in μg/L
0	Diethylhexylphthalate in μg/L
0	Benzo(a)anthracene in μg/L
0	Benzo(a)pyrene in μg/L
0	Benzo(b)fluoranthene in μg/L
0	Benzo(k)fluoranthene in μg/L
0	Chrysene in µg/L
0	Dibenzo(a,h)anthracene in μg/L
0	Indeno(1,2,3-cd)pyrene in μg/L
0	Methyl-tert butyl ether in μg/L

Notes:

Freshwater: Q_R equal to the 7Q10; enter alternate Q_R if approved by the State; enter 0 if no dilution factor approved Saltwater (estuarine and marine): enter Q_R if approved by the State; enter 0 if no entry Discharge flow is equal to the design flow or 1 MGD, whichever is less Only if approved by State as the entry for Q_R ; leave 0 if no entry

Saltwater (estuarine and marine): only if approved by the State Leave 0 if no entry

Freshwater only

pH, temperature, and ammonia required for all discharges
Hardness required for freshwater
Salinity required for saltwater (estuarine and marine)
Metals required for all discharges if present and if dilution factor is > 1
Enter 0 if non-detect or testing not required

if >1 sample, enter maximum if >10 samples, may enter 95th percentile Enter 0 if non-detect or testing not required **Dilution Factor** 7.3

Dilution Factor	/.3				Compliance Level	
A. Inorganics	TBEL applies if	bolded	WQBEL applies	if bolded	applies if shown	
Ammonia	Report	mg/L				
Chloride	Report	μg/L				
Total Residual Chlorine	0.2	mg/L	81	$\mu g/L$		$\mu g/L$
Total Suspended Solids	30	mg/L				
Antimony	206	μg/L	4693	μg/L		
Arsenic	104	μg/L	73	μg/L		
Cadmium	10.2	μg/L	1.6678	μg/L		
Chromium III	323	μg/L	521.5	μg/L		
Chromium VI	323	μg/L	83.9	μg/L		
Copper	242	μg/L	56.0	μg/L		
Iron	5000	μg/L	5845	μg/L		
Lead	160	μg/L	17.31	μg/L		
Mercury	0.739	μg/L	6.64	μg/L		
Nickel	1450	μg/L	313.6	μg/L		
Selenium	235.8	μg/L	36.7	μg/L		
Silver	35.1	μg/L	18.5	μg/L		
Zinc	420	μg/L	621.4	μg/L μg/L		
Cyanide	178	mg/L	38.1	μg/L μg/L		μg/L
B. Non-Halogenated VOCs	170	mg/L	36.1	μg/L		μg/L
Total BTEX	100	μg/L				
Benzene	5.0	μg/L				
1,4 Dioxane	200	μg/L				
Acetone	7970	μg/L		/T		
Phenol C. Halogenated VOCs	1,080	μg/L	2200	μg/L		
Carbon Tetrachloride	4.4	μg/L	11.7	μg/L		
1,2 Dichlorobenzene	600	μg/L		F6-2		
1,3 Dichlorobenzene	320	μg/L				
1,4 Dichlorobenzene	5.0	μg/L				
Total dichlorobenzene		μg/L				
1,1 Dichloroethane 1,2 Dichloroethane	70 5.0	μg/L μg/L				
1,1 Dichloroethylene	3.2	μg/L μg/L				
Ethylene Dibromide	0.05	μg/L				
Methylene Chloride	4.6	μg/L				
1,1,1 Trichloroethane	200	μg/L				
1,1,2 Trichloroethane	5.0	μg/L				
Trichloroethylene Tetrachloroethylene	5.0 5.0	μg/L	24.2	a/I		
cis-1,2 Dichloroethylene	70	μg/L μg/L	24.2	μg/L		
Vinyl Chloride	2.0	μg/L				
D. Non-Halogenated SVOCs						
5	100	(T		/=		
Total Phthalates	190 101	μg/L μg/L	16.1	μg/L		
Diethylhexyl phthalate Total Group I Polycyclic	101	μg/L	10.1	μg/L		
Aromatic Hydrocarbons	1.0	μg/L				
Benzo(a)anthracene	1.0	μg/L	0.0279	$\mu g/L$		$\mu g/L$
Benzo(a)pyrene	1.0	$\mu g/L$	0.0279	$\mu g/L$		$\mu g/L$
Benzo(b)fluoranthene	1.0	μg/L	0.0279	μg/L		μg/L
Benzo(k)fluoranthene	1.0 1.0	μg/L	0.0279	μg/L		μg/L
Chrysene Dibenzo(a,h)anthracene	1.0	μg/L μg/L	0.0279 0.0279	μg/L μg/L		μg/L μg/L
Indeno(1,2,3-cd)pyrene	1.0	μg/L	0.0279	μg/L μg/L		μg/L
Total Group II Polycyclic						
Aromatic Hydrocarbons	100	$\mu g/L$				
Naphthalene	20	μg/L				
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	0.000064	μg/L			0.5	μg/L
Pentachlorophenol	1.0	μg/L μg/L			0.5	μg/∟
F. Fuels Parameters		1.0.7				
Total Petroleum Hydrocarbons	5.0	mg/L				
Ethanol	Report	mg/L				
Methyl-tert-Butyl Ether	70	μg/L	147	μg/L		
tert-Butyl Alcohol	120 90	μg/L				
tert-Amyl Methyl Ether	70	μg/L				

APPENDIX D



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



April 08, 2020

In Reply Refer To:

Consultation Code: 05E1NE00-2020-SLI-2018

Event Code: 05E1NE00-2020-E-06060 Project Name: 305 Belmont Street

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

To Whom It May Concern:

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

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

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

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

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

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

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

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

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

Attachment(s):

Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 05E1NE00-2020-SLI-2018

Event Code: 05E1NE00-2020-E-06060

Project Name: 305 Belmont Street

Project Type: ** OTHER **

Project Description: Redevelopment/ Construction

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.275713134818304N71.77478837437906W



Counties: Worcester, MA

Endangered Species Act Species

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

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

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

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

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

Mammals

NAME STATUS

Northern Long-eared Bat Myotis septentrionalis

Threatened

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045

Critical habitats

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



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Ecological Services Field Office 70 Commercial Street, Suite 300 Concord, NH 03301-5094 Phone: (603) 223-2541 Fax: (603) 223-0104

http://www.fws.gov/newengland



IPaC Record Locator: 143-21189401 April 08, 2020

Subject: Consistency letter for the '305 Belmont Street' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Colleen Brothers:

The U.S. Fish and Wildlife Service (Service) received on April 08, 2020 your effects determination for the '305 Belmont Street' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause "take" of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

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

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

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

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

_

Action Description

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

1. Name

305 Belmont Street

2. Description

The following description was provided for the project '305 Belmont Street':

Redevelopment/ Construction

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.275713134818304N71.77478837437906W



Determination Key Result

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

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

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

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

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

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

Determination Key Result

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

Qualification Interview

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

 No
- 2. Will your activity purposefully **Take** northern long-eared bats? *No*
- Is the project action area located wholly outside the White-nose Syndrome Zone?
 Automatically answered
 No
- 4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

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

Yes

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

No

6. Will the action involve Tree Removal?

Yes

- 7. Will the action only remove hazardous trees for the protection of human life or property? *No*
- 8. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

9. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

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

Estimated total acres of forest conversion:
 If known, estimated acres of forest conversion from April 1 to October 31
 If known, estimated acres of forest conversion from June 1 to July 31

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

- **4.** Estimated total acres of timber harvest *0*
- 5. If known, estimated acres of timber harvest from April 1 to October 31 $\boldsymbol{0}$
- 6. If known, estimated acres of timber harvest from June 1 to July 31 *0*

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

7. Estimated total acres of prescribed fire

0

- 8. If known, estimated acres of prescribed fire from April 1 to October 31 $\it 0$
- 9. If known, estimated acres of prescribed fire from June 1 to July 31 σ

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

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

APPENDIX E

Massachusetts Cultural Resource Information System MACRIS

MACRIS Search Results

Search Criteria: Town(s): Worcester; Street No: 305; Street Name: belmont;

Inv. No. Property Name Street Town Year

Thursday, May 21, 2020 Page 1 of 1

APPENDIX F



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Bryan Gammons
Tighe & Bond
4 Barlows Landing Road, Unit 15
Pocasset, MA 02559

RE: WUXI - RGP (W50630)

ESS Laboratory Work Order Number: 20C0231

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard

Laboratory Director

REVIEWED

By ESS Laboratory at 11:15 am, Mar 18, 2020

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

SAMPLE RECEIPT

The following samples were received on March 06, 2020 for the analyses specified on the enclosed Chain of Custody Record.

The samples and analyses listed below were analyzed in accordance with the 2017 Remediation General Permit under the National Pollutant Discharge Elimination System (NPDES).

ESS Laboratory is unable to achieve the required detection limit of 0.4 mg/L for Ethanol for the RGP permit. We have also been unable to procure a subcontract laboratory that is able to achieve this limit. The data for Ethanol has been reported using our current method reporting limit.

Lab Number	Sample Name	<u>Matrix</u>	<u>Analysis</u>
20C0231-01	MW-1	Ground Water	1664A, 200.7, 200.8, 245.1, 2520B, 2540D, 300.0,
			3113B, 350.1, 3500Cr B-2009, 420.1, 4500 CN CE,
			4500Cl D, 504.1, 524.2, 608.3, 625.1 SIM, 8270D
			SIM, ASTM D3695
20C0231-02	SW-1	Surface Water	200.7, 200.8, 245.1, 3113B, 350.1, 3500Cr B-2009

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

http://www.ESSLaboratory.com



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

PROJECT NARRATIVE

524.2 Volatile Organic Compounds

DC01149-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

1,4-Dichlorobenzene (22% @ 20%), Trichloroethene (21% @ 20%)

625.1(SIM) Semi-Volatile Organic Compounds

D0C0207-CCV1 Calibration required quadratic regression (Q).

