PES Associates
Environmental Engineering Services

July 5, 2017

U.S. Environmental Protection Agency
Office of Eco System Protection
EPA/OEP Application Coordinator
5 Post Office Square-Suite 100 (OEP06-01)
Boston, MA 02109-3912

Attn: Remediation General Permit NOI Processing

Re: 2017 RGP NOI
Medway Block Co., Inc.
118-120 Main Street
Medway, Massachusetts
RTN 2-12740

Dear Sir / Madam:

On Behalf of *Medway Block Co., Inc.*, *PES Associates, Inc.* is seeking coverage under the U.S. Environmental Protection Agency's newly promulgated 2017 National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP) for wastewater discharge from the *Medway Block* Site located at 118-120 Main Street in Medway, Massachusetts (the "Site"). Discharge of remedial wastewater at the Site was formerly conducted under NPDES permit exclusion letter #MA 021-05 & 2005 & 2010 NPDES RGP #MAG910224.

In accordance with Part 1 of the NOI instructions, general facility/site information in included in Section A of NOI form, Receiving Water information in Part B, Source Water information in Part C, Discharge information in Part D, Treatment System information in Part E, Chemical & Additive Information in Part F, Endangered Species Act information in Part G with letter from USFWS stating no affected habitats and National Historic Act Information Act Part H with map showing no historic Sites in proximity to to the treated water or municipal stormwater system path or discharge. Figure 1 is shows a cross section and plan of the remediation system with 4" diameter PVC discharge pipe connecting to the Site underground 10" diameter storm water main. A *Mapleleaf* System Component diagram and also *PES* Flow Diagram are included as Figures 2. Figure 3 depicts the path of the treated water discharge from the municipal catchbasin at the entrance to *Medway Block Co*. at 120 Main Street to Cottage and Evergreen St. and terminating at Chicken Brook. A Locus Map illustrating the location of the Site relative to regional features is included as Figure 4. A Massachusetts Department of Environmental Protection (MassDEP) Site Scoring Map is also attached.

The potential discharge has been determined to fall within the Activity Category II, Non-Petroleum-Related Site Remediation, Contamination Type D, Non-Halogenated Semi-Volatile Organic Compounds, under the RGP.

Treatment system information can be summarized as follows: groundwater from up to two (2) recovery wells (only one is currently in use) is pumped through into an oil water separator where the semi-volatile organic compounds are skimmed utilizing a PVC media and subsequently collected ina 55-gallon steel drum. The contaminated water phase remaining is treated via passage through a sand filter and granulated carbon filters and then discharged into an underground 4" PVC drain line that connects to the concrete, 10" diameter undergound, storm water drain line which subsequently drains into the municipal storm water drain manhole at 120 main street. From this point the flow combined with stormwater flows southwest on Main Street to Cottage Street, South onto Cottage then west onto Evergreen Street where it"s final destimation is Chicken Brook.

If you have any question or require additional information, please contact the undersigned at (781) 407-7777.

Sincerely,
PES Associates, Inc.

Marnin Feldman
Senior Project Manager

Enclosures

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

A. General site information:

<table>
<tr><td rowspan="4">1. Name of site:
Medway Block Company, Inc.</td><td colspan="3">Site address: 118-120 Main Street
Street:</td></tr>
<tr><td>City: Medway</td><td>State: MA</td><td>Zip: 02053</td></tr>
<tr><td rowspan="3">2. Site owner
120 Main Street Trust,
c/o Medway Block Co., Inc.

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: Frank Sheehan</td></tr>
<tr><td colspan="2">Telephone: 508-533-6701</td><td>Email: fsheehan@medwayblock.com</td></tr>
<tr><td colspan="3">Mailing address: 120 Main Street
Street:</td></tr>
<tr><td colspan="2">City: Medway</td><td>State: MA</td><td>Zip: 02053</td></tr>
<tr><td rowspan="4">3. Site operator, if different than owner
PES Associates, Inc</td><td colspan="3">Contact Person: Stephan White</td></tr>
<tr><td colspan="2">Telephone: 781-407-7777</td><td>Email: steve@pesassociatesinc.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 62 Derby Street ,Suite 10</td></tr>
<tr><td colspan="2">City: Hingham</td><td>State: MA</td><td>Zip: 02043</td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
MAG-910224, MAR053145

NPDES permit is (check all that apply: ■ RGP ☐ DGP ☐ CGP
■ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:</td><td colspan="3">5. Other regulatory program(s) that apply to the site (check all that apply):
■ MA Chapter 21e; list RTN(s):
2-12740
☐ NH Groundwater Management Permit or Groundwater Release Detection Permit:
☐ CERCLA
☐ UIC Program
☐ POTW Pretreatment
☐ CWA Section 404</td></tr>
</table>

B. Receiving water information:

1. Name of receiving water(s):	Waterbody identification of receiving water(s):	Classification of receiving water(s):
Chicken Brook	MA72-34	B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP.

4. Indicate the seven day-ten-year low flow (7Q10) of the receiving water determined in accordance with the instructions in Appendix V for sites located in Massachusetts and Appendix VI for sites located in New Hampshire.	0.122
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	6.47

6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): ■ Yes ☐ No
If yes, indicate date confirmation received: June 8, 2017

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

C. Source water information:

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

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

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

D. Discharge information

1.The discharge(s) is a(n) (check any that apply): ■ Existing discharge ☐ New discharge ☐ New source	
Outfall(s): 001	Outfall location(s): (Latitude, Longitude) Latitude 42.15 Longitude 71.42 west
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: Treated water discharges to Medway municipal storm water system at 120 Main Street which terminates at Chicken Brook from Evergreen Street ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: See attached email from Medway DPS, Mr.D. DAmico, dated 6/27/17 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): Start August 2002, End: Unknown Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia	✓		1	SM19-22	300	<300		Report mg/L	---
Chloride		✓	1	EPA 300.1	50000	<50000		Report µg/l	---
Total Residual Chlorine		✓	1	SM21-22	20	28		0.2 mg/L	93
Total Suspended Solids		✓	1	SM21-22	5000	<5000		30 mg/L	---
Antimony	✓		1	EPA 200.8	1.0	<1.0		206 µg/L	
Arsenic	✓		1	EPA 200.8	1.0	<1.0		104 µg/L	
Cadmium	✓		1	EPA 200.8	0.20	<0.20		10.2 µg/L	
Chromium III	✓		1	EPA 200.8	10.0	<10		323 µg/L	
Chromium VI	✓		1	SM21-22	4.0	<4.0		323 µg/L	
Copper		✓	1	EPA 200.8	1.0	11.0		242 µg/L	
Iron		✓	1	EPA 200.7	50	4300		5,000 µg/L	
Lead	✓		1	EPA 200.8	0.50	2.3		160 µg/L	
Mercury	✓		1	EPA 245.1	0.1	<0.1		0.739 µg/L	
Nickel		✓	1	EPA 200.8	5.0	<5.0		1,450 µg/L	
Selenium	✓		1	EPA 200.8	5.0	<5.0		235.8 µg/L	
Silver	✓		1	EPA 200.8	0.20	<0.20		35.1 µg/L	
Zinc	✓		1	EPA 200.8	20	<20		420 µg/L	
Cyanide	✓		1	EPA 335.4	0.5	<0.5		178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✓		1	EPA 624	0.68	0.65		100 µg/L	---
Benzene	✓		1	EPA 624	0.12	<0.12		5.0 µg/L	---
1,4 Dioxane	✓		1	EPA 624	26	<26		200 µg/L	---
Acetone	✓		1	EPA 624	4.9	<4.9		7.97 mg/L	---
Phenol	✓		1	EPA 625	10	<10		1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	EPA 624	0.25	<0.25		4.4 µg/L	
1,2 Dichlorobenzene	✔		1	EPA 624	0.17	<0.17		600 µg/L	---
1,3 Dichlorobenzene	✔		1	EPA 624	0.17	<0.17		320 µg/L	---
1,4 Dichlorobenzene	✔		1	EPA 624	0.17	<0.17		5.0 µg/L	---
Total dichlorobenzene	✔		1	EPA 624	0.51	0.51		763 µg/L in NH	---
1,1 Dichloroethane	✔		1	EPA 624	0.16	<0.16		70 µg/L	---
1,2 Dichloroethane	✔		1	EPA 624	0.19	<0.19		5.0 µg/L	---
1,1 Dichloroethylene	✔		1	EPA 624	0.16	<0.16		3.2 µg/L	---
Ethylene Dibromide	✔		1	EPA 504.2	0.21	<0.21		0.05 µg/L	---
Methylene Chloride	✔		1	EPA 624	3.2	<3.2		4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	EPA 624	0.13	<0.13		200 µg/L	---
1,1,2 Trichloroethane	✔		1	EPA 624	0.24	<0.24		5.0 µg/L	---
Trichloroethylene	✔		1	EPA 624	0.20	<0.20		5.0 µg/L	---
Tetrachloroethylene	✔		1	EPA 624	0.27	<0.27		5.0 µg/L	
cis-1,2 Dichloroethylene	✔		1	EPA 624	0.15	<0.15		70 µg/L	---
Vinyl Chloride	✔		1	EPA 624	0.13	<0.13		2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates		✔	1	EPA 625	50.1	<50.3		190 µg/L	
Diethylhexyl phthalate	✔		1	SW846	0.1	0.3		101 µg/L	
Total Group I PAHs	✔		1	SW846	1.0	<1.0		1.0 µg/L	---
Benzo(a)anthracene	✔		1	SW846	0.05	<0.05		As Total PAHs	
Benzo(a)pyrene	✔		1	SW846	0.1	<0.1			
Benzo(b)fluoranthene	✔		1	SW846	0.05	<0.05			
Benzo(k)fluoranthene	✔		1	SW846	0.2	<0.2			
Chrysene	✔		1	SW846	0.2	<0.2			
Dibenzo(a,h)anthracene	✔		1	SW846	0.2	<0.2			
Indeno(1,2,3-cd)pyrene	✔		1	SW846	0.2	<0.2			

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
Total Group II PAHs		✓	1	EPA 625	50.0	<50.0		100 µg/L	---
Naphthalene		✓	1	EPA 625	5.0	<5.0		20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✓							0.000064 µg/L	---
Pentachlorophenol	✓			SW846	0.34	<0.34		1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✓	1	EPA	1400	37000		5.0 mg/L	---
Ethanol	✓							Report mg/L	---
Methyl-tert-Butyl Ether	✓		1	EPA 624	0.090	<0.090		70 µg/L	
tert-Butyl Alcohol	✓		1	EPA 624	2.2	<2.2		120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✓		1	EPA 624	0.11	<0.11		90 µg/L in MA 140 µg/L in NH	---
Other (i.e., pH, temperature, hardness, salinity, LC_{50}, additional pollutants present); if so, specify:									
pH Influent		✓	1	SM21-22		6.7			
Hardness Influent		✓	1	SM21-22	2000	270000			
Temperaure Influent		✓	1	170.1		16.7 degrees			
ph Receiving		✓	1	SM21-22		7.6			
Hardness Receiving		✓	1	SM-21-22		64000			
Temperature Receiving		✓	1	170.1		25.6 degrees			

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.