2,4,6-Tribromophenol (105% @ 80-120%), Pentachlorophenol (92% @ 80-120%)

D0C0225-CCV1 <u>Calibration required quadratic regression (Q).</u>

Pentachlorophenol (89% @ 80-120%)

DC01105-BS1 Surrogate recovery(ies) above upper control limit (S+).

2,4,6-Tribromophenol (114% @ 15-110%)

Classical Chemistry

20C0231-01 The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and

Residual Chlorine is fifteen minutes.

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

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Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015C - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH

MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion

3020A - Aqueous Graphite Furnace / ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: 3005A/200.7

Dissolved Metals

<u>Analyte</u>	Results (MRL)	MDL	Method	<u>Limit</u>	<u>DF</u>	Analyst	Analyzed	<u>I/V</u>	F/V	Batch
Antimony	ND (10.0)	·	200.7	·	2	KJK	03/10/20 14:1	2 100	10	DC00936
Arsenic	9.7 (1.0)		3113B		2	KJK	03/11/20 21:4	0 100	10	DC00936
Cadmium	ND (0.2)		200.8		5	KJK	03/10/20 13:2	8 100	10	DC00936
Chromium	17.1 (10.0)		200.7		5	KJK	03/10/20 1:0:	5 100	10	DC00936
Copper	6.8 (4.0)		200.7		2	KJK	03/10/20 14:1	2 100	10	DC00936
Dissolved Chromium III	ND (20.0)		200.7		5	CCP	03/10/20 1:0:	5 1	1	[CALC]
Iron	8190 (50.0)		200.7		5	KJK	03/10/20 1:0:	5 100	10	DC00936
Lead	3.4 (0.5)		200.8		5	KJK	03/10/20 13:2	8 100	10	DC00936
Mercury	ND (0.20)		245.1		1	MKS	03/10/20 10:3	3 20	40	DC00938
Nickel	13.2 (10.0)		200.7		2	KJK	03/10/20 14:1	2 100	10	DC00936
Selenium	ND (1.0)		3113B		1	KJK	03/12/20 5:04	100	10	DC00936
Silver	ND (2.0)		200.7		2	KJK	03/10/20 14:1	2 100	10	DC00936
Zinc	34.3 (25.0)		200.7		5	KJK	03/10/20 1:0:	5 100	10	DC00936



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A

Extraction Method: [CALC]

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L

Total Metals

Analyte Results (MRL) **MDL** Method **Limit** Analyst Analyzed **Batch** Chromium III **24.4** (10.0) 200.7 CCP 03/10/20 1:09 [CALC]

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Quality

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 25 Final Volume: 25

Extraction Method: 524.2

Surrogate: 1,2-Dichlorobenzene-d4

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L Analyst: MD

524.2 Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	<u>DF</u>	Analyzed	Sequence	Batch
1,1,1-Trichloroethane	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,1,2-Trichloroethane	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,1-Dichloroethane	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,1-Dichloroethene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,2-Dichlorobenzene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,2-Dichloroethane	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,3-Dichlorobenzene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
1,4-Dichlorobenzene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Acetone	ND (5.0)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Benzene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Carbon Tetrachloride	ND (0.3)		524.2		1	03/11/20 15:32	D0C0196	DC01149
cis-1,2-Dichloroethene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Ethylbenzene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Methyl tert-Butyl Ether	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Methylene Chloride	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Naphthalene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Tertiary-amyl methyl ether	ND (1.0)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Tertiary-butyl Alcohol	ND (25.0)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Tetrachloroethene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Toluene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Trichloroethene	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Vinyl Chloride	ND (0.2)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Xylene O	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149
Xylene P,M	ND (0.5)		524.2		1	03/11/20 15:32	D0C0196	DC01149

%Recovery Qualifier Limits

102 % 80-120 Surrogate: 4-Bromofluorobenzene 106 % 80-120

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 1070 Final Volume: 1

Extraction Method: 3510C

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L Analyst: MJV

Prepared: 3/9/20 11:46

608.3 Polychlorinated Biphenyls (PCB)

Analyte Aroclor 1016	Results (MRL)	MDL	Method 608.3	<u>Limit</u>	$\frac{\mathbf{DF}}{1}$	<u>Analyzed</u> 03/09/20 15:05	Batch DC00901
	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1221	ND (0.09)				1		
Aroclor 1232	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1242	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1248	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1254	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1260	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1262	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
Aroclor 1268	ND (0.09)		608.3		1	03/09/20 15:05	DC00901
	9	%Recovery	Qualifier	Limits			
Surrogate: Decachlorobiphenyl		63 %		30-150			
Surrogate: Decachlorobiphenyl [2C]		65 %		30-150			
Surrogate: Tetrachloro-m-xylene		76 %		30-150			
Surrogate: Tetrachloro-m-xylene [2C]		87 %		30-150			

Service



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 1070 Final Volume: 0.25

Surrogate: p-Terphenyl-d14

Extraction Method: 3510C

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L Analyst: VSC

Prepared: 3/11/20 14:02

625.1(SIM) Semi-Volatile Organic Compounds

Analyte Acenaphthene	Results (MRL) ND (0.19)	<u>MDL</u>	Method 625.1 SIM	<u>Limit</u>	$\frac{\mathbf{DF}}{1}$	Analyzed 03/12/20 22:47	Sequence D0C0225	Batch DC01105
Acenaphthylene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Anthracene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Benzo(a)anthracene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Benzo(a)pyrene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Benzo(b)fluoranthene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Benzo(g,h,i)perylene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Benzo(k)fluoranthene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
bis(2-Ethylhexyl)phthalate	ND (1.87)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Butylbenzylphthalate	ND (2.34)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Chrysene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Dibenzo(a,h)Anthracene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Diethylphthalate	ND (2.34)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Dimethylphthalate	ND (2.34)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Di-n-butylphthalate	ND (2.34)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Di-n-octylphthalate	ND (2.34)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Fluoranthene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Fluorene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Indeno(1,2,3-cd)Pyrene	ND (0.05)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Naphthalene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Pentachlorophenol	ND (0.84)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Phenanthrene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
Pyrene	ND (0.19)		625.1 SIM		1	03/12/20 22:47	D0C0225	DC01105
	9	%Recovery	Qualifier	Limits				
Surrogate: 1,2-Dichlorobenzene-d4		58 %		30-130				
Surrogate: 2,4,6-Tribromophenol		83 %		15-110				
Surrogate: 2-Fluorobiphenyl		73 %		30-130				
Surrogate: Nitrobenzene-d5		89 %		30-130				

30-130

78 %



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 500 Final Volume: 0.5

Extraction Method: 3535A

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L Analyst: VSC

Prepared: 3/9/20 15:50

8270D(SIM) Semi-Volatile Organic Compounds w/ Isotope Dilution

Analyte 1,4-Dioxane	Results (MRL) ND (0.250)	<u>MDL</u>	Method 8270D SIM	<u>Limit</u>	<u>DF</u> 1	<u>Analyzed</u> 03/10/20 0:09	Sequence D0C0146	Batch DC00944
	%	Recovery	Qualifier	Limits				
Surrogate: 1,4-Dioxane-d8		60 %		15-115				

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Classical Chemistry

Analyte	Results (MRL)	MDL Method Limit	<u>DF</u>	Analyst Analyzed	<u>Units</u>	Batch
Ammonia as N	ND (0.10)	350.1	1	JLK 03/12/20 17:24	mg/L	DC01147
Chloride	5.3 (0.5)	300.0	1	EEM 03/10/20 13:09	mg/L	DC01015
Hexavalent Chromium	ND (10.0)	3500Cr B-2009	1	CCP 03/06/20 19:49	ug/L	DC00624
Phenols	ND (50)	420.1	1	EEM 03/10/20 14:15	ug/L	DC01016
Salinity	0.1 (0.1)	2520B	1	CCP 03/09/20 12:45	ppt	DC00920
Total Cyanide	ND (5.00)	4500 CN CE	1	EEM 03/09/20 15:20	ug/L	DC00914
Total Petroleum Hydrocarbon	ND (5)	1664A	1	LAB 03/11/20 15:28	mg/L	DC01123
Total Residual Chlorine	ND (20.0)	4500Cl D	1	CCP 03/06/20 19:09	ug/L	DC00623
Total Suspended Solids	750 (10)	2540D	1	CCP 03/09/20 14:29	mg/L	DC00922



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 35 Final Volume: 2

Extraction Method: 504/8011

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: ug/L Analyst: CAD

Prepared: 3/12/20 11:30

504.1 1,2-Dibromoethane / 1,2-Dibromo-3-chloropropane

<u>Analyte</u>	Results (MRL)	MDL	Method	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	Sequence	Batch
1,2-Dibromo-3-Chloropropane	ND (0.015)		504.1		1	03/12/20 13:37		DC01213
1,2-Dibromoethane	ND (0.015)		504.1		1	03/12/20 13:37		DC01213
		%Recovery	Qualifier	Limits				
		76RCCOVCIY	Quamici	LittiiCS				
Surrogate: Pentachloroethane		89 %		30-150				
Surrogate: Pentachloroethane [2C]		90 %		30-150				



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: MW-1 Date Sampled: 03/06/20 09:00

Percent Solids: N/A Initial Volume: 1 Final Volume: 1

Extraction Method: No Prep

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-01

Sample Matrix: Ground Water

Units: mg/L Analyst: ZLC

Prepared: 3/13/20 8:07

Alcohol Scan by GC/FID

Analyte Results (MRL) **MDL** Method **Limit** Analyst Analyzed **Sequence** Batch Ethanol ASTM D3695 ZLC 03/13/20 11:54 DC01324 ND (10)

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: SW-1 Date Sampled: 03/06/20 11:00

Percent Solids: N/A

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-02

Sample Matrix: Surface Water

Units: ug/L

Extraction Method: 3005A/200.7

Total Metals

Analyte	Results (MRL)	MDL Method	<u>Limit</u>	<u>DF</u>	Analyst	<u>Analyzed</u>	<u>I/V</u>	F/V	Batch
Antimony	ND (5.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Arsenic	ND (1.0)	3113B		2	KJK	03/11/20 22:02	100	10	DC00936
Cadmium	ND (0.2)	200.8		5	KJK	03/10/20 13:39	100	10	DC00936
Chromium	ND (2.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Chromium III	ND (10.0)	200.7		1	CCP	03/10/20 1:13	1	1	[CALC]
Copper	ND (2.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Hardness	81700 (82.4)	200.7		1	KJK	03/10/20 1:13	1	1	[CALC]
Iron	235 (10.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Lead	ND (2.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Mercury	ND (0.2)	245.1		1	MKS	03/10/20 10:38	20	40	DC00938
Nickel	ND (5.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Selenium	ND (1.0)	3113B		1	KJK	03/12/20 5:16	100	10	DC00936
Silver	ND (0.5)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936
Zinc	15.6 (5.0)	200.7		1	KJK	03/10/20 1:13	100	10	DC00936



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP Client Sample ID: SW-1 Date Sampled: 03/06/20 11:00

Percent Solids: N/A

ESS Laboratory Work Order: 20C0231 ESS Laboratory Sample ID: 20C0231-02

Sample Matrix: Surface Water

Classical Chemistry

Analyte Ammonia as N	Results (MRL) 0.15 (0.10)	MDL <u>Method</u> 350.1	<u>Limit</u>	<u>DF</u>	Analys JLK	<u>t</u> <u>Analyzed</u> 03/12/20 17:25	Units mg/L	Batch DC01147
Hexavalent Chromium	ND (10.0)	3500Cr B-2009		1	CCP	03/06/20 19:49	ug/L	DC00624



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		[Dissolved M	etals						
Batch DC00936 - 3005A/200.7										
Blank										
Antimony	ND	5.0	ug/L							
Chromium	ND	2.0	ug/L							
Copper	ND	2.0	ug/L							
Iron	ND	10.0	ug/L							
Nickel	ND	5.0	ug/L							
Silver	ND	1.0	ug/L							
Zinc	ND	5.0	ug/L							
Blank										
Cadmium	ND	0.2	ug/L							
Lead	ND	0.5	ug/L							
Blank										
Arsenic	ND	0.5	ug/L							
Selenium	ND	1.0	ug/L							
LCS										-
Antimony	52.0	5.0	ug/L	50.00		104	85-115			
Chromium	51.1	2.0	ug/L	50.00		102	85-115			
Copper	52.0	2.0	ug/L	50.00		104	85-115			
Iron	240	10.0	ug/L	250.0		96	85-115			
Nickel	52.1	5.0	ug/L	50.00		104	85-115			
Silver	26.2	1.0	ug/L	25.00		105	85-115			
Zinc	52.4	5.0	ug/L	50.00		105	85-115			
LCS										
Cadmium	24.0	1.0	ug/L	25.00		96	85-115			
Lead	44.2	2.5	ug/L	50.00		88	85-115			
LCS										
Arsenic	47.7	12.5	ug/L	50.00		95	85-115			
Selenium	90.9	25.0	ug/L	100.0		91	85-115			
			51-							
Batch DC00938 - 245.1/7470A										
Blank										
Mercury	ND	0.20	ug/L							
LCS										
Mercury	5.58	0.20	ug/L	6.042		92	85-115			
LCS Dup										
Mercury	5.71	0.20	ug/L	6.042		95	85-115	2	20	
			Total Meta	als						
Batch DC00936 - 3005A/200.7										
Blank										
Antimony	ND	5.0	ug/L							
Chromium	ND	2.0	ug/L							
Copper	ND	2.0	ug/L							



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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
			Total Met	als						
Batch DC00936 - 3005A/200.7										
Iron	ND	10.0	ug/L							
Lead	ND	2.0	ug/L							
Nickel	ND	5.0	ug/L							
Silver	ND	0.5	ug/L							
linc	ND	5.0	ug/L							
Blank										
Cadmium	ND	0.2	ug/L							
Blank										
Arsenic	ND	0.5	ug/L							
Selenium	ND	1.0	ug/L							
LCS										
Antimony	52.0	5.0	ug/L	50.00		104	85-115			
, Chromium	51.1	2.0	ug/L	50.00		102	85-115			
Copper	52.0	2.0	ug/L	50.00		104	85-115			
ron	240	10.0	ug/L	250.0		96	85-115			
ead	52.6	2.0	ug/L	50.00		105	85-115			
lickel	52.1	5.0	ug/L	50.00		104	85-115			
Silver	26.2	0.5	ug/L	25.00		105	85-115			
Zinc	52.4	5.0	ug/L	50.00		105	85-115			
LCS										
Cadmium	24.0	1.0	ug/L	25.00		96	85-115			
LCS										
Arsenic	47.7	12.5	ug/L	50.00		95	85-115			
Selenium	90.9	25.0	ug/L	100.0		91	85-115			
LCS Dup										
Cadmium	25.8	1.0	ug/L	25.00		103	85-115	7	20	
Batch DC00938 - 245.1/7470A			-							
Blank	ND	0.2	//							
Mercury	ND	0.2	ug/L							
LCS										
Mercury	5.6	0.2	ug/L	6.042		92	85-115			
LCS Dup										
Mercury	5.7	0.2	ug/L	6.042		95	85-115	2	20	
		524.2 Vol	atile Organi	ic Compou	unds					
Batch DC01149 - 524.2										
Blank										
1,1,1-Trichloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	0.5	ug/L							
1,1-Dichloroethane	ND	0.5	ug/L							
1,1-Dichloroethene	ND	0.5	ug/L							
1,2-Dichlorobenzene	ND	0.5	ug/L							

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

Batch DC01149 - 524.2							
1,2-Dichloroethane	ND	0.5	ug/L				
1,3-Dichlorobenzene	ND	0.5	ug/L				
1,4-Dichlorobenzene	ND	0.5	ug/L				
Acetone	ND	5.0	ug/L				
Benzene	ND	0.5	ug/L				
Carbon Tetrachloride	ND	0.3	ug/L				
cis-1,2-Dichloroethene	ND	0.5	ug/L				
Ethylbenzene	ND	0.5	ug/L				
Methyl tert-Butyl Ether	ND	0.5	ug/L				
Methylene Chloride	ND	0.5	ug/L				
Naphthalene	ND	0.5	ug/L				
Tertiary-amyl methyl ether	ND	1.0	ug/L				
Tertiary-butyl Alcohol	ND	25.0	ug/L				
Tetrachloroethene	ND	0.5	ug/L				
Toluene	ND	0.5	ug/L				
Trichloroethene	ND	0.5	ug/L				
Vinyl Chloride	ND	0.2	ug/L				
Xylene O	ND	0.5	ug/L				
Xylene P,M	ND	0.5	ug/L				
Surrogate: 1,2-Dichlorobenzene-d4	<i>5.04</i>		ug/L	5.000	101	80-120	
Surrogate: 4-Bromofluorobenzene	5.25		ug/L	5.000	105	80-120	
LCS							
1,1,1-Trichloroethane	11.4	0.5	ug/L	10.00	114	70-130	
1,1,2-Trichloroethane	10.1	0.5	ug/L	10.00	101	70-130	
1,1-Dichloroethane	9.5	0.5	ug/L	10.00	95	70-130	
1,1-Dichloroethene	12.3	0.5	ug/L	10.00	123	70-130	
1,2-Dichlorobenzene	11.4	0.5	ug/L	10.00	114	70-130	
1,2-Dichloroethane	10.9	0.5	ug/L	10.00	109	70-130	
1,3-Dichlorobenzene	11.4	0.5	ug/L	10.00	114	70-130	
1,4-Dichlorobenzene	11.4	0.5	ug/L	10.00	114	70-130	
Acetone	56.0	5.0	ug/L	50.00	112	70-130	
Benzene	8.9	0.5	ug/L	10.00	89	70-130	
Carbon Tetrachloride	12.7	0.3	ug/L	10.00	127	70-130	
cis-1,2-Dichloroethene	10.8	0.5	ug/L	10.00	108	70-130	
Ethylbenzene	10.9	0.5	ug/L	10.00	109	70-130	
Methyl tert-Butyl Ether	10.7	0.5	ug/L	10.00	107	70-130	
Methylene Chloride							
	10.9	0.5	ug/L	10.00	109	70-130	
Naphthalene	11.3	0.5	ug/L	10.00	113	70-130	
Naphthalene Tertiary-amyl methyl ether	11.3 9.7	0.5 1.0	ug/L ug/L	10.00 10.00	113 97	70-130 70-130	
Naphthalene Tertiary-amyl methyl ether Tertiary-butyl Alcohol	11.3 9.7 60.6	0.5 1.0 25.0	ug/L ug/L ug/L	10.00 10.00 50.00	113 97 121	70-130 70-130 70-130	
Naphthalene Tertiary-amyl methyl ether Tertiary-butyl Alcohol Tetrachloroethene	11.3 9.7 60.6 11.1	0.5 1.0 25.0 0.5	ug/L ug/L ug/L ug/L	10.00 10.00 50.00 10.00	113 97 121 111	70-130 70-130 70-130 70-130	
Naphthalene Tertiary-amyl methyl ether Tertiary-butyl Alcohol Tetrachloroethene Toluene	11.3 9.7 60.6 11.1 11.1	0.5 1.0 25.0 0.5 0.5	ug/L ug/L ug/L ug/L ug/L	10.00 10.00 50.00 10.00 10.00	113 97 121 111 111	70-130 70-130 70-130 70-130 70-130	
Naphthalene Tertiary-amyl methyl ether Tertiary-butyl Alcohol Tetrachloroethene Toluene Trichloroethene	11.3 9.7 60.6 11.1 11.1	0.5 1.0 25.0 0.5 0.5	ug/L ug/L ug/L ug/L ug/L ug/L	10.00 10.00 50.00 10.00 10.00	113 97 121 111 111	70-130 70-130 70-130 70-130 70-130 70-130	
Naphthalene Tertiary-amyl methyl ether Tertiary-butyl Alcohol Tetrachloroethene Toluene	11.3 9.7 60.6 11.1 11.1	0.5 1.0 25.0 0.5 0.5	ug/L ug/L ug/L ug/L ug/L	10.00 10.00 50.00 10.00 10.00	113 97 121 111 111	70-130 70-130 70-130 70-130 70-130	