Operation of a groundwater extraction pump plus treatment system to remove hydraulic oil NAPL. Subsurface trench with two recovery wells are used to extract oil from groundwater, passed through oil water separator, sand filter and carbon filters

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: Metering pump to add biocide

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

☐ Chlorination ■ De-chlorination

3. Provide the **design flow capacity** in gallons per minute (gpm) of the most limiting component. Indicate the most limiting component: 10 gpm, sand filter Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	10
Provide the average effluent flow in gpm.	1.15
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

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

2. Provide the following information for each chemical/additive, using attachments, if necessary:
Please see attached Solvay MSDS, Manufacturer Rhodia Product Data Sheet, Redux Technology Product Data Sheet and PES Information sheet for Tolcide PS20A>
a. Product name, chemical formula, and manufacturer of the chemical/additive;
b. Purpose or use of the chemical/additive or remedial agent;
c. Material Safety Data Sheet (MSDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;
d. The frequency (hourly, daily, etc.), duration (hours, days), quantity (maximum and average), and method of application for the chemical/additive;
e. Any material compatibility risks for storage and/or use including the control measures used to minimize such risks; and
f. If available, the vendor's reported aquatic toxicity (NOAEL and/or LC50 in percent for aquatic organism(s)).

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

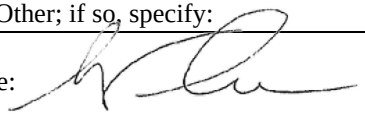
Describe any supplemental information being provided with the NOI. Include attachments if required or otherwise necessary.

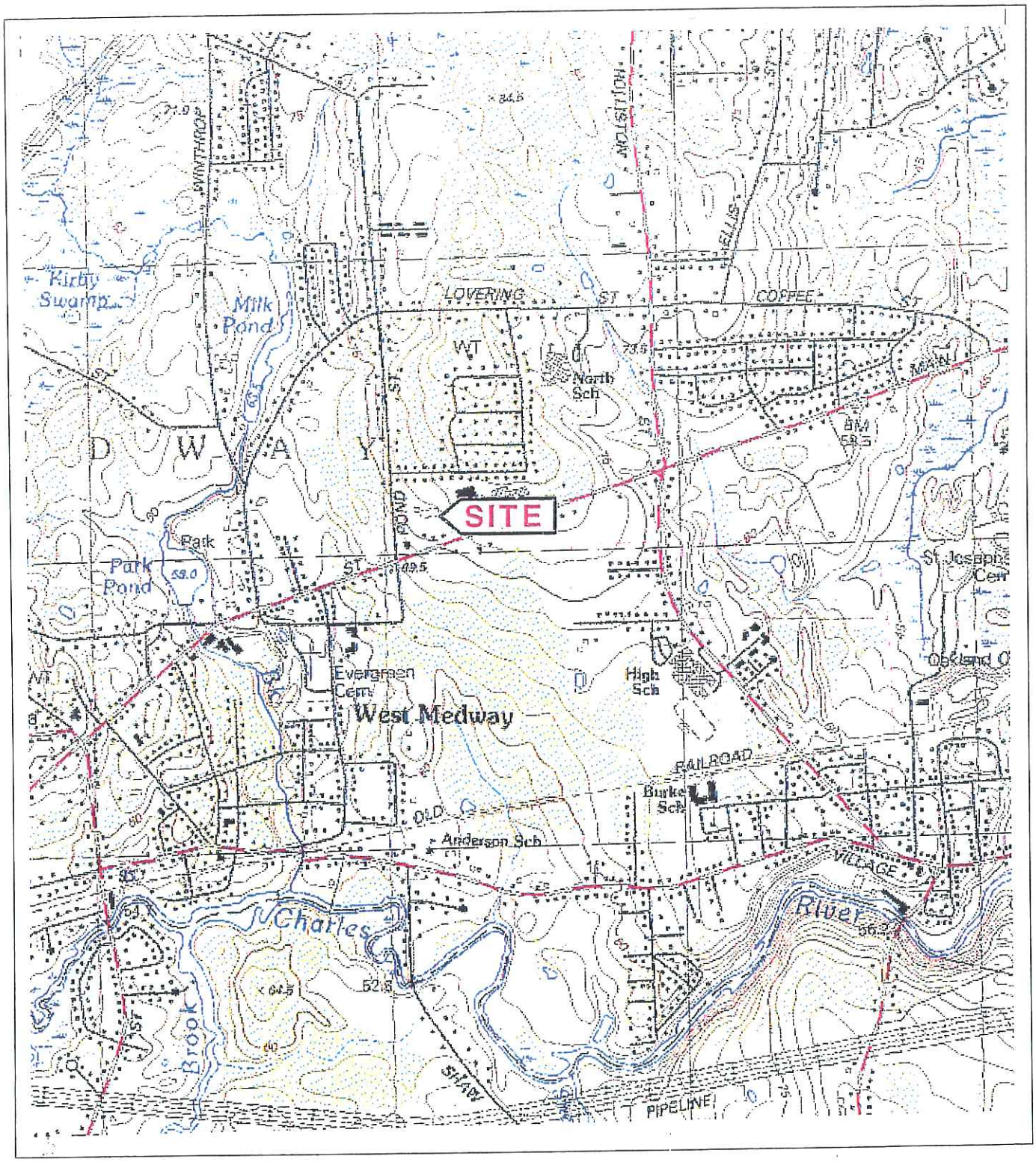
Has the operator attached data, including any laboratory case narrative and chain of custody used to support the application? (check one): ■ Yes ☐ No

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

J. Certification requirement

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

BMPP certification statement: A Best Management Practices Plan meeting the requirements of this general permit has been developed and implemented. Please see attached copy.	
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ☐ No ■
Notification provided to the municipality in which the discharge is located, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐
Notification provided to the owner of a private or municipal storm sewer system, if such system is used for site discharges, including a copy of this NOI, if requested.	Check one: Yes ■ No ☐ NA ☐
Permission obtained from the owner of a private or municipal storm sewer system, if such system is used for site discharges. If yes, attach additional conditions. If no, attach explanation and timeframe for obtaining permission.	Check one: Yes ■ No ☐ NA ☐
Notification provided to the owner/operator of the area associated with activities covered by an additional discharge permit(s). Additional discharge permit is (check one): ☐ RGP ☐ DGP ☐ CGP ☐ MSGP ☐ Individual NPDES permit ☐ Other; if so, specify:	Check one: Yes ☐ No ☐ NA ■
Signature: 	Date: July 5, 2017
Print Name and Title: Stephan White, President	



Source: U.S. Geological Survey
7.5 Minute Quadrangle
Scale 1 :25,000

PARAGON
1400 Providence Highway
Norwood, Massachusetts 02062
Nationwide: 888-660-9975
Fax 781-278-0910
www.paragonenv.com

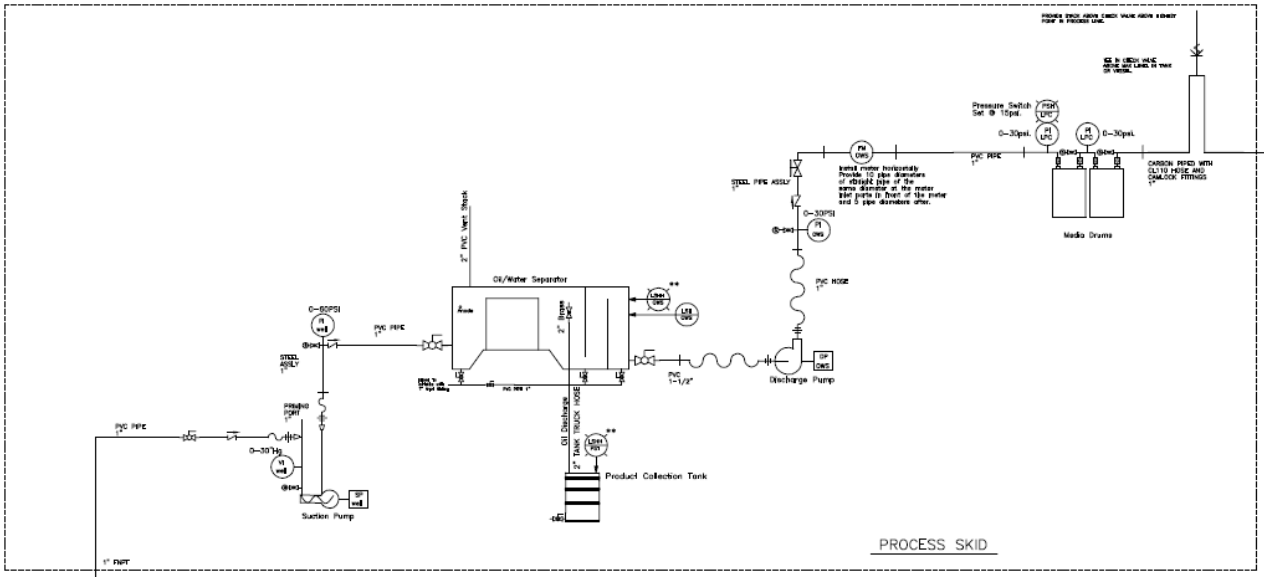
USGS Site Locus Map

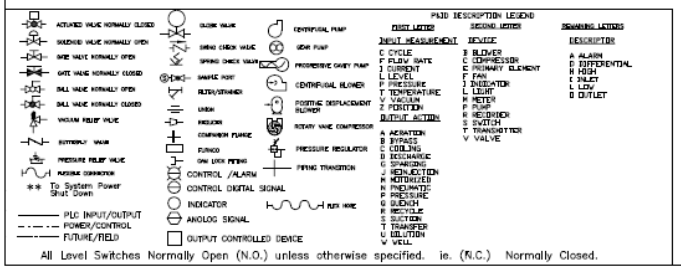
120 Main Street
Medway, Massachusetts

Figure

1

Project No. 99-2896





Note: Details on various equipment is found in the component section of your manual. The last section of the description indicates the relevent module in the manual. For example TSH-LRP is the high temperature switch in the liquid ring pump module of the manual.

CONTROL PANEL

CONTROL PANEL MUST BE A MINIMUM OF 18" FROM ANY HAZARDOUS PROCESS EQUIPMENT AND A MINIMUM OF 18" OFF THE GROUND.