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Allalyte	Nesuit					70INEC	Lilliu	NI D	LIIIIC	Qualifier
		524.2 Vol	atile Organi	c Compou	ınds					
Batch DC01149 - 524.2										
Xylene P,M	21.2	0.5	ug/L	20.00		106	70-130			
Surrogate: 1,2-Dichlorobenzene-d4	5.94		ug/L	5.000		119	80-120			
Surrogate: 4-Bromofluorobenzene	5.44		ug/L	5.000		109	80-120			
.CS Dup										
1,1,1-Trichloroethane	10.0	0.5	ug/L	10.00		100	70-130	13	20	
1,1,2-Trichloroethane	8.3	0.5	ug/L	10.00		83	70-130	20	20	
1,1-Dichloroethane	7.8	0.5	ug/L	10.00		78	70-130	19	20	
,1-Dichloroethene	10.1	0.5	ug/L	10.00		101	70-130	19	20	
.,2-Dichlorobenzene	9.4	0.5	ug/L	10.00		94	70-130	19	20	
,2-Dichloroethane	10.1	0.5	ug/L	10.00		101	70-130	8	20	
,3-Dichlorobenzene	9.5	0.5	ug/L	10.00		95	70-130	18	20	
,4-Dichlorobenzene	9.1	0.5	ug/L	10.00		91	70-130	22	20	D+
cetone	46.2	5.0	ug/L	50.00		92	70-130	19	20	
Benzene	8.0	0.5	ug/L	10.00		80	70-130	10	20	
Carbon Tetrachloride	11.0	0.3	ug/L	10.00		110	70-130	14	20	
is-1,2-Dichloroethene	9.9	0.5	ug/L	10.00		99	70-130	9	20	
thylbenzene	9.0	0.5	ug/L	10.00		90	70-130	19	20	
1ethyl tert-Butyl Ether	9.3	0.5	ug/L	10.00		93	70-130	14	20	
1ethylene Chloride	9.9	0.5	ug/L	10.00		99	70-130	9	20	
laphthalene	9.3	0.5	ug/L	10.00		93	70-130	19	20	
ertiary-amyl methyl ether	8.8	1.0	ug/L	10.00		88	70-130	10	20	
ertiary-butyl Alcohol	53.5	25.0	ug/L	50.00		107	70-130	13	25	
etrachloroethene	9.1	0.5	ug/L	10.00		91	70-130	20	20	
oluene	9.3	0.5	ug/L	10.00		93	70-130	18	20	
richloroethene	9.2	0.5	ug/L	10.00		92	70-130	21	20	D+
inyl Chloride	8.9	0.2	ug/L	10.00		89	70-130	17	20	
(ylene O	9.5	0.5	ug/L	10.00		95	70-130	14	20	
ylene P,M	18.4	0.5	ug/L	20.00		92	70-130	14	20	
Surrogate: 1,2-Dichlorobenzene-d4	5.51		ug/L	5.000		110	80-120			
Surrogate: 4-Bromofluorobenzene	5.17		ug/L	5.000		103	80-120			

608.3 Polychlorinated Biphenyls (PCB)

|--|

Blank			
Aroclor 1016	ND	0.10	ug/L
Aroclor 1016 [2C]	ND	0.10	ug/L
Aroclor 1221	ND	0.10	ug/L
Aroclor 1221 [2C]	ND	0.10	ug/L
Aroclor 1232	ND	0.10	ug/L
Aroclor 1232 [2C]	ND	0.10	ug/L
Aroclor 1242	ND	0.10	ug/L
Aroclor 1242 [2C]	ND	0.10	ug/L
Aroclor 1248	ND	0.10	ug/L
Aroclor 1248 [2C]	ND	0.10	ug/L
Aroclor 1254	ND	0.10	ua/L

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		608.3 Polyc	hlorinated	Biphenyls	(PCB)					
Batch DC00901 - 3510C										
Aroclor 1254 [2C]	ND	0.10	ug/L							
Aroclor 1260	ND	0.10	ug/L							
Aroclor 1260 [2C]	ND	0.10	ug/L							
Aroclor 1262	ND	0.10	ug/L							
Aroclor 1262 [2C]	ND	0.10	ug/L							
Aroclor 1268	ND	0.10	ug/L							
Aroclor 1268 [2C]	ND	0.10	ug/L							
Surrogate: Decachlorobiphenyl	0.0404		ug/L	0.05000		81	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0424		ug/L	0.05000		85	30-150			
Surrogate: Tetrachloro-m-xylene	0.0231		ug/L	0.05000		46	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0246		ug/L	0.05000		49	30-150			
LCS										
Aroclor 1016	0.86	0.10	ug/L	1.000		86	50-140			
Aroclor 1016 [2C]	0.86	0.10	ug/L	1.000		86	50-140			
Aroclor 1260	1.07	0.10	ug/L	1.000		107	1-164			
Aroclor 1260 [2C]	0.98	0.10	ug/L	1.000		98	1-164			
Surrogate: Decachlorobiphenyl	0.0547		ug/L	0.05000		109	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0571		ug/L	0.05000		114	30-150			
Surrogate: Tetrachloro-m-xylene	0.0278		ug/L	0.05000		56	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0299		ug/L	0.05000		60	30-150			
.CS Dup										
Aroclor 1016	0.99	0.10	ug/L	1.000		99	50-140	15	36	
Aroclor 1016 [2C]	0.87	0.10	ug/L	1.000		87	50-140	1	36	
Aroclor 1260	1.11	0.10	ug/L	1.000		111	1-164	4	38	
Aroclor 1260 [2C]	1.02	0.10	ug/L	1.000		102	1-164	4	38	
Surrogate: Decachlorobiphenyl	0.0495		ug/L	0.05000		99	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0515		ug/L	0.05000		103	30-150			
Surrogate: Tetrachloro-m-xylene	0.0311		ug/L	0.05000		62	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0314		ug/L	0.05000		63	30-150			
	62!	5.1(SIM) Sen	ni-Volatile (Organic Co	mpounds	5				
Batch DC01105 - 3510C										
Blank										
Acenaphthene	ND	0.20	ug/L							
Acenaphthylene	ND	0.20	ug/L							
Anthracene	ND	0.20	ug/L							
Benzo(a)anthracene	ND	0.05	ug/L							
Benzo(a)pyrene	ND	0.05	ug/L							
Benzo(b)fluoranthene	ND	0.05	ug/L							
Benzo(g,h,i)perylene	ND	0.20	ug/L							
Benzo(k)fluoranthene	ND	0.05	ug/L							
ois(2-Ethylhexyl)phthalate	ND	2.00	ug/L							

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ESS Laboratory Work Order: 20C0231