WIRING TO BE CLASS 1 DIV 2 AS PER THE NEC

IS INPUT WIRING SHOULD BE WIRED TO A COMMON IS BOX ACCORDING TO NEC

PIPING DETAILS
MATERIALS OF VALVES AND FITTINGS TO BE THE SAME AS THE DESCRIPTION AT THE LINE.
IF THERE IS A TRANSITION FROM PVC TO STEEL THEN THE VALVE SHOULD BE A BRASS VALVE.
THERE ARE NO SPECIAL PIPING REQUIREMENTS OTHER THAN WHAT IS EXPLAINED ON THE DIAGRAM BELOW
WHEN PVC HOSE IS SPECIFIED ALWAYS USE CL110 VACUUM HOSE.
NOTE: PVC PIPE MAY BE SUSTITUTED WITH EQUAL SIZED PVC HOSE WHERE A FLEXIBLE CONNECTION IS PREFFERED

C	JULY 4,2002	JK	AS BUILT
B	JUNE 13,2002	JK	FOR PRODUCTION
A	MAY 27,2002	JK	FOR APPROVAL
MARK	DATE	BY	REVISION

MAPLE LEAF ENVIRONMENTAL EQUIPMENT LTD.
TITLE: Process Flow & Instrumentation
DRAWN BY: JK
DATE: MAY27,2002
APPROVED:
CUSTOMER: Paragon
Paragon Environmental
ENGL. NO: 7976 -01

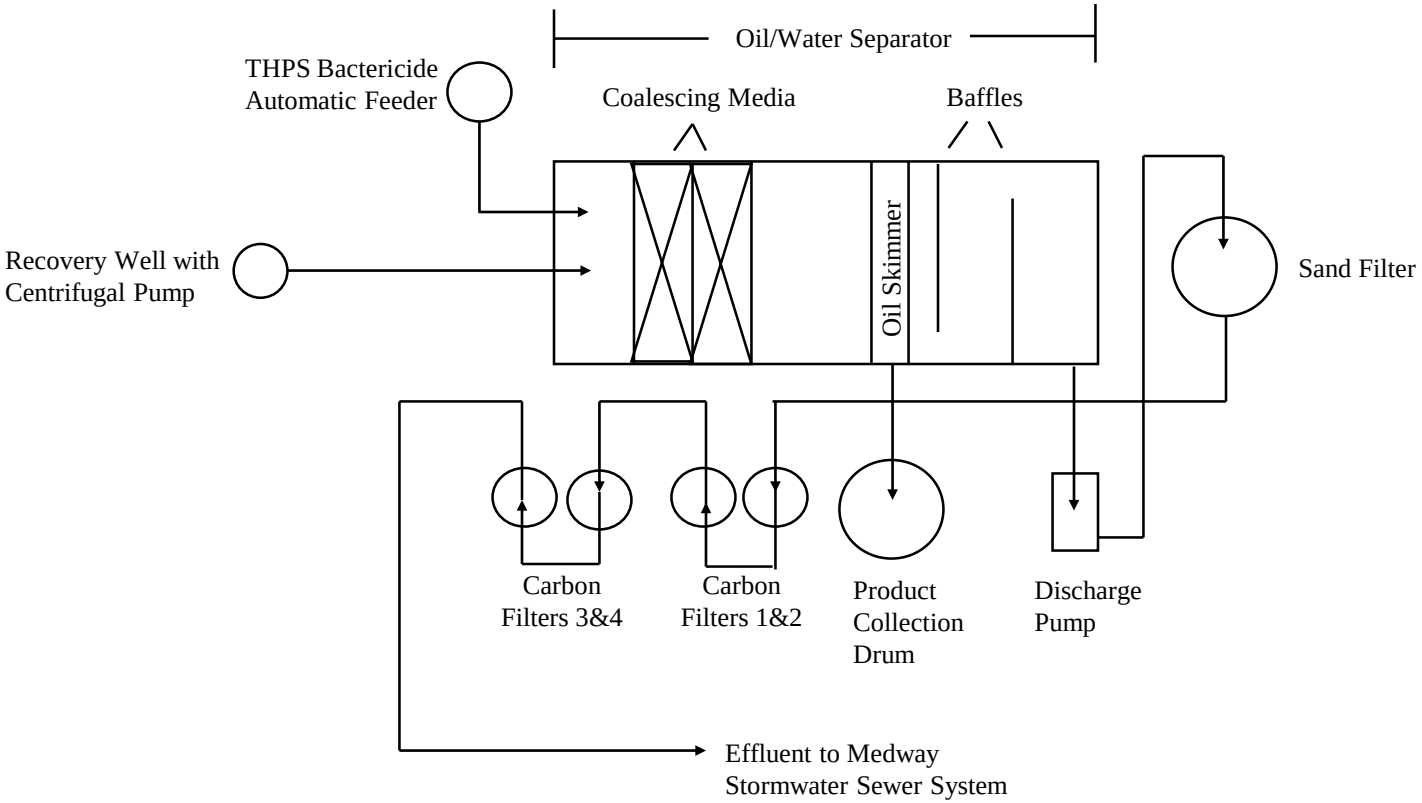
PES ASSOCIATES
858 Washington St. Suite 50
Dedham, MA 02026
Tel: 781-407-7777
Fax: 781-407-0007

Project No. 5558

Process Flow And Instrumentation

Source: Mapleleaf Environmental Equipment Co.

Figure 2a



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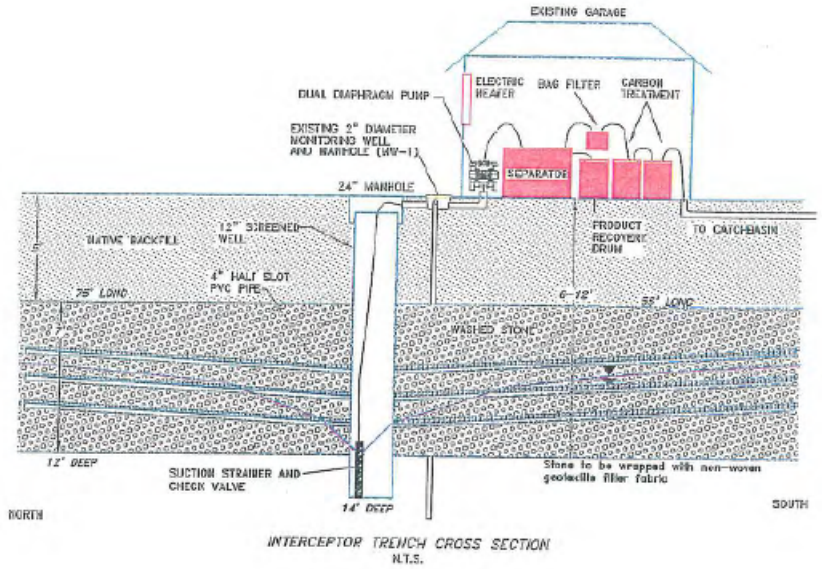
858 Washington St. Suite 50
Dedham, MA 02026
Tel: 781-407-7777
Fax: 781-407-0007

Project No. 05-5558

Process Flow Diagram

Medway Block Co.
120 Main Street
Medway, Massachusetts

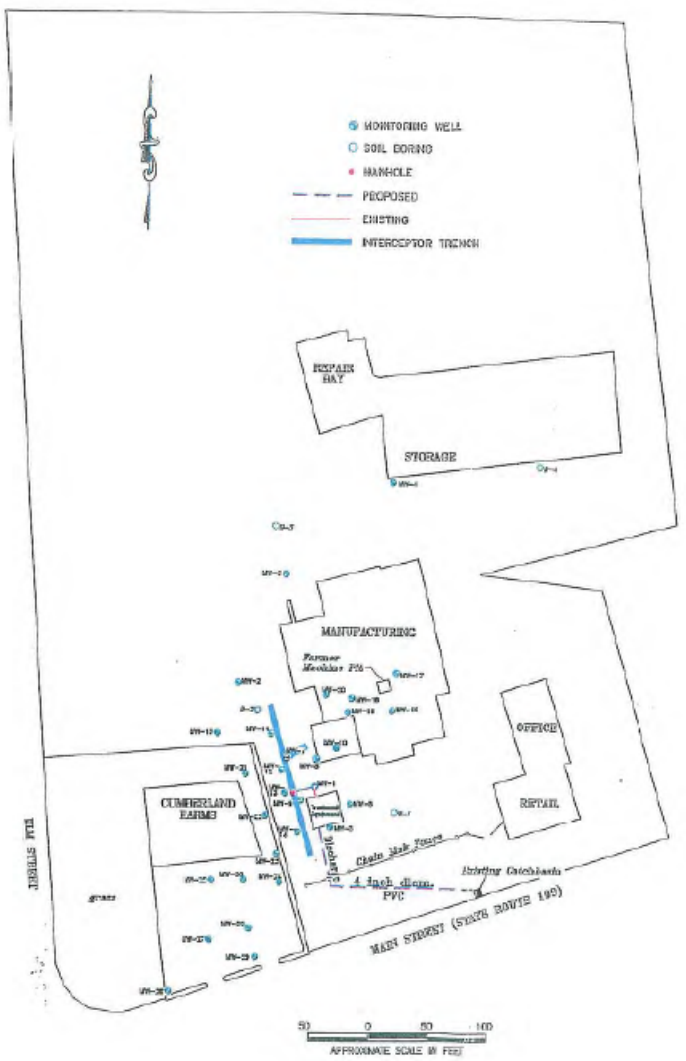
Figure
2b



INTERCEPTOR TRENCH CROSS SECTION
N.T.S.

Notes:

1. Monitoring Wells MW-7, MW-8 and MW-11 through MW-14 will be destroyed during trench installation.
2. Discharge line shall be 4" diameter schedule 40 PVC installed with a minimum of 1.0 feet of soil cover.
3. Discharge line shall be installed with a minimum of 3% slope to storm drain.
4. Connection of discharge line to storm drain shall be in accordance with Town of Medway Sewer Department regulations and requirements.
5. Excess soil will be field screened on site by Paragon who will direct its placement into one of two stockpiles, contaminated or uncontaminated. Any uncontaminated soil shall be spread on-site at Paragon's direction within four weeks of trench installation.
6. Contaminated soil shall be transported by contractor to a Massachusetts licensed asphalt recycling facility under a Bill-of-Lading to be prepared by Paragon.
7. Discharge line shall be finished in the existing garage with a sweep penetrating the floor, concreted in place flush with floor elevation.
8. Interceptor trench shall be backfilled with 1/4- to 1/2-inch washed stone. Half-slot PVC pipe shall be layed in stone as shown, at invert depths of 7.0, 9.0 and 11.0 feet below surface grade. In order to prevent loss of permeability by the migration of silt, trench shall be lined with non-woven geotextile fabric documented to be completely permeable to water and hydraulic oil. Top of washed stone shall be covered by geotextile fabric as well.
9. Half-slot PVC (4" diameter, 0.020-inch slot size) shall be layed at 3% slope toward manhole.
10. Manhole shall be constructed of 12-inch diameter PVC well screen with 0.020 inch slots and bottom cap.
11. Half-slot PVC pipe shall be placed such that it butts against manhole/well screen.
12. Manhole shall be entirely slotted with the exception of a 2-4 foot solid section at top.
13. Electric heater and water treatment and oil recovery equipment will be provided and installed by Owner into existing garage.