Quality Control Data

				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier

625.1(SIM) S	Semi-Volatile	Organic	Compounds
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Batch DC01105 - 3510C							
Butylbenzylphthalate	ND	2.50	ug/L				
Chrysene	ND	0.05	ug/L				
Dibenzo(a,h)Anthracene	ND	0.05	ug/L				
Diethylphthalate	ND	2.50	ug/L				
Dimethylphthalate	ND	2.50	ug/L				
oi-n-butylphthalate	ND	2.50	ug/L				
Di-n-octylphthalate	ND	2.50	ug/L				
luoranthene	ND	0.20	ug/L				
luorene	ND	0.20	ug/L				
ndeno(1,2,3-cd)Pyrene	ND	0.05	ug/L				
aphthalene	ND	0.20	ug/L				
entachlorophenol	ND	0.90	ug/L				
henanthrene	ND	0.20	ug/L				
yrene	ND	0.20	ug/L				
Surrogate: 1,2-Dichlorobenzene-d4	1.40		ug/L	2.500	56	30-130	
Surrogate: 2,4,6-Tribromophenol	2.51		ug/L	3.750	67	15-110	
Surrogate: 2-Fluorobiphenyl	1.55		ug/L	2.500	62	30-130	
Surrogate: Nitrobenzene-d5	2.01		ug/L	2.500	80	30-130	
urrogate: p-Terphenyl-d14	2.23		ug/L	2.500	89	30-130	
cs							
cenaphthene	2.80	0.20	ug/L	4.000	70	40-140	
cenaphthylene	2.68	0.20	ug/L	4.000	67	40-140	
nthracene	3.35	0.20	ug/L	4.000	84	40-140	
enzo(a)anthracene	3.17	0.05	ug/L	4.000	79	40-140	
enzo(a)pyrene	3.47	0.05	ug/L	4.000	87	40-140	
enzo(b)fluoranthene	3.47	0.05	ug/L	4.000	87	40-140	
enzo(g,h,i)perylene	3.36	0.20	ug/L	4.000	84	40-140	
enzo(k)fluoranthene	3.48	0.05	ug/L	4.000	87	40-140	
is(2-Ethylhexyl)phthalate	4.08	2.00	ug/L	4.000	102	40-140	
utylbenzylphthalate	3.97	2.50	ug/L	4.000	99	40-140	
hrysene	3.38	0.05	ug/L	4.000	85	40-140	
ibenzo(a,h)Anthracene	3.37	0.05	ug/L	4.000	84	40-140	
iethylphthalate	3.57	2.50		4.000	89	40-140	
imethylphthalate	3.40	2.50	ug/L ug/L	4.000	85	40-140	
i-n-butylphthalate	3.83	2.50	ug/L	4.000	96 07	40-140	
i-n-octylphthalate luoranthene	3.87	2.50	ug/L	4.000	97	40-140	
	3.80	0.20	ug/L	4.000	95	40-140	
luorene	3.12	0.20	ug/L	4.000	78	40-140	
ndeno(1,2,3-cd)Pyrene	3.51	0.05	ug/L	4.000	88	40-140	
aphthalene	2.38	0.20	ug/L	4.000	60	40-140	
entachlorophenol	2.69	0.90	ug/L	4.000	67	30-130	
henanthrene	3.24	0.20	ug/L	4.000	81	40-140	
yrene	3.58	0.20	ug/L	4.000	89	40-140	
Surrogate: 1,2-Dichlorobenzene-d4	1.41		ug/L	2.500	56	30-130	
Surrogate: 2,4,6-Tribromophenol	4.27		ug/L	3.750	114	<i>15-110</i>	S+

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CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

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		Quali	ty Cont	rol Da	ıta					
				Spike	Source		%REC		RPD	
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
	62	5.1(SIM) Ser	ni-Volatile (Organic Co	ompound	S				
Batch DC01105 - 3510C										
Surrogate: 2-Fluorobiphenyl	1.72		ug/L	2.500		69	30-130			
Surrogate: Nitrobenzene-d5	1.89		ug/L	2.500		<i>75</i>	30-130			
Surrogate: p-Terphenyl-d14	2.17		ug/L	2.500		87	30-130			
LCS Dup										
Acenaphthene	3.10	0.20	ug/L	4.000		78	40-140	10	20	
Acenaphthylene	2.97	0.20	ug/L	4.000		74	40-140	10	20	
Anthracene	3.57	0.20	ug/L	4.000		89	40-140	6	20	
Benzo(a)anthracene	3.57	0.05	ug/L	4.000		89	40-140	12	20	
Benzo(a)pyrene	3.94	0.05	ug/L	4.000		98	40-140	13	20	
Benzo(b)fluoranthene	3.96	0.05	ug/L	4.000		99	40-140	13	20	
Benzo(g,h,i)perylene	3.82	0.20	ug/L	4.000		95	40-140	13	20	
Benzo(k)fluoranthene	3.80	0.05	ug/L	4.000		95	40-140	9	20	
ois(2-Ethylhexyl)phthalate	4.67	2.00	ug/L	4.000		117	40-140	13	20	
Butylbenzylphthalate	4.56	2.50	ug/L	4.000		114	40-140	14	20	
Chrysene	3.90	0.05	ug/L	4.000		97	40-140	14	20	
Dibenzo(a,h)Anthracene	3.85	0.05	ug/L	4.000		96	40-140	13	20	
Diethylphthalate	3.95	2.50	ug/L	4.000		99	40-140	10	20	
Dimethylphthalate	3.76	2.50	ug/L	4.000		94	40-140	10	20	
Di-n-butylphthalate	4.20	2.50	ug/L	4.000		105	40-140	9	20	
Di-n-octylphthalate	4.44	2.50	ug/L	4.000		111	40-140	14	20	
Fluoranthene	4.08	0.20	ug/L	4.000		102	40-140	7	20	
Fluorene	3.48	0.20	ug/L	4.000		87	40-140	11	20	
Indeno(1,2,3-cd)Pyrene	4.02	0.05	ug/L	4.000		101	40-140	14	20	
Naphthalene	2.59	0.20	ug/L	4.000		65	40-140	8	20	
Pentachlorophenol	3.09	0.90	ug/L	4.000		77	30-130	14	20	
Phenanthrene	3.48	0.20	ug/L	4.000		87	40-140	7	20	
Pyrene	4.04	0.20	ug/L	4.000		101	40-140	12	20	
	8270D(SIM)	Semi-Volatile	e Organic Co	ompounds	s w/ Isoto	pe Dilutio	on			
Batch DC00944 - 3535A										
Blank										
1,4-Dioxane	ND	0.250	ug/L							
Surrogate: 1,4-Dioxane-d8	2.16		ug/L	5.000		43	15-115			
LCS										
1,4-Dioxane	9.26	0.250	ug/L	10.00		93	40-140			
Surrogate: 1,4-Dioxane-d8	2.56		ug/L	5.000		51	15-115			

ug/L Classical Chemistry

10.00

5.000

ug/L

Batch DC00623 - General Preparation

Blank

LCS Dup 1,4-Dioxane

Surrogate: 1,4-Dioxane-d8

185 Frances Avenue, Cranston, RI 02910-2211

9.62

2.64

0.250

Dependability

Tel: 401-461-7181

Quality

Fax: 401-461-4486

96

40-140

15-115

http://www.ESSLaboratory.com

20



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
		Cl	assical Che	mistry						
Batch DC00623 - General Preparation										
Total Residual Chlorine	ND	20.0	ug/L							
LCS										
Total Residual Chlorine	1.30		mg/L	1.300		100	85-115			
Batch DC00624 - General Preparation										
Blank										
Dissolved Hexavalent Chromium	ND	10	ug/L							
Hexavalent Chromium	ND	10.0	ug/L							
Hexavalent Chromium	ND	10	ug/L							
LCS										
Dissolved Hexavalent Chromium	525	10	ug/L	499.8		105	90-110			
Hexavalent Chromium	525	10	ug/L	499.8		105	90-110			
Hexavalent Chromium	525	10.0	ug/L	499.8		105	90-110			
LCS Dup										
Dissolved Hexavalent Chromium	512	10	ug/L	499.8		102	90-110	2	20	
Hexavalent Chromium	512	10	ug/L	499.8		102	90-110	2	20	
Hexavalent Chromium	512	10.0	ug/L	499.8		102	90-110	2	20	
Batch DC00914 - TCN Prep										
Blank										
Total Cyanide	ND	5.00	ug/L							
LCS										
Total Cyanide	20.5	5.00	ug/L	20.06		102	90-110			
LCS										
Total Cyanide	148	5.00	ug/L	150.4		99	90-110			
LCS Dup										
Total Cyanide	149	5.00	ug/L	150.4		99	90-110	0.2	20	
Batch DC00920 - General Preparation										
LCS										
Salinity	1.0		ppt	1.000		97	85-115			
Batch DC00922 - General Preparation										
Blank										
Total Suspended Solids	ND	5	mg/L							
LCS										
Total Suspended Solids	90		mg/L	90.70		99	80-120			
Batch DC01015 - General Preparation										
Blank										
Chloride	ND	0.5	mg/L							
LCS										
Chloride	9.7		mg/L	10.00		97	90-110			
Batch DC01016 - General Preparation			-							
Blank										