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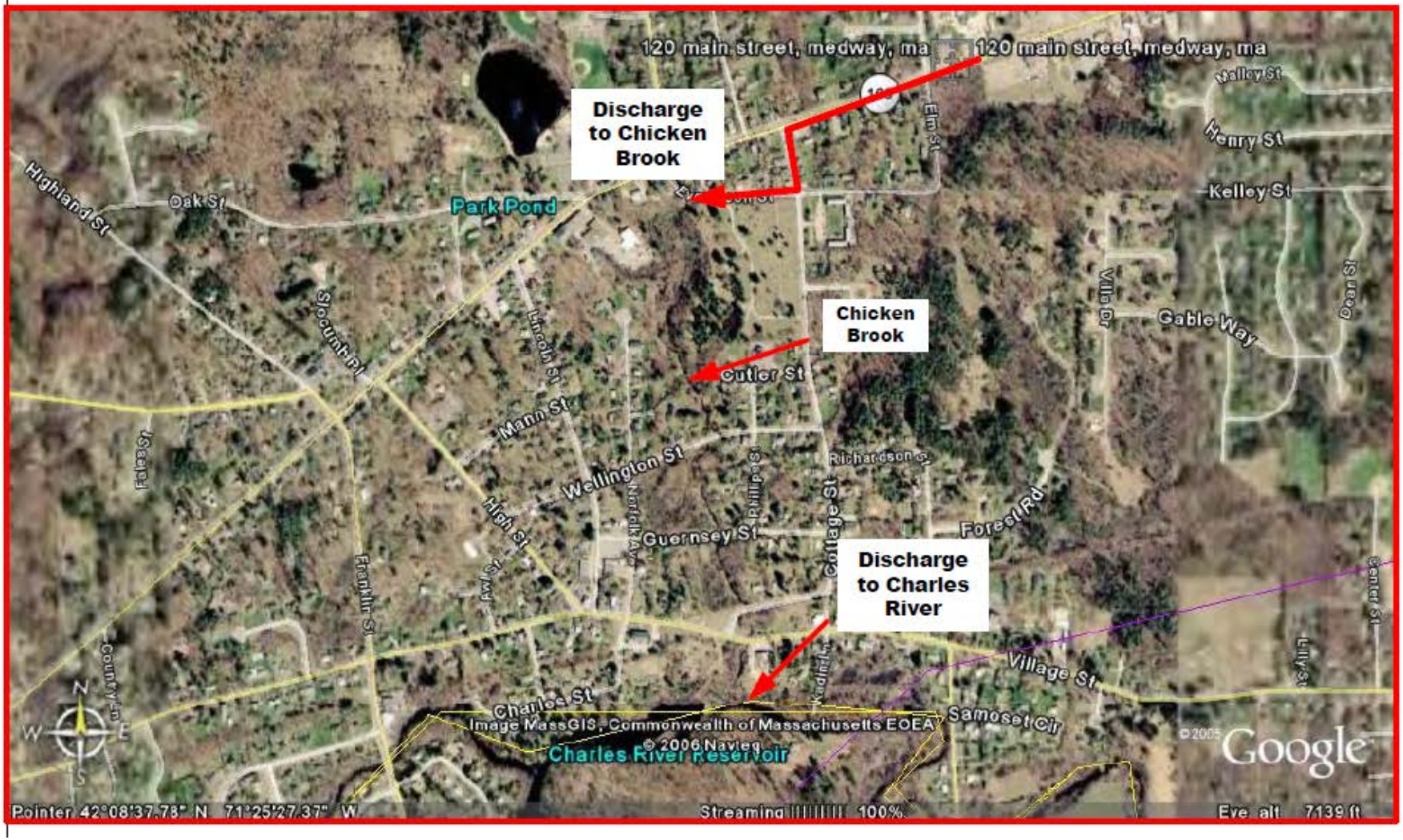
Dedham, MA 02026
Tel: 781-407-7777
Fax: 781-407-0007

Project No. 5558

Interceptor Trench System

Figure 3



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Fax: 781-407-0007

Project No. 5558

Discharge Pathway

Source: Cooperstown Environmental

Figure 3

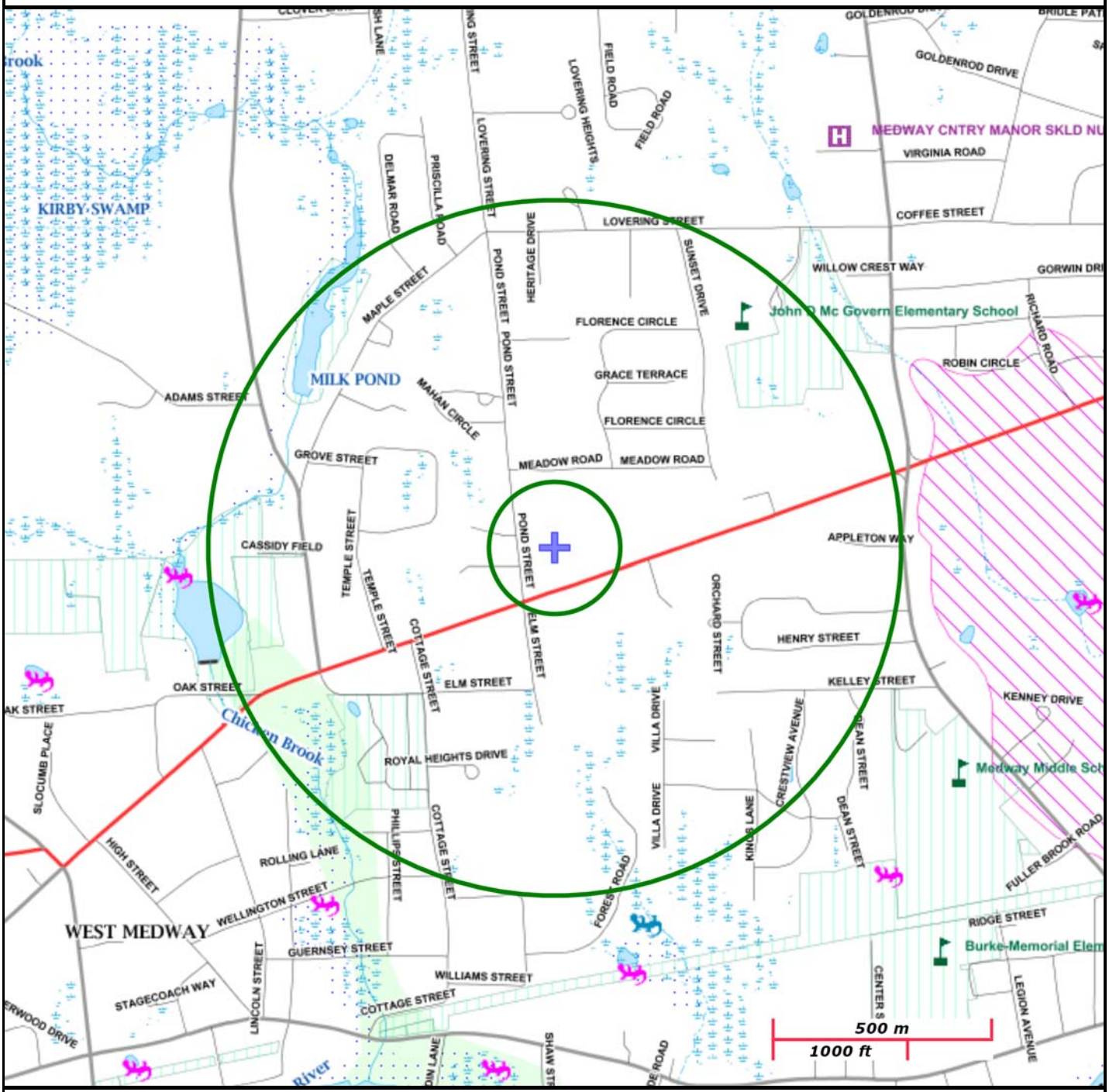
MassDEP - Bureau of Waste Site Cleanup

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

Site Information:
MEDWAY BLOCK COMPANY
120 MAIN ST MEDWAY, MA
2-000012740
NAD83 UTM Meters:
4669312mN , 300176mE (Zone: 19)
April 3, 2017

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

MassDEP
Commonwealth of Massachusetts
Department of Environmental Protection



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

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marnin feldman

mayor

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From

Mayor, Anna (DEP)
anna.mayor@state.ma.us

Date

All

This week

Last week

This month

Select range

From

Tue 7/4/2017

To

Tue 7/4/2017

New | Reply | Delete Archive Junk | Sweep Move to Categories

RE: Renewal 2017 RGP Permit for 118-120 Main St., Sharon MA

MA Mayor, Anna (DEP) <anna.mayor@state.ma.us> Reply |
Mon 6/5, 9:41 AM
You

You replied on 6/6/2017 11:28 AM.

Hello Marnin. Sorry I didn't get back to you Friday. I can confirm that Chicken Brook is a Class B surface water. Its waterbody ID is MA72-34 and it is not under a TMDL (although the upper Charles is under a TMDL). Hope that answers your questions.
Anna

From: marnin feldman [mailto:mfeld@hotmail.com]
Sent: Friday, June 02, 2017 9:32 AM
To: Mayor, Anna (DEP)
Subject: Re: Renewal 2017 RGP Permit for 118-120 Main St., Sharon MA

Ms. Mayor:
Once again gathering info for preparation of NOI for above subject.
See target on attached GIS map. We are discharging to municipal storm sewer at 120 Main Street which subsequently discharges to Chicken Brook via Evergreen Street. Chicken Brook in 2010 was classified as Class B water.
Could you please confirm that it is still Class B. Also if there is TMDL
Also on page 14 of NOI they ask for "Waterbody identification of Receiving water" Can u please provide same for Chicken Brook
Pls also see routing diagram for municipal sewer to Chicken Brook.
Thx in advance for your help again.

Marnin Feldman

Marnin Feldman
Senior Project Manager
PES Associates
62 Derby Street
Suite 10
Hingham, MA 02043
Phone: 781-407-7777
Fax : 781-407-0007
Cell-617-834-4108
Home Office -978-774-1939

From: Mayor, Anna (DEP) <Anna.Mayor@MassMail.State.MA.US>
Sent: Tuesday, November 15, 2016 10:22 AM
To: marnin feldman (mfeld@hotmail.com)
Cc: Groff, Kimberly (DEP)
Subject: FW: Renewal 2015 RGP Permit for 700-800 Main St., Sharon MA

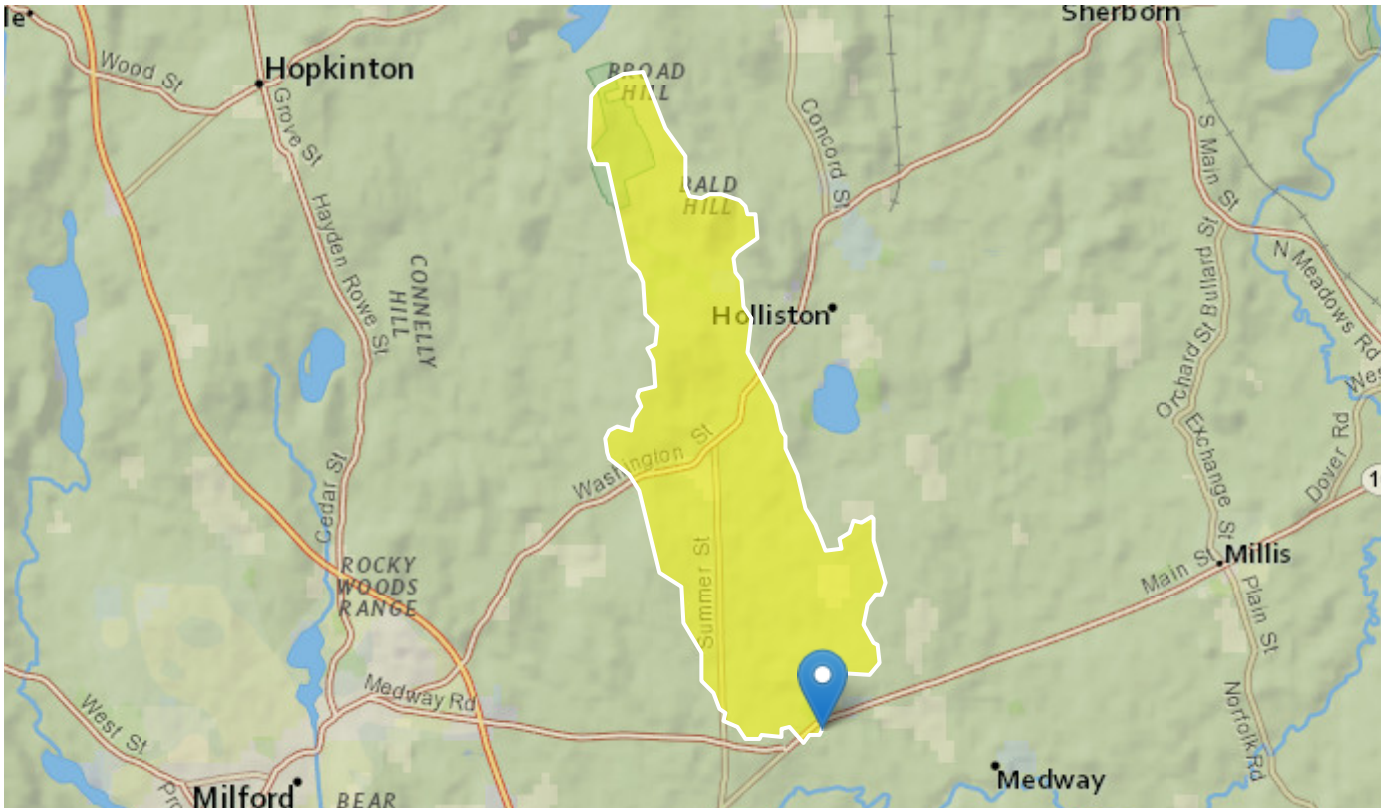
Hi, Marnin. I received the answer below from a wetlands staff person (Meghan, see email below) concerning your question about waterbody identification. Billings Brook is not an integrated list segment, so I have obtained our waterbody code number for you for that Brook (obtained from the Massachusetts Stream Classification Program, Part I: Inventory of Rivers and Streams). I have gathered the integrated list identification number for the other segments in case you need those as well. Let me know if you need anything else.
Anna

Billings Brook SARIS number is 35675
Gavins Pond Integrated List Segment ID is MA62077
Rumford River Integrated List Segment ID is MA62-39

Mayor 1 of 6

StreamStats Report for Marnin Feldman

Region ID:
MA
Workspace ID:
MA20170606094103781000
Clicked Point (Latitude, Longitude):
42.14632, -71.42611
Time:
2017-06-06 09:42:30 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	6.74	square miles
DRFTPERSTR	Area of stratified drift per unit of stream length	0.0474	square mile per mile
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.4	percent
BSLDEM10M	Mean basin slope computed from 10 m DEM	4.509	percent

Parameter Code	Parameter Description	Value	Unit
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	12.41	percent
FOREST	Percentage of area covered by forest	57.63	percent
ACRSDFT	Area underlain by stratified drift	0.84	
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	204720.9	
CENTROIDY	Basin centroid vertical (y) location in state plane units	881288.2	
CRSDFT	Percentage of area of coarse-grained stratified drift	12.41	percent
ELEV	Mean Basin Elevation	269	feet
LAKEAREA	Percentage of Lakes and Ponds	0.4	percent
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	12.67	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	32.5	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9.89	percent
MAXTEMPC	Mean annual maximum air temperature over basin area, in degrees Centigrade	15.5	
OUTLETX	Basin outlet horizontal (x) location in state plane coordinates	206105	
OUTLETY	Basin outlet vertical (y) location in state plane coordinates	877325	
PRECPRIS00	asin average mean annual precipitation for 1971 to 2000 from PRISM	48.2	inches
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	17.7	miles
WETLAND	Percentage of Wetlands	14.16	percent

Flow-Duration Statistics Parameters [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.74	square miles	1.61	149

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRFTPERSTR	Stratified Drift per Stream Length	0.0474	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1
BSLDEM250	Mean Basin Slope from 250K DEM	2.4	percent	0.32	24.6

Flow-Duration Statistics Flow Report [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	SE	SEp
50 Percent Duration	6.69	ft^3/s	3.54	12.6	17.6	17.6
60 Percent Duration	4.47	ft^3/s	2.3	8.65	19.8	19.8
70 Percent Duration	2.36	ft^3/s	0.97	5.69	23.5	23.5
75 Percent Duration	1.75	ft^3/s	0.722	4.18	25.8	25.8
80 Percent Duration	1.2	ft^3/s	0.485	2.94	28.4	28.4
85 Percent Duration	0.859	ft^3/s	0.322	2.25	31.9	31.9
90 Percent Duration	0.554	ft^3/s	0.2	1.5	36.6	36.6
95 Percent Duration	0.319	ft^3/s	0.105	0.938	45.6	45.6
98 Percent Duration	0.2	ft^3/s	0.0573	0.66	60.3	60.3
99 Percent Duration	0.146	ft^3/s	0.0393	0.51	65.1	65.1

Flow-Duration Statistics Citations

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

Low-Flow Statistics Parameters [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.74	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.4	percent	0.32	24.6

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRFTPERSTR	Stratified Drift per Stream Length	0.0474	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Flow Report [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	SE	SEp
7 Day 2 Year Low Flow	0.367	ft^3/s	0.116	1.12	49.5	49.5
7 Day 10 Year Low Flow	0.122	ft^3/s	0.0299	0.465	70.8	70.8

Low-Flow Statistics Citations

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

August Flow-Duration Statistics Parameters [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.74	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.4	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	0.0474	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

August Flow-Duration Statistics Flow Report [100 Percent (6.73 square miles) Statewide Low Flow WRIR00 4135]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PIl	PIu	SE	SEp
August 50 Percent Duration	0.919	ft^3/s	0.345	2.4	33.2	33.2

August Flow-Duration Statistics Citations

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

Bankfull Statistics Parameters [100 Percent (6.73 square miles) Bankfull Statewide SIR2013 5155]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.74	square miles	0.6	329
BSLDEM10M	Mean Basin Slope from 10m DEM	4.509	percent	2.2	23.9

Bankfull Statistics Flow Report [100 Percent (6.73 square miles) Bankfull Statewide SIR2013 5155]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, SEp: Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	SEp
Bankfull Width	29.4	ft	21.3
Bankfull Depth	1.55	ft	19.8
Bankfull Area	45.2	ft^2	29
Bankfull Streamflow	110	ft^3/s	55

Bankfull Statistics Citations

Bent, G.C., and Waite, A.M.,2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013–5155, 62 p., (http://pubs.usgs.gov/sir/2013/5155/)

Probability Statistics Parameters [100 Percent (6.73 square miles) Perennial Flow Probability]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	6.74	square miles	0.01	1.99
PCTSNDGRV	Percent Underlain By Sand And Gravel	12.41	percent	0	100
FOREST	Percent Forest	57.63	percent	0	100
MAREGION	Massachusetts Region	0	dimensionless	0	1

Probability Statistics Disclaimers [100 Percent (6.73 square miles) Perennial Flow Probability]

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

Probability Statistics Flow Report [100 Percent (6.73 square miles) Perennial Flow Probability]

Statistic	Value	Unit
Probability Stream Flowing Perennially	0.97	dim

Probability Statistics Citations

Bent, G.C., and Steeves, P.A.,2006, A revised logistic regression equation and an automated procedure for mapping the probability of a stream flowing perennially in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2006–5031, 107 p. (http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf)

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marnin feldman

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RE: Use of streamstats to find7 day 10 year low flow for Medway, MA

VC Vakalopoulos, Catherine (DEP) <Catherine.Vakalopoulos@MassMail.State.M

Reply |

Today, 11:54 AM
You

Perfect, our numbers match. The dilution for this discharge is 6.47. You are all set from me. Just keep this email for your records and answer this in section B of the NOI form:
6. Has the operator received confirmation from the appropriate State for the 7Q10and dilution factor indicated? (check one): □ Yes □ No
If yes, indicate date confirmation received:

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: marnin feldman [mailto:mfeld@hotmail.com]
Sent: Thursday, June 08, 2017 7:14 AM
To: Vakalopoulos, Catherine (DEP)
Subject: Fw: Use of streamstats to find7 day 10 year low flow for Medway, MA

Pls see attached email I received from Streamstats Freshdesk, version 4 for discharge point of municipal sewer I received today.
Coordinates are correct.
I had sent you version three because version 4 was not working at the end of last week.
for 2010 RGP Permit the 7D10Y lowflow stat we used was 0.12 CFS.
With Streamstrat help desk data, 7D10Y is 0.122
If I recalculate dilution factor based on 0.122, results are as follows:

$$\frac{0.122 \times 3600 \times 7.48 \times 2400 + 0.0144}{0.0144} = \frac{0.0932}{0.0144} = \mathbf{6.47}$$

Marnin Feldman

Marnin Feldman
Senior Project Manager
PES Associates
62 Derby Street
Suite 10
Hingham, MA 02043
Phone: 781-407-7777
Fax : 781-407-0007
Cell-617-834-4108
Home Office -978-774-1939

From: Kernell Ries <support@streamstats.freshdesk.com>
Sent: Tuesday, June 6, 2017 10:37 AM
To: mfeldman@pesassociatesinc.com
Cc: mfeld@hotmail.com
Subject: Re: Use of streamstats to find7 day 10 year low flow for Medway, MA

Hi Marnin Feldman,

Ticket: https://streamstats.freshdesk.com/helpdesk/tickets/1918

It turns out that our programmers had changed something to fix a problem with printing reports from

Enter number values in green boxes below

Enter values in the units specified

↓

0	Q_R = Enter upstream flow in **MGD**
0.0144	Q_P = Enter discharge flow in **MGD**
0.122	Downstream 7Q10

Enter a dilution factor, if other than zero

↓

6.47

Enter values in the units specified

↓

270	C_d = Enter influent hardness in **mg/L** $CaCO_3$
64	C_s = Enter receiving water hardness in **mg/L** $CaCO_3$

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

↓

7.6	pH in **Standard Units**
25.6	Temperature in **°C**
0.59	Ammonia in **mg/L**
64	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0	Cadmium in **µg/L**
0	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
1.6	Copper in **µg/L**
1300	Iron in **µg/L**
0.69	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

↓

0.028	TRC in **µg/L**
0	Ammonia in **mg/L**
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**
11	Copper in **µg/L**
4300	Iron in **µg/L**
2.3	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	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**
0.3	Total Phthalates in **µg/L**
0.3	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: critical low flow equal to the 7Q10; enter alternate low flow if approved by the State
Saltwater (estuarine and marine): enter critical low flow if approved by the State; enter 0 if no entry
Discharge flow is equal to the design flow or 1 MGD, whichever is less
Optional entry for Q_r; leave 0 if no entry