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



RPD

CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

%REC

Quality Control Data

Spike

Source

	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifie
		Cla	assical Che	mistry						
atch DC01016 - General Preparation										
rhenols	ND	50	ug/L							
.cs										
PhenoIs	106	50	ug/L	100.0		106	80-120			
LCS										
Phenols	1010	50	ug/L	1000		101	80-120			
Satch DC01123 - General Preparation										
llank										
Total Petroleum Hydrocarbon	ND	5	mg/L							
.cs										
otal Petroleum Hydrocarbon	14	5	mg/L	19.38		73	66-114			
Batch DC01147 - NH4 Prep										
ilank										
Ammonia as N	ND	0.10	mg/L							
LCS										
Ammonia as N	0.11	0.10	mg/L	0.09994		109	80-120			
LCS										
ummonia as N	0.94	0.10	mg/L	0.9994		94	80-120			
	504 1 1	2-Dibromoeth	nano / 1 7 ₋	Dihromo-3	2-chloroni	onana				
	504.1 1,2	2-Dibromoeth	nane / 1,2-	Dibromo-3	3-chloropi	opane				
Batch DC01213 - 504/8011	504.1 1,2	2-Dibromoeth	nane / 1,2-	Dibromo-3	3-chloropi	opane				
	504.1 1,2	2-Dibromoeth	nane / 1,2-	Dibromo-3	3-chloropi	opane				
Blank	504.1 1,i	2-Dibromoeth		Dibromo-3	3-chloropi	ropane				
Blank 1,2-Dibromo-3-Chloropropane			ug/L	Dibromo-3	3-chloropi	ropane				
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C]	ND	0.015	ug/L	Dibromo-3	3-chloropi	ropane				
Blank L,2-Dibromo-3-Chloropropane L,2-Dibromo-3-Chloropropane [2C] L,2-Dibromoethane	ND ND	0.015 0.015	ug/L ug/L	Dibromo-3	3-chloropi	opane				
Blank L,2-Dibromo-3-Chloropropane L,2-Dibromo-3-Chloropropane [2C] L,2-Dibromoethane	ND ND ND ND	0.015 0.015 0.015	ug/L ug/L ug/L ug/L		3-chloropi					
Ilank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C]	ND ND ND ND	0.015 0.015 0.015	ug/L ug/L ug/L ug/L	0.2000	3-chloropi	89	30-150			
3lank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane	ND ND ND ND	0.015 0.015 0.015	ug/L ug/L ug/L ug/L		3-chloropi		30-150 30-150			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane [2C]	ND ND ND ND	0.015 0.015 0.015	ug/L ug/L ug/L ug/L	0.2000	3-chloropi	89				
Alank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane [2C] Sourrogate: Pentachloroethane Sourrogate: Pentachloroethane [2C] CCS	ND ND ND ND	0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L	0.2000	3-chloropi	89				
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] CS 1,2-Dibromo-3-Chloropropane	ND ND ND ND 0.179 0.169	0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000	3-chloropi	89 85	30-150			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] .CS 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C]	ND ND ND ND 0.179 0.169	0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000	3-chloropi	89 85	<i>30-150</i> 70-130			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] LCS 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane	ND ND ND ND 0.179 0.169	0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000	3-chloropi	89 85 99 91	70-130 70-130			
Batch DC01213 - 504/8011 Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 2C] Surrogate: Pentachloroethane Surrogate: Pentachloropropane 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane	ND ND ND ND 0.179 0.169	0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000	3-chloropi	89 85 99 91 96	70-130 70-130 70-130			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] LCS 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072	0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.08000	3-chloropi	89 85 99 91 96 90	70-130 70-130 70-130 70-130 70-130			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloropropane 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072	0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.08000	3-chloropi	89 85 99 91 96 90	70-130 70-130 70-130 70-130 70-130			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloropropane 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072	0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.2000 0.2000	3-chloropi	89 85 99 91 96 90 39 39	70-130 70-130 70-130 70-130 70-130 30-150 30-150			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] LCS 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072	0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.2000 0.2000	3-chloropi	89 85 99 91 96 90 39 39	70-130 70-130 70-130 70-130 70-130 30-150 30-150			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] LCS 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072 0.0785	0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.2000 0.2000	3-chloropi	89 85 99 91 96 90 39 39	70-130 70-130 70-130 70-130 70-130 30-150 70-130 70-130			
Blank 1,2-Dibromo-3-Chloropropane 1,2-Dibromo-3-Chloropropane [2C] 1,2-Dibromoethane 1,2-Dibromoethane [2C] Surrogate: Pentachloroethane Surrogate: Pentachloroethane [2C] LCS 1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	ND ND ND ND 0.179 0.169 0.079 0.072 0.077 0.072	0.015 0.015 0.015 0.015 0.015 0.015 0.015 0.015	ug/L ug/L ug/L ug/L ug/L ug/L ug/L ug/L	0.2000 0.2000 0.08000 0.08000 0.08000 0.2000 0.2000	3-chloropi	89 85 99 91 96 90 39 39	70-130 70-130 70-130 70-130 70-130 30-150 30-150			



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Quality Control Data

A I. d	Describ	MDI	11-1-	Spike	Source	0/ DEC	%REC	DDD	RPD	01:6:
Analyte	Result	MRL	Units	Level	Result	%REC	Limits	RPD	Limit	Qualifier
	504.1 1,2	2-Dibromoet	hane / 1,2-	Dibromo-3	3-chloropi	ropane				
Batch DC01213 - 504/8011										
Surrogate: Pentachloroethane [2C]	0.185		ug/L	0.2000		93	30-150			
		Alco	hol Scan by	/ GC/FID						
Batch DC01324 - No Prep										
Blank										
Ethanol	ND	10	mg/L							
ıcs										
Ethanol	684	10	mg/L	952.8		72	60-140			
LCS Dup										
Ethanol	677	10	ma/L	952.8		71	60-140	1	30	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS Laboratory Work Order: 20C0231

Notes and Definitions

U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
Q	Calibration required quadratic regression (Q).
нт	The maximum holding time listed in 40 CER Part 136 Table II for pH. Dissolved Ovygen

HT The maximum holding time listed in 40 CFR Part 136 Table II for pH, Dissolved Oxygen, Sulfite and Residual Chlorine is fifteen minutes.

D+ Relative percent difference for duplicate is outside of criteria (D+).

D Diluted.

ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference Method Detection Limit MDL MRL Method Reporting Limit LOD Limit of Detection LOQ Limit of Quantitation **Detection Limit** DL I/V Initial Volume F/V Final Volume

Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range. 3 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

NR No Recovery

[CALC] Calculated Analyte

SUB Subcontracted analysis; see attached report

RL Reporting Limit

EDL Estimated Detection Limit
MF Membrane Filtration
MPN Most Probably Number
TNTC Too numerous to Count
CFU Colony Forming Units

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.

ESS Laboratory Work Order: 20C0231



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond Client Project ID: WUXI - RGP

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002 http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

ESS Laboratory Sample and Cooler Receipt Checklist

Client:		Tighe & Bon	id - KPB/TB			roject ID: Received:	20C0231 3/6/2020	
Shipped/De	livered Via:		ESS Courier		Project [Due Date:	3/13/2020	
					Days to	or Project:	5 Day	
	anifest prese			No		match bottles?		Yes
	stody seals p			No		plete and correct?		Yes Yes
3. Is radiation	on count <10	0 CPM?		Yes		les received intact?		<u> </u>
			_	Yes	9. Were labs l	nformed about <u>short</u>	holds & rushes?	Yes / No / NA
4. Is a Cool Temp:	1.1	lced with:	lce	165	10. Were any	analyses received out	side of hold time?	Yes 🔥
5. Was CO	C signed and	I dated by cl	ient?	Yes				
			Yes (12. Were VOA a. Air bubbles b. Does meth	As received? s in aqueous VOAs? anol cover soil comple	tely?	Yes / No Yes / No / NA
a. If metals	samples pro preserved u el VOA vials	pon receipt:		Yes)/ No Date:_ Date:_	Time:	F	Зу:	
Sample Re	ceiving Notes	s:						
	<u> </u>		 ·					
	ere a need to		oject Manager client?		Yes / No Yes / No Time:_		Зу:	
			_			<u> </u>		
Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative		Cyanide and 608 ticides)
1	21267	Yes	No	Yes	VOA Vial	HCI		
1	212 68	Yes	No	Yes	VOA Vial	HCI		
1	2126 9	Yes	No	Yes	VOA Vial	HCI		
1	21270	Yes	No	Yes	VOA Vial	HCI		
1	21271	Yes	No	Yes	VOA Vial	HCI		
1	21272	Yes	No	Yes	VOA Vial	HCI		
1	21273	Yes	No	Yes	VOA Vial	NP		
1	21274	Yes	N/A	Yes	1L Amber	H2SO4		
1	21274 21275	Yes	N/A	Yes	1L Amber	H2SO4		
		Yes	N/A	Yes	1L Amber	NP		
1	21276			Yes	1L Amber	NP		
1	21277	Yes	N/A			NP		
1	2 1278	Yes	N/A	Yes	1L Amber	NP		
1	2127 9	Yes	N/A	Yes	1L Amber			
1	212 80	Yes	N/A	Yes	1L Amber	NP		
1	21281	Yes	N/A	Yes	1L Amber	NP		
1	21282	Yes	N/A	Yes	1L Poly	NP		
1	2 1283	Yes	N/A	Yes	250 mL Poly	NP		

21283

1

ESS Laboratory Sample and Cooler Receipt Checklist

Client:		Tighe & Bor	nd <u>- KPB/TB</u>			ESS Project ID: Date Received:	20C0231 3/6/2020
1	21284	Yes	N/A	Yes	500 mL Poly	H2SO4	<u> </u>
1	21298	Yes	N/A	Yes	500 mL Poly	HNO3	
1	21299	Yes	N/A	Yes	500 mL Poly	HNO3	
1	21300	Yes	N/A	Yes	250 mL Poly	HNO3	
1	21301	Yes	N/A	Yes	250 mL Poly	NaOH	pH > 12
2	21124	Yes	N/A	Yes	500 mL Poly	HNO3	
2	2 1125	Yes	N/A	Yes	250 mL Poly	HNO3	
2	21 126	Yes	N/A	Yes	250 mL Poly	NP	
2	211 27	Yes	N/A	Yes	500 mL Poly	H2SO4	

2nd Review

Were all containers scanned into storage/lab?

Are barcode labels on correct containers?

Are all Flashpoint stickers attached/container ID # circled?

Are all Hex Chrome stickers attached?

Are all QC stickers attached?

Are VOA stickers attached if bubbles noted?