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

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	1.0					
A. Inorganics	TBEL applies if bolded		WQBEL applies if bolded		Compliance Level applies if shown	
Ammonia	**Report**	mg/L	---			
Chloride	**Report**	µg/L	---			
Total Residual Chlorine	0.2	mg/L	**93**	µg/L	---	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	5422	µg/L		
Arsenic	**104**	µg/L	85	µg/L		
Cadmium	**10.2**	µg/L	0.9827	µg/L		
Chromium III	**323**	µg/L	286.2	µg/L		
Chromium VI	**323**	µg/L	96.9	µg/L		
Copper	**242**	µg/L	29.7	µg/L		
Iron	**5000**	µg/L	8472	µg/L		
Lead	**160**	µg/L	6.29	µg/L		
Mercury	**0.739**	µg/L	7.67	µg/L		
Nickel	**1450**	µg/L	168.0	µg/L		
Selenium	**235.8**	µg/L	42.4	µg/L		
Silver	**35.1**	µg/L	4.5	µg/L		
Zinc	**420**	µg/L	385.2	µg/L		
Cyanide	**178**	mg/L	44.1	µg/L	---	µg/L
B. Non-Halogenated VOCs						
Total BTEX	**100**	µg/L	---			
Benzene	**5.0**	µg/L	---			
1,4 Dioxane	**200**	µg/L	---			
Acetone	**7970**	µg/L	---			
Phenol	**1,080**	µg/L	2542	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	13.6	µg/L		
1,2 Dichlorobenzene	**600**	µg/L	---			
1,3 Dichlorobenzene	**320**	µg/L	---			
1,4 Dichlorobenzene	**5.0**	µg/L	---			
Total dichlorobenzene	**---**	µg/L	---			
1,1 Dichloroethane	**70**	µg/L	---			
1,2 Dichloroethane	**5.0**	µg/L	---			
1,1 Dichloroethylene	**3.2**	µg/L	---			
Ethylene Dibromide	**0.05**	µg/L	---			
Methylene Chloride	**4.6**	µg/L	---			
1,1,1 Trichloroethane	**200**	µg/L	---			
1,1,2 Trichloroethane	**5.0**	µg/L	---			
Trichloroethylene	**5.0**	µg/L	---			
Tetrachloroethylene	**5.0**	µg/L	28.0	µg/L		
cis-1,2 Dichloroethylene	**70**	µg/L	---			
Vinyl Chloride	**2.0**	µg/L	---			
D. Non-Halogenated SVOCs						
Total Phthalates	190	µg/L	---	µg/L		
Diethylhexyl phthalate	**101**	µg/L	18.6	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0322	µg/L	---	µg/L
Total Group II Polycyclic Aromatic Hydrocarbons	**100**	µg/L	---			
Naphthalene	**20**	µg/L	---			
E. Halogenated SVOCs						
Total Polychlorinated Biphenyls	**0.000064**	µg/L	---		0.5	µg/L
Pentachlorophenol	**1.0**	µg/L	---			
F. Fuels Parameters						
Total Petroleum Hydrocarbons	**5.0**	mg/L	---			
Ethanol	**Report**	mg/L	---			
Methyl-tert-Butyl Ether	**70**	µg/L	169	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

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June 22, 2017

Marnin Feldman
PES Associates, Inc.
62 Derby Street, Suite 10
Hingham, MA 02043

Project Location: Medway Block Co.
Client Job Number:
Project Number: 17-5558
Laboratory Work Order Number: 17F0661

Enclosed are results of analyses for samples received by the laboratory on June 13, 2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Aaron L. Benoit
Project Manager

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

PES Associates, Inc.
62 Derby Street, Suite 10
Hingham, MA 02043
ATTN: Marnin Feldman

REPORT DATE: 6/22/2017

PURCHASE ORDER NUMBER:

PROJECT NUMBER: 17-5558

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 17F0661

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

PROJECT LOCATION: Medway Block Co.

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
Receiving Water	17F0661-01	Water		EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				SM19-22 4500 NH3 C	
				SM21-22 2340C	
				SM21-22 3500 Cr B	
				SM21-22 4500 H B	
				Tri Chrome Calc.	
Influent	17F0661-02	Waste Water		EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 245.1	
				EPA 300.0	
				EPA 335.4	NY11393/MA-MAI138/MA1110
				EPA 504.1	
				EPA 624	
				EPA 625	
				SM19-22 4500 NH3 C	
				SM21-22 2340C	
				SM21-22 2540D	
				SM21-22 3500 Cr B	
				SM21-22 4500 CL G	
				SM21-22 4500 H B	
				SW-846 8270D	
				Tri Chrome Calc.	
Effluent	17F0661-03	Waste Water		EPA 1664B	
				EPA 200.7	
				EPA 200.8	
				EPA 300.0	
				SM21-22 2340C	
				SM21-22 2540D	
				SM21-22 4500 CL G	
				SM21-22 4500 H B	
				SW-846 8270D	

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CASE NARRATIVE SUMMARY

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

For method 8270, only a select list of analytes was requested and reported.

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

EPA 624

Qualifications:

L-03

Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Acetone

17F0661-02[Influent], B179297-BLK1, B179297-BS1

EPA 625

Qualifications:

L-07

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

Analyte & Samples(s) Qualified:

Benzidine

B179392-BSD1

S-07

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

Analyte & Samples(s) Qualified:

2,4,6-Tribromophenol

B179392-BSD1

V-04

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

Analyte & Samples(s) Qualified:

Benzidine

17F0661-02[Influent], B179392-BLK1, B179392-BS1, B179392-BSD1

V-05

Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.

Analyte & Samples(s) Qualified:

Benzidine

17F0661-02[Influent], B179392-BLK1, B179392-BS1, B179392-BSD1

Benzo(g,h,i)perylene

17F0661-02[Influent], B179392-BLK1, B179392-BS1, B179392-BSD1

Hexachlorocyclopentadiene

17F0661-02[Influent], B179392-BLK1, B179392-BS1, B179392-BSD1

Indeno(1,2,3-cd)pyrene

B179392-BLK1, B179392-BS1, B179392-BSD1

V-19

Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.

Analyte & Samples(s) Qualified:

2,4-Dinitrophenol

17F0661-02[Influent], B179392-BLK1, B179392-BS1, B179392-BSD1

SM21-22 4500 H B

Qualifications:

H-05

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

Analyte & Samples(s) Qualified:

pH

17F0661-01[Receiving Water], 17F0661-02[Influent], 17F0661-03[Effluent]

SW-846 8270D

Qualifications:

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

B

Analyte is found in the associated blank as well as in the sample.

Analyte & Samples(s) Qualified:

Bis(2-Ethylhexyl)phthalate
17F0661-02[Influent], 17F0661-03[Effluent], B179392-BLK1, B179392-BS1, B179392-BSD1

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

Lisa A. Worthington
Project Manager

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Receiving Water Sampled: 6/13/2017 09:10

Sample ID: 17F0661-01

Sample Matrix: Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Arsenic	ND	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Cadmium	ND	0.20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Chromium	ND	10	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Chromium, Trivalent	ND	0.010	mg/L	1		Tri Chrome Calc.	6/15/17	6/20/17 1:39	MJH
Copper	1.6	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Iron	1.3	0.050	mg/L	1		EPA 200.7	6/14/17	6/16/17 1:45	SHN
Lead	0.69	0.50	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Mercury	ND	0.00010	mg/L	1		EPA 245.1	6/15/17	6/16/17 8:56	TJK
Nickel	ND	5.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Selenium	ND	5.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Silver	ND	0.20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD
Zinc	ND	20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:51	WSD

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Receiving Water Sampled: 6/13/2017 09:10

Sample ID: 17F0661-01

Sample Matrix: Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	0.59	0.30	0.30	mg/L	1		SM19-22 4500 NH3 C	6/15/17	6/16/17 10:30	EC
Hardness	64	2.0		mg/L	1		SM21-22 2340C	6/14/17	6/14/17 12:45	DJM
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	6/13/17	6/13/17 21:45	DJM
pH @17.6°C	7.6			pH Units	1	H-05	SM21-22 4500 H B	6/14/17	6/14/17 8:30	LL

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Volatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acetone	ND	50	4.9	µg/L	1	L-03	EPA 624	6/15/17	6/16/17 5:23	CMR
tert-Amyl Methyl Ether (TAME)	ND	0.50	0.11	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Benzene	ND	1.0	0.12	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
tert-Butyl Alcohol (TBA)	ND	20	2.2	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Carbon Tetrachloride	ND	2.0	0.25	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,2-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,3-Dichlorobenzene	ND	2.0	0.17	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,4-Dichlorobenzene	ND	2.0	0.15	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,2-Dichloroethane	ND	2.0	0.19	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
cis-1,2-Dichloroethylene	ND	1.0	0.15	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,1-Dichloroethane	ND	2.0	0.16	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,1-Dichloroethylene	ND	2.0	0.21	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,4-Dioxane	ND	50	26	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Ethylbenzene	0.26	2.0	0.13	µg/L	1	J	EPA 624	6/15/17	6/16/17 5:23	CMR
Methyl tert-Butyl Ether (MTBE)	ND	2.0	0.090	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Methylene Chloride	ND	5.0	3.2	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Tetrachloroethylene	ND	2.0	0.27	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Toluene	ND	1.0	0.17	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,1,1-Trichloroethane	ND	2.0	0.13	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
1,1,2-Trichloroethane	ND	2.0	0.24	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Trichloroethylene	ND	2.0	0.20	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
Vinyl Chloride	ND	2.0	0.13	µg/L	1		EPA 624	6/15/17	6/16/17 5:23	CMR
m+p Xylene	0.42	2.0	0.26	µg/L	1	J	EPA 624	6/15/17	6/16/17 5:23	CMR
o-Xylene	0.23	2.0	0.13	µg/L	1	J	EPA 624	6/15/17	6/16/17 5:23	CMR

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,2-Dichloroethane-d4	84.0	70-130		6/16/17 5:23
Toluene-d8	99.8	70-130		6/16/17 5:23
4-Bromofluorobenzene	101	70-130		6/16/17 5:23

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene	ND	0.050	0.050	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Benzo(a)pyrene	ND	0.10	0.10	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Benzo(b)fluoranthene	ND	0.050	0.050	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Benzo(k)fluoranthene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Bis(2-Ethylhexyl)phthalate	0.30	1.0	0.10	µg/L	1	B, J	SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Chrysene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Dibenz(a,h)anthracene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM
Pentachlorophenol	ND	1.0	0.34	µg/L	1		SW-846 8270D	6/16/17	6/19/17 20:32	CJM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	47.4	15-110		6/19/17 20:32
Phenol-d6	32.2	15-110		6/19/17 20:32
Nitrobenzene-d5	76.6	30-130		6/19/17 20:32
2-Fluorobiphenyl	65.8	30-130		6/19/17 20:32
2,4,6-Tribromophenol	92.9	15-110		6/19/17 20:32
p-Terphenyl-d14	52.3	30-130		6/19/17 20:32

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Acenaphthene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Acenaphthylene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Anthracene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Benzidine	ND	20	µg/L	1	V-04, V-05	EPA 625	6/16/17	6/20/17 10:26	BGL
Benzo(g,h,i)perylene	ND	5.0	µg/L	1	V-05	EPA 625	6/16/17	6/20/17 10:26	BGL
4-Bromophenylphenylether	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Butylbenzylphthalate	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
4-Chloro-3-methylphenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Bis(2-chloroethyl)ether	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Bis(2-chloroisopropyl)ether	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2-Chloronaphthalene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2-Chlorophenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
4-Chlorophenylphenylether	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Di-n-butylphthalate	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
1,3-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
1,4-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
1,2-Dichlorobenzene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
3,3-Dichlorobenzidine	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2,4-Dichlorophenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Diethylphthalate	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2,4-Dimethylphenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Dimethylphthalate	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
4,6-Dinitro-2-methylphenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2,4-Dinitrophenol	ND	10	µg/L	1	V-19	EPA 625	6/16/17	6/20/17 10:26	BGL
2,4-Dinitrotoluene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2,6-Dinitrotoluene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Di-n-octylphthalate	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Fluoranthene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Fluorene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Hexachlorobenzene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Hexachlorobutadiene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Hexachlorocyclopentadiene	ND	10	µg/L	1	V-05	EPA 625	6/16/17	6/20/17 10:26	BGL
Hexachloroethane	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Isophorone	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Naphthalene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Nitrobenzene	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2-Nitrophenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
4-Nitrophenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
N-Nitrosodimethylamine	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
N-Nitrosodiphenylamine	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
N-Nitrosodi-n-propylamine	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2-Methylnaphthalene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Phenanthrene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Semivolatile Organic Compounds by - GC/MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
2-Methylphenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Phenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
3/4-Methylphenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
Pyrene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
1,2,4-Trichlorobenzene	ND	5.0	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL
2,4,6-Trichlorophenol	ND	10	µg/L	1		EPA 625	6/16/17	6/20/17 10:26	BGL