Initials Yes / No / NA Yes / No / NA

Completed By:		Date &	Time: , 3/6/7	u 1840	
Reviewed By:	CHI	Date &	Time: _3(1/201	1853	
Delivered By:			3/6/20	/657	
		4			

rss L	aborato	rv		CHAIN OF CUSTODY									ESS LAB PROJECT ID COCOZS Reporting Limits - REP Required MIS attached Discharge into: Fresh Water Salt Water										
	f Thielsch E		g, Inc.	Turn Time		andard Rush		d By:					Rej	orti	ng L	mit	s - K	GP F	acy	nreo	Μť	S —	. 1
185 Frances	Avenue, Cran	ston, RI 029	10-2211			collected MA)NH											Water	KJ	Salt	Wate	<u>r L</u>	4
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Company:	Project Mana TIGWE + P I UNIVERS WESTWOOD	rond			Pro	oject # W 50G oject Name: WWX \ O#		Analysis	RGP Metals Total	RGP Metals Dissolved	Hardness (Calculation)	Ethanol ASTM D3695 Chloride 300.0*	Cyanide 4500 LL	TPH 1664	18S 2540D* TRC 4500-CL D*	nonia 350.1	Tri Cr (Calc. MUST run T. Cr)	Hex Grand 400 1	VOC Long List 524	1,4-Dioxane 8270-SIM	EDB 504.1 RGP SVOC Log List 625-SIM	PCB 608	Comment #
ESS Lab	Date	Collection Time	Grab -G Composite-C	Matrix	<u> </u>	Sample Identification	tion	# of Containers	RGP I	RGP 1	Hard	똷	Tota	TPH	2 S	Ā	Ĕ	쮨					
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Preservation	Code: 1-NP, 2-	HCl, 3-H2SO	4, 4- HNO3, 5	-NaOH, 6-MeO	H, 7-Asorbic Aci	d, 8-ZnAct, 9			4 P	P	P	VI	P	AG	PI) P	-				V A		
Container Ty	ype: P-Poly G-G	lass AG-Aml	per Glass S-S	terile V-VOA	er SW-Surface W	ater DW-Drinking	Water O-Oil W-Wi	pes F-Filter			<u></u>												ᅴ
Cooler Pro Seals Inta Cooler Te	esent Yes ct Yes emperature: C	Yes No_N 入りよ	No IA:	Sampled Comment 2 Parame 1 Parame Reserved Comment	s: 1) RGP Met sters in BOLD (C and Cl tal	20 THEES rals include Sb, have Short hole sen from the se	As, Cd, Cu, Fe, P	b, Ni, Se, A PER RUN	<u> </u>	1 4	V V Date	ACE	يرون				Pec Rec		女(の y: (Sig ひ	れば natupb ハフ	<u>nce</u> 57	<u>xu^v</u>	La
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Test Methods and Minimum Levels

Test methods found in 40 CFR §136 are required for all analyses of parameters under this general permit unless other test methods are explicitly required or allowed in this general permit. All analyses of parameters under this general permit must comply with the National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting rule. Only sufficiently sensitive test methods may be used for analyses of parameters under this general permit. A test method is sufficiently sensitive where:³

- 1. The method minimum level (ML) is at or below the level of the applicable water quality criterion or permit limitation for the measured pollutant or pollutant parameter;
- 2. In the case of NOIs, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a site's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- 3. The method has the lowest ML of the EPA-approved analytical methods.

For the purposes of the RGP, the ML is the lowest level at which the laboratory analytical testing method provides a detectable concentration of the target analyte in a sample.⁴ The ML represents the lowest concentration at which the concentration of a parameter can be measured with a known level of confidence. The MLs specified in this appendix may be:

- 1. Published in a method;
- 2. Concentrations equivalent to the lowest acceptable calibration point used by a laboratory;
- 3. Calculated by multiplying the method detection limit (MDL) in a method, the MDL determined by a lab, 5 or an interim ML (IML) by a multiplying factor; or
- 4. An IML, based on the actual performance for a test method at EPA's New England Regional Laboratory.

The detection limit (DL) for all parameters in this general permit must be equal to or less than the ML required for that parameter. When a sample is analyzed for a parameter, but the parameter is not detected ("non-detect"), operators must report the non-detect using the data qualifier signifying less than the DL achieved for that parameter (e.g., $<2 \mu g/L$), if the DL reported for the parameter is 2 $\mu g/L$). For the purposes of the RGP, the DL is the lowest concentration that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method during routine laboratory operating conditions (i.e., the level above which a value is reported for an analyte, and the level below which an analyte is reported as non-detect).

For parameters included in the RGP that are limited below the MLs specified, an operator will be in compliance with the test method and ML requirements for a parameter if the sample result is below the compliance level specified in Part 2.1.1 of the RGP for that parameter.

¹ Test methods approved under CWA §304(h), including approved alternative test procedures and allowable method modifications. See 40 CFR Part 136.5 and 136.6.

² Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

³ 40 CFR §122.21(e)(3), 40 CFR §122.44(i)(1)(iv) and 40 CFR §136.1.

⁴ EPA is considering related terms to be synonymous, which include, but are not limited to: "quantitation limit," "reporting limit," and "level of quantitation".

⁵ The MDL is determined using the procedure at 40 CFR Part 136, appendix B, defined as the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

			Orgai	nic Test Method	ls	
Parameter	CAS Number(s)	GC ⁵	GC/MS ⁶	HPLC ⁷	State Methods ⁸	Other ⁹
b. Non-Halogenated Vol	atile Organic Compound	S				
Total BTEX	71-43-2 + 108-88-3 + 100-41-4 + 106-42-3 + 95-47-6 + 1330-20-7	602 (0.5 μg/L)	624 (1-2 μg/L) 1624 (2-4 μg/L)		MA VPH (5 μg/L)	8260 (2 μg/L) 524.2 (0.5 μg/L)
Benzene	71-43-2	602 (0.5 μg/L)	624, 1624 (2 μg/L)		MA VPH (5 μg/L)	8260 (2 μg/L) 524.2 (0.5 μg/L)
1,4 Dioxane	123-91-1	<u> </u>	1624 (50 μg/L)	1000		8260 (5 μg/L) 522 (0.1 μg/L)
Acetone	67-64-1		1624 (50 μg/L)			8260 (50 μg/L) 524.2 (10 μg/L)
Phenol	108-95-2		625 (2.5 μg/L)			8270 (5 μg/L) 420.1, 420.2 (2 μg/I 420.4 (50 μg/L)
c. Halogenated Volatile	Organic Compounds					
Carbon Tetrachloride	56-23-5	601 (0.5 μg/L)	624 (1 μg/L)			8260 (5 μg/L) 524.2 (0.5 μg/L)
1,2 Dichlorobenzene	95-50-1	601, 602 (0.5 μg/L)	624 (2.5 μg/L)			8260 (5 μg/L) 524.2 (0.5 μg/L)
1,3 Dichlorobenzene	541-73-1	601, 602 (0.5 μg/L)	624 (2.5 μg/L)			8260 (5 μg/L) 524.2 (0.5 μg/L)
1,4 Dichlorobenzene	106-46-7	601, 602 (0.5 μg/L)	624 (2.5 μg/L)			8260 (5 μg/L) 524.2 (0.5 μg/L)
Total dichlorobenzene	95-50-1 + 541-73-1 + 106-46-7	601, 602 (0.5 μg/L)	624 (2.5 μg/L)			8260 (5 μg/L) 524.2 (0.5 μg/L)
1,1 Dichloroethane	75-34-3	601 (0.5 μg/L)	624 (1 μg/L)		,	8260 (5 μg/L) 524.2 (0.5 μg/L)

			Orga	nnic Test Methods		
Parameter	CAS Number(s)	GC ⁵	GC/MS ⁶	HPLC ⁷	State Methods ⁸	Other ⁹
Total Group I Polycyclic Aromatic Hydrocarbons	56-55-3 + 50-32-8 + 205-99-2 + 207-08-9 + 218-01-9 + 53-70-3 + 193-39-5	610 (5 μg/L)	625 (0.5 μg/L) 1625 (10-20 μg/L)	610 (0.5-2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Benzo(a)anthracene	56-55-3	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Benzo(a)pyrene	50-32-8	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Benzo(b)fluoranthene	205-99-2	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Benzo(k)fluoranthene	207-08-9	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Chrysene	218-01-9	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Dibenzo(a,h)anthracene	53-70-3	610 (5 μg/L)	625 (0.5 μg/L)	610 (2 μg/L)	MA EPH (5 μg/L)	8270 (5 μg/L) SIM ¹⁰ (0.1 μg/L) 525.2 (0.5 μg/L)
Indeno(1,2,3-cd)pyrene	193-39-5	610 (5 μg/L)	625 (0.5 μg/L)	610 (0.5 μg/L)	MA EPH (5 μg/L)	8270 (5 µg/L) SIM ¹⁰ (0.1 µg/L) 525.2 (0.5 µg/L

Footnotes:

- Inductively Coupled Plasmas/Atomic (optical) Emissions Spectrometry
- Inductively Coupled Plasmas/Mass Spectrometry
- ³ Graphite Furnace Atomic Absorption
- Standard Method
- ⁵ Gas Chromatography
- 6 Gas Chromatography/Mass Spectrometry
- 7 Liquid Chromatography
- The Massachusetts test methods for Volatile Petroleum Hydrocarbons (VPH) and Extractable Petroleum Hydrocarbons (EPH) cannot be used for the purposes of analysis under this general permit.
- Test methods 8260 and 8270 cannot be used for the purposes of analysis under this general permit unless approved for use in accordance with 40 CFR Part 136.5. Specific preparation methods may be required.
- Selected Ion Monitoring is a test method modification allowed in 40 CFR Part 136.6.