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	44.5	15-110		6/20/17 10:26
Phenol-d6	31.3	15-110		6/20/17 10:26
Nitrobenzene-d5	84.7	30-130		6/20/17 10:26
2-Fluorobiphenyl	81.1	30-130		6/20/17 10:26
2,4,6-Tribromophenol	95.3	15-110		6/20/17 10:26
p-Terphenyl-d14	104	30-130		6/20/17 10:26

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Antimony	ND	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Arsenic	ND	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Cadmium	ND	0.20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Chromium	ND	10	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Chromium, Trivalent	ND	0.010	mg/L	1		Tri Chrome Calc.	6/15/17	6/20/17 1:39	MJH
Copper	11	1.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Iron	4.3	0.050	mg/L	1		EPA 200.7	6/14/17	6/16/17 2:06	SHN
Lead	2.3	0.50	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Mercury	ND	0.00010	mg/L	1		EPA 245.1	6/15/17	6/16/17 9:01	TJK
Nickel	ND	5.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Selenium	ND	5.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Silver	ND	0.20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD
Zinc	ND	20	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:54	WSD

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Ammonia as N	ND	0.30	0.30	mg/L	1		SM19-22 4500 NH3 C	6/16/17	6/17/17 13:20	VAK
Chloride	610	50		mg/L	50		EPA 300.0	6/20/17	6/20/17 22:46	DJM
Chlorine, Residual	0.028	0.020		mg/L	1		SM21-22 4500 CL G	6/13/17	6/13/17 21:25	DJM
Hardness	270	2.0		mg/L	1		SM21-22 2340C	6/14/17	6/14/17 12:45	DJM
Hexavalent Chromium	ND	0.0040		mg/L	1		SM21-22 3500 Cr B	6/13/17	6/13/17 21:45	DJM
pH @14.5°C	6.7			pH Units	1	H-05	SM21-22 4500 H B	6/14/17	6/14/17 8:30	LL
Total Suspended Solids	ND	5.0		mg/L	1		SM21-22 2540D	6/14/17	6/14/17 14:00	LL
Silica Gel Treated HEM (SGT-HEM)	37	1.4		mg/L	1		EPA 1664B	6/15/17	6/15/17 10:00	LL

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

Drinking Water Organics EPA 504.1

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
1,2-Dibromoethane (EDB) (1)	ND	0.021	µg/L	1		EPA 504.1	6/15/17	6/15/17 19:08	JMB

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
1,3-Dibromopropane (1)	103	70-130		6/15/17 19:08

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

Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Influent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-02

Sample Matrix: Waste Water

EPA 335.4 / SW846 9012B

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Cyanide (total)	ND	0.00500	mg/l	1	U	wc-Cyanide, Total	6/17/17	6/17/17 14:23	RLT

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Effluent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-03

Sample Matrix: Waste Water

Semivolatile Organic Compounds by GC/MS

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Benzo(a)anthracene	ND	0.050	0.050	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Benzo(a)pyrene	ND	0.10	0.10	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Benzo(b)fluoranthene	ND	0.050	0.050	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Benzo(k)fluoranthene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Bis(2-Ethylhexyl)phthalate	0.16	1.0	0.10	µg/L	1	B, J	SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Chrysene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Dibenz(a,h)anthracene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Indeno(1,2,3-cd)pyrene	ND	0.20	0.20	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM
Pentachlorophenol	ND	1.0	0.34	µg/L	1		SW-846 8270D	6/16/17	6/20/17 9:57	CJM

Surrogates	% Recovery	Recovery Limits	Flag/Qual	
2-Fluorophenol	49.2	15-110		6/20/17 9:57
Phenol-d6	34.5	15-110		6/20/17 9:57
Nitrobenzene-d5	81.2	30-130		6/20/17 9:57
2-Fluorobiphenyl	64.6	30-130		6/20/17 9:57
2,4,6-Tribromophenol	92.0	15-110		6/20/17 9:57
p-Terphenyl-d14	58.9	30-130		6/20/17 9:57

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Effluent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-03

Sample Matrix: Waste Water

Metals Analyses (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Iron	0.53	0.050	mg/L	1		EPA 200.7	6/14/17	6/16/17 2:11	SHN
Nickel	ND	5.0	µg/L	1		EPA 200.8	6/14/17	6/15/17 7:58	WSD

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Project Location: Medway Block Co. Sample Description: Work Order: 17F0661

Date Received: 6/13/2017

Field Sample #: Effluent Sampled: 6/13/2017 09:30

Sample ID: 17F0661-03

Sample Matrix: Waste Water

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

Analyte	Results	RL	DL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Chloride	590	50		mg/L	50		EPA 300.0	6/20/17	6/20/17 22:46	DJM
Chlorine, Residual	ND	0.020		mg/L	1		SM21-22 4500 CL G	6/13/17	6/13/17 21:25	DJM
Hardness	290	2.0		mg/L	1		SM21-22 2340C	6/14/17	6/14/17 12:45	DJM
pH @15.4°C	6.9			pH Units	1	H-05	SM21-22 4500 H B	6/14/17	6/14/17 8:30	LL
Total Suspended Solids	ND	5.0		mg/L	1		SM21-22 2540D	6/14/17	6/14/17 14:00	LL
Silica Gel Treated HEM (SGT-HEM)	ND	1.4		mg/L	1		EPA 1664B	6/15/17	6/15/17 10:00	LL

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

Sample Extraction Data

EPA 1664B

Lab Number [Field ID]	Batch	Initial [mL]	Date
17F0661-02 [Influent]	B179280	1000	06/15/17
17F0661-03 [Effluent]	B179280	1000	06/15/17

Prep Method: EPA 200.7-EPA 200.7

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179251	50.0	50.0	06/14/17
17F0661-02 [Influent]	B179251	50.0	50.0	06/14/17
17F0661-03 [Effluent]	B179251	50.0	50.0	06/14/17

Prep Method: EPA 200.8-EPA 200.8

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179252	50.0	50.0	06/14/17
17F0661-02 [Influent]	B179252	50.0	50.0	06/14/17
17F0661-03 [Effluent]	B179252	50.0	50.0	06/14/17

Prep Method: EPA 245.1-EPA 245.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179356	6.00	6.00	06/15/17
17F0661-02 [Influent]	B179356	6.00	6.00	06/15/17

Prep Method: EPA 300.0-EPA 300.0

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179912	10.0	10.0	06/20/17
17F0661-03 [Effluent]	B179912	10.0	10.0	06/20/17

Prep Method: EPA 504 water-EPA 504.1

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179330	34.0	35.0	06/15/17

Prep Method: SW-846 5030B-EPA 624

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179297	5	5.00	06/15/17

Prep Method: SW-846 3510C-EPA 625

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179392	1000	1.00	06/16/17

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

Sample Extraction Data

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179358	100	100	06/15/17

SM19-22 4500 NH3 C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179404	100	100	06/16/17

SM21-22 2340C

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179229	50.0	50.0	06/14/17
17F0661-02 [Influent]	B179229	50.0	50.0	06/14/17
17F0661-03 [Effluent]	B179229	50.0	50.0	06/14/17

SM21-22 2540D

Lab Number [Field ID]	Batch	Initial [mL]	Date
17F0661-02 [Influent]	B179160	100	06/14/17
17F0661-03 [Effluent]	B179160	100	06/14/17

SM21-22 3500 Cr B

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-01 [Receiving Water]	B179138	50.0	50.0	06/13/17
17F0661-02 [Influent]	B179138	50.0	50.0	06/13/17

SM21-22 4500 CL G

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179136	100	100	06/13/17
17F0661-03 [Effluent]	B179136	100	100	06/13/17

SM21-22 4500 H B

Lab Number [Field ID]	Batch	Initial [mL]	Date
17F0661-01 [Receiving Water]	B179157	50.0	06/14/17
17F0661-02 [Influent]	B179157	50.0	06/14/17
17F0661-03 [Effluent]	B179157	50.0	06/14/17

Prep Method: SW-846 3510C-SW-846 8270D

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
17F0661-02 [Influent]	B179392	1000	1.00	06/16/17
17F0661-03 [Effluent]	B179392	1000	1.00	06/16/17

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Sample Extraction Data

Prep Method: SW-846 3005A-Tri Chrome Calc.

Lab Number [Field ID]	Batch	Initial [mL]	Date
17F0661-01 [Receiving Water]	B179338	1.00	06/15/17
17F0661-02 [Influent]	B179338	1.00	06/15/17

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes	
Batch B179297 - SW-846 5030B												
Blank (B179297-BLK1)				Prepared & Analyzed: 06/15/17								
Acetone	ND	50	µg/L								L-03	
tert-Amyl Methyl Ether (TAME)	ND	0.50	µg/L									
Benzene	ND	1.0	µg/L									
tert-Butyl Alcohol (TBA)	ND	20	µg/L									
Carbon Tetrachloride	ND	2.0	µg/L									
1,2-Dichlorobenzene	ND	2.0	µg/L									
1,3-Dichlorobenzene	ND	2.0	µg/L									
1,4-Dichlorobenzene	ND	2.0	µg/L									
1,2-Dichloroethane	ND	2.0	µg/L									
cis-1,2-Dichloroethylene	ND	1.0	µg/L									
1,1-Dichloroethane	ND	2.0	µg/L									
1,1-Dichloroethylene	ND	2.0	µg/L									
1,4-Dioxane	ND	50	µg/L									
Ethylbenzene	ND	2.0	µg/L									
Methyl tert-Butyl Ether (MTBE)	ND	2.0	µg/L									
Methylene Chloride	ND	5.0	µg/L									
Tetrachloroethylene	ND	2.0	µg/L									
Toluene	ND	1.0	µg/L									
1,1,1-Trichloroethane	ND	2.0	µg/L									
1,1,2-Trichloroethane	ND	2.0	µg/L									
Trichloroethylene	ND	2.0	µg/L									
Vinyl Chloride	ND	2.0	µg/L									
m+p Xylene	ND	2.0	µg/L									
o-Xylene	ND	2.0	µg/L									
Surrogate: 1,2-Dichloroethane-d4	*22.3*		µg/L	25.0		89.3		70-130				
Surrogate: Toluene-d8	*24.8*		µg/L	25.0		99.2		70-130				
Surrogate: 4-Bromofluorobenzene	*24.3*		µg/L	25.0		97.2		70-130				
LCS (B179297-BS1)				Prepared & Analyzed: 06/15/17								
Acetone	54.4	50	µg/L	100		**54.4**	*	70-160			L-03	†
tert-Amyl Methyl Ether (TAME)	10.6	0.50	µg/L	10.0		106		70-130				
Benzene	10.7	1.0	µg/L	10.0		107		37-151				
tert-Butyl Alcohol (TBA)	110	20	µg/L	100		110		40-160				†
Carbon Tetrachloride	10.2	2.0	µg/L	10.0		102		70-140				
1,2-Dichlorobenzene	9.63	2.0	µg/L	10.0		96.3		18-190				
1,3-Dichlorobenzene	9.23	2.0	µg/L	10.0		92.3		59-156				
1,4-Dichlorobenzene	9.33	2.0	µg/L	10.0		93.3		18-190				
1,2-Dichloroethane	9.51	2.0	µg/L	10.0		95.1		49-155				
cis-1,2-Dichloroethylene	9.66	1.0	µg/L	10.0		96.6		70-130				
1,1-Dichloroethane	10.1	2.0	µg/L	10.0		101		59-155				
1,1-Dichloroethylene	9.14	2.0	µg/L	10.0		91.4		20-234				
1,4-Dioxane	113	50	µg/L	100		113		40-130				†
Ethylbenzene	11.3	2.0	µg/L	10.0		113		37-162				
Methyl tert-Butyl Ether (MTBE)	10.3	2.0	µg/L	10.0		103		70-130				
Methylene Chloride	10.6	5.0	µg/L	10.0		106		50-221				
Tetrachloroethylene	10.3	2.0	µg/L	10.0		103		64-148				
Toluene	11.2	1.0	µg/L	10.0		112		47-150				
1,1,1-Trichloroethane	9.15	2.0	µg/L	10.0		91.5		52-162				
1,1,2-Trichloroethane	10.8	2.0	µg/L	10.0		108		52-150				
Trichloroethylene	10.4	2.0	µg/L	10.0		104		71-157				
Vinyl Chloride	10.4	2.0	µg/L	10.0		104		20-251				
m+p Xylene	21.9	2.0	µg/L	20.0		109		70-130				