Additional Notes:

- Method revision numbers are generally not shown. Generally, the most recent method revision should be used for analyses.
- The ML for SM⁵ 4500-Cl D, the amperometric direct method, 200 μg/L, is the level above which this method is recommended for use, as noted in the method; the ML for SM⁵ 4500-Cl G, the DPD spectrophotometric method (DPD colorimetric method), 50 μg/L, is the lowest acceptable calibration point, as noted in the method, and is the compliance level for TRC in this general permit. SM 4500-Cl E, the low-level amperometric direct method (low-level amperometric titration method) should be used when the TRC effluent limitation is < 50 μg/L. A ML is not noted in the method for SM 4500-Cl E, but a detection limit of 10 μg/L is noted. See Standard Methods for the Examination of Water and Wastewater for the full text of these methods.
- ³ Method OIA-1677 does not measure iron cyanide complexes.
- 4 Methods 522, 504.1, 524, and 525.2 are drinking water methods that can be used in special situations.
- Methods 3520 (continuous extraction), 3535 (solid phase extraction), and 3510 (separatory funnel extraction) are comparable organic preparation methods.

	Requirements							
Parameter	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 μ g/L in MA FW = 3.0 μ g/L in NH SW = 3.4 μ g/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						

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 $\mu g/L$ as possible, not to exceed $\leq 5.0~\mu g/L$.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Mike Trovato Tighe & Bond 120 Front Street, Suite 7 Worcester, MA 01608

RE: Wuxi - Biologics (W-5063-001A)

ESS Laboratory Work Order Number: 20D0315

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard Laboratory Director REVIEWED

By ESS Laboratory at 12:19 pm, Apr 14, 2020

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

SAMPLE RECEIPT

The following samples were received on April 10, 2020 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been performed and achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Limit Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

<u>Lab Number</u> 20D0315-01

Sample Name MW-1 Matrix Ground Water Analysis CALC



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

PROJECT NARRATIVE

No unusual observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Dependability

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint

6010C - ICP

6020A - ICP MS

7010 - Graphite Furnace

7196A - Hexavalent Chromium

7470A - Aqueous Mercury

7471B - Solid Mercury

8011 - EDB/DBCP/TCP

8015C - GRO/DRO

8081B - Pesticides

8082A - PCB

8100M - TPH

8151A - Herbicides

8260B - VOA

8270D - SVOA

8270D SIM - SVOA Low Level

9014 - Cyanide

9038 - Sulfate

9040C - Aqueous pH

9045D - Solid pH (Corrosivity)

9050A - Specific Conductance

9056A - Anions (IC)

9060A - TOC

9095B - Paint Filter

MADEP 04-1.1 - EPH

MADEP 18-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion

3020A - Aqueous Graphite Furnace / ICP MS Digestion

3050B - Solid ICP / Graphite Furnace / ICP MS Digestion

3060A - Solid Hexavalent Chromium Digestion

3510C - Separatory Funnel Extraction

3520C - Liquid / Liquid Extraction

3540C - Manual Soxhlet Extraction

3541 - Automated Soxhlet Extraction

3546 - Microwave Extraction

3580A - Waste Dilution

5030B - Aqueous Purge and Trap

5030C - Aqueous Purge and Trap

5035A - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics

Client Sample ID: MW-1 Date Sampled: 04/10/20 11:15

Percent Solids: N/A

ESS Laboratory Work Order: 20D0315 ESS Laboratory Sample ID: 20D0315-01

Sample Matrix: Ground Water

Units: ug/L

Extraction Method: [CALC]

Total Metals

 Analyte
 Results (MRL)
 MDL
 Method
 Limit
 DF
 Analyst
 Analyzed
 I/V
 F/V
 Batch

 Total Hardness
 62500 (412)
 CALC
 1
 KJK
 04/10/20 22:18
 1
 1
 I CALC

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486 ◆ Service



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
,			Total Meta	als						-
Batch DD01052 - 3005A/200.7										
Blank										
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
LCS										
Calcium	2.53	0.100	mg/L	2.500		101	85-115			
Magnesium	2.50	0.100	mg/L	2.500		100	85-115			
LCS Dup										
Calcium	2.51	0.100	mg/L	2.500		100	85-115	0.5	20	
Magnesium	2.51	0.100	mg/L	2.500		100	85-115	0.4	20	



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

Notes and Definitions

U	Analyte included in the analysis, but not detected
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
DDD	Polativa Paraant Difference

Relative Percent Difference MDL Method Detection Limit Method Reporting Limit MRL Limit of Detection LOD Limit of Quantitation LOQ **Detection Limit** DL Initial Volume I/V F/V Final Volume

Subcontracted analysis; see attached report

1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.

2 Range result excludes concentrations of target analytes eluting in that range. 3 Range result excludes the concentration of the C9-C10 aromatic range.

Avg Results reported as a mathematical average.

No Recovery NR

[CALC] Calculated Analyte

SUB Subcontracted analysis; see attached report

RLReporting Limit

EDL Estimated Detection Limit MF Membrane Filtration **MPN** Most Probably Number **TNTC** Too numerous to Count **CFU Colony Forming Units**

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486



The Microbiology Division of Thielsch Engineering, Inc.



CERTIFICATE OF ANALYSIS

Client Name: Tighe & Bond

Client Project ID: Wuxi - Biologics ESS Laboratory Work Order: 20D0315

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179 http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750 http://www.ct.gov/dph/lib/dph/environmental health/environmental laboratories/pdf/OutofStateCommercialLaboratories.pdf

> Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002 http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

> > Massachusetts Potable and Non Potable Water: M-RI002 http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424 http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313 http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006 http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752

http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

185 Frances Avenue, Cranston, RI 02910-2211

Tel: 401-461-7181

Fax: 401-461-4486

ESS Laboratory Sample and Cooler Receipt Checklist

Client:	Tighe & Bo	nd - KPB/TB				ject ID:	20D0315	
Shipped/Delivere	ed Via:	ESS Courier			Date Re Project Du Days for F		4/10/2020 4/14/2020 2 Day	<u> </u>
1. Air bill manifest present? No Air No.: NA 2. Were custody seals present? No 3. Is radiation count <100 CPM? Yes 4. Is a Cooler Present? Yes Temp: 5 Iced with: Ice 5. Was COC signed and dated by client? Yes					6. Does COC ma 7. Is COC comple 8. Were samples 9. Were labs inf 10. Were any ar	Yes Yes Yes Yes Yes / No / NA Yes /(No)		
11. Any Subcontr ESS Samp Ar		Yes /			12. Were VOAs a. Air bubbles in b. Does methan	aqueous VOAs		Yes / No Yes / No Yes / No /(NA
				4/10/2020			By:RL By:	·
	need to contact Pr need to contact the ted?		? Date:	Yes / No Yes / No	Time:		Ву:	
Number	ntainer Proper ID Container 3781 Yes	Air Bubbles Present N/A	Sufficient Volume Yes		er Type	Preservative		yanide and 608 cides)
2nd Review Were all contain Are barcode labe Are all Flashpoin Are all Hex Chro Are all QC sticke	ners scanned into els on correct conta t stickers attached/ me stickers attache	storage/lab? iners? container ID #		Initials	Yes/No/NA Yes/No/NA Yes/No/NA Yes/No/NA Yes/No/NA			
Completed By: Reviewed By: Delivered By:	Impa Jare	ia		Date & Time:	4 (18:55 0/20 1/10/20	(859 1859	_

ESS Laboratory				C	HAIN OF CUSTO	DY	ESS Lab	#		201	2003	(5				
Division of Thielsch Engineering, Inc.				Turn Time:		i)	Reportir	ng ,	/) .	1 ,	/	.7.				
185 Frances Avenue, Cranston RI 02910				Regulatory State:	<u> </u>		Limits									
Tel. (401) 461-7181 Fax (401) 461-4486				Is this project for any of the following?:				Electonic ☐ Limit Checker ☐ Excel Deliverables ☐ Other (Please Specifiy) → PDF								
				MA-MCP CT-RCP RGP Remediation				ies 📈	Other (F	Piease Sp∈	ecitiy) →	<u> アルア</u>	- -		$\overline{}$	
Tight & Band				Project # Project Name W-5063-0014 Wuxi 15:009105												
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1035 548-2049 HTTrove to 8			lumber	Email Ado	iress	11	2									
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ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sa	mple ID		1								
1	4/10	11:15	Grab	6W	M	₩ -)		2								
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Co	ntainer Type:		AG-Amber Glass	B-BOD Bottle (G-Glass (P-Poly) S-Sterile	V-Vial O-Other		ag a	9							
Prese	vation Code:	1/Non Preserve	2-HCI 3-H2\$O4	4-HNO3 5-NaOH 6-N	fethanol 7-Na2S2O3 8-ZnAce, N	IaOH 9-NH4CI 10-DI H2C	O 11-Other*									
						Number of C	ontainers:	1								
		Laborator	y Use Only		Sampled by :											
Cooler	Present:	2000.000	, 220 0,		Comments:	/ Please sp	ecify "Othe	r" pres	ervative	and conta	iners tvr	oes in th	is spac	——— :e		
	s Intact:		5.0		- Lat: Place	sc preser	VV	SAM	Pa	Ps,e	~ }	1 /s	1	V<1	, >	
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Re	linquished by:	(Signature, Da	ite & Time),	Received By:	(Signature, Date & Time)	Relinquished By:	: (Signature	Date 8	Time)		Received	d By: (Si	gnature	, Date {	k Time)	
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				· · · · · · · · · · · · · · · · · · ·	(Signature, Date & Time)	Relinquished By:	<u>-</u>									
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