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QUALITY CONTROL

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179297 - SW-846 5030B										
LCS (B179297-BS1)				Prepared & Analyzed: 06/15/17						
o-Xylene	10.7	2.0	µg/L	10.0		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	*21.7*		µg/L	25.0		87.0	70-130			
Surrogate: Toluene-d8	*24.6*		µg/L	25.0		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	*25.3*		µg/L	25.0		101	70-130			

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QUALITY CONTROL

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	
Batch B179392 - SW-846 3510C											
Blank (B179392-BLK1)				Prepared: 06/16/17 Analyzed: 06/19/17							
Benzo(a)anthracene	ND	0.050	µg/L								
Benzo(a)pyrene	ND	0.10	µg/L								
Benzo(b)fluoranthene	ND	0.050	µg/L								
Benzo(k)fluoranthene	ND	0.20	µg/L								
Bis(2-Ethylhexyl)phthalate	2.8	1.0	µg/L							B	
Chrysene	ND	0.20	µg/L								
Dibenz(a,h)anthracene	ND	0.20	µg/L								
Indeno(1,2,3-cd)pyrene	ND	0.20	µg/L								
Pentachlorophenol	ND	1.0	µg/L								
Surrogate: 2-Fluorophenol	*105*		µg/L	200		52.7	15-110				
Surrogate: Phenol-d6	*82.1*		µg/L	200		41.0	15-110				
Surrogate: Nitrobenzene-d5	*88.6*		µg/L	100		88.6	30-130				
Surrogate: 2-Fluorobiphenyl	*81.7*		µg/L	100		81.7	30-130				
Surrogate: 2,4,6-Tribromophenol	*212*		µg/L	200		106	15-110				
Surrogate: p-Terphenyl-d14	*71.4*		µg/L	100		71.4	30-130				
LCS (B179392-BS1)				Prepared: 06/16/17 Analyzed: 06/19/17							
Benzo(a)anthracene	91.5	1.2	µg/L	100		91.5	40-140				
Benzo(a)pyrene	96.6	2.5	µg/L	100		96.6	40-140				
Benzo(b)fluoranthene	99.7	1.2	µg/L	100		99.7	40-140				
Benzo(k)fluoranthene	98.9	5.0	µg/L	100		98.9	40-140				
Bis(2-Ethylhexyl)phthalate	110	25	µg/L	100		110	40-140			B	
Chrysene	86.2	5.0	µg/L	100		86.2	40-140				
Dibenz(a,h)anthracene	104	5.0	µg/L	100		104	40-140				
Indeno(1,2,3-cd)pyrene	104	5.0	µg/L	100		104	40-140				
Pentachlorophenol	68.0	25	µg/L	100		68.0	30-130				
Surrogate: 2-Fluorophenol	*86.7*		µg/L	200		43.3	15-110				
Surrogate: Phenol-d6	*83.6*		µg/L	200		41.8	15-110				
Surrogate: Nitrobenzene-d5	*85.8*		µg/L	100		85.8	30-130				
Surrogate: 2-Fluorobiphenyl	*84.0*		µg/L	100		84.0	30-130				
Surrogate: 2,4,6-Tribromophenol	*160*		µg/L	200		80.1	15-110				
Surrogate: p-Terphenyl-d14	*64.6*		µg/L	100		64.6	30-130				
LCS Dup (B179392-BSD1)				Prepared: 06/16/17 Analyzed: 06/19/17							
Benzo(a)anthracene	98.9	1.2	µg/L	100		98.9	40-140	7.83	20		
Benzo(a)pyrene	105	2.5	µg/L	100		105	40-140	8.28	20		
Benzo(b)fluoranthene	109	1.2	µg/L	100		109	40-140	8.52	20		
Benzo(k)fluoranthene	108	5.0	µg/L	100		108	40-140	8.78	20		
Bis(2-Ethylhexyl)phthalate	120	25	µg/L	100		120	40-140	7.97	20	B	
Chrysene	93.4	5.0	µg/L	100		93.4	40-140	8.10	20		
Dibenz(a,h)anthracene	113	5.0	µg/L	100		113	40-140	8.43	20		
Indeno(1,2,3-cd)pyrene	113	5.0	µg/L	100		113	40-140	8.24	50		‡
Pentachlorophenol	72.0	25	µg/L	100		72.0	30-130	5.75	50		‡
Surrogate: 2-Fluorophenol	*122*		µg/L	200		61.0	15-110				
Surrogate: Phenol-d6	*85.1*		µg/L	200		42.6	15-110				
Surrogate: Nitrobenzene-d5	*93.6*		µg/L	100		93.6	30-130				
Surrogate: 2-Fluorobiphenyl	*91.4*		µg/L	100		91.4	30-130				
Surrogate: 2,4,6-Tribromophenol	*171*		µg/L	200		85.4	15-110				
Surrogate: p-Terphenyl-d14	*70.9*		µg/L	100		70.9	30-130				

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179392 - SW-846 3510C										
Blank (B179392-BLK1)				Prepared: 06/16/17 Analyzed: 06/20/17						
Acenaphthene	ND	5.0	µg/L							
Acenaphthylene	ND	5.0	µg/L							
Anthracene	ND	5.0	µg/L							
Benzidine	ND	20	µg/L							V-04, V-05
Benzo(g,h,i)perylene	ND	5.0	µg/L							V-05
Benzo(k)fluoranthene	ND	5.0	µg/L							
4-Bromophenylphenylether	ND	10	µg/L							
Butylbenzylphthalate	ND	10	µg/L							
4-Chloro-3-methylphenol	ND	10	µg/L							
Bis(2-chloroethyl)ether	ND	10	µg/L							
Bis(2-chloroisopropyl)ether	ND	10	µg/L							
2-Chloronaphthalene	ND	10	µg/L							
2-Chlorophenol	ND	10	µg/L							
4-Chlorophenylphenylether	ND	10	µg/L							
Di-n-butylphthalate	ND	10	µg/L							
1,3-Dichlorobenzene	ND	5.0	µg/L							
1,4-Dichlorobenzene	ND	5.0	µg/L							
1,2-Dichlorobenzene	ND	5.0	µg/L							
3,3-Dichlorobenzidine	ND	10	µg/L							
2,4-Dichlorophenol	ND	10	µg/L							
Diethylphthalate	ND	10	µg/L							
2,4-Dimethylphenol	ND	10	µg/L							
Dimethylphthalate	ND	10	µg/L							
4,6-Dinitro-2-methylphenol	ND	10	µg/L							
2,4-Dinitrophenol	ND	10	µg/L							V-19
2,4-Dinitrotoluene	ND	10	µg/L							
2,6-Dinitrotoluene	ND	10	µg/L							
Di-n-octylphthalate	ND	10	µg/L							
1,2-Diphenylhydrazine (as Azobenzene)	ND	10	µg/L							
Bis(2-Ethylhexyl)phthalate	ND	10	µg/L							
Fluoranthene	ND	5.0	µg/L							
Fluorene	ND	5.0	µg/L							
Hexachlorobenzene	ND	10	µg/L							
Hexachlorobutadiene	ND	10	µg/L							
Hexachlorocyclopentadiene	ND	10	µg/L							V-05
Hexachloroethane	ND	10	µg/L							
Indeno(1,2,3-cd)pyrene	ND	5.0	µg/L							V-05
Isophorone	ND	10	µg/L							
Naphthalene	ND	5.0	µg/L							
Nitrobenzene	ND	10	µg/L							
2-Nitrophenol	ND	10	µg/L							
4-Nitrophenol	ND	10	µg/L							
N-Nitrosodimethylamine	ND	10	µg/L							
N-Nitrosodiphenylamine	ND	10	µg/L							
N-Nitrosodi-n-propylamine	ND	10	µg/L							
2-Methylnaphthalene	ND	5.0	µg/L							
Phenanthrene	ND	5.0	µg/L							
2-Methylphenol	ND	10	µg/L							
Phenol	ND	10	µg/L							
3/4-Methylphenol	ND	10	µg/L							
Pyrene	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	5.0	µg/L							

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179392 - SW-846 3510C										
Blank (B179392-BLK1)				Prepared: 06/16/17 Analyzed: 06/20/17						
2,4,6-Trichlorophenol	ND	10	µg/L							
Surrogate: 2-Fluorophenol	*102*		µg/L	200		50.8	15-110			
Surrogate: Phenol-d6	*73.3*		µg/L	200		36.6	15-110			
Surrogate: Nitrobenzene-d5	*87.8*		µg/L	100		87.8	30-130			
Surrogate: 2-Fluorobiphenyl	*86.5*		µg/L	100		86.5	30-130			
Surrogate: 2,4,6-Tribromophenol	*220*		µg/L	200		110	15-110			
Surrogate: p-Terphenyl-d14	*105*		µg/L	100		105	30-130			
LCS (B179392-BS1)				Prepared: 06/16/17 Analyzed: 06/20/17						
Acenaphthene	80.3	5.0	µg/L	100		80.3	47-145			
Acenaphthylene	77.3	5.0	µg/L	100		77.3	33-145			
Anthracene	86.0	5.0	µg/L	100		86.0	27-133			
Benzidine	46.6	20	µg/L	100		46.6	40-140			V-04, V-05
Benzo(g,h,i)perylene	70.1	5.0	µg/L	100		70.1	1-219			V-05
Benzo(k)fluoranthene	88.2	5.0	µg/L	100		88.2	11-162			
4-Bromophenylphenylether	90.8	10	µg/L	100		90.8	53-127			
Butylbenzylphthalate	79.2	10	µg/L	100		79.2	1-152			
4-Chloro-3-methylphenol	97.2	10	µg/L	100		97.2	22-147			
Bis(2-chloroethyl)ether	81.1	10	µg/L	100		81.1	12-158			
Bis(2-chloroisopropyl)ether	67.1	10	µg/L	100		67.1	36-166			
2-Chloronaphthalene	66.1	10	µg/L	100		66.1	60-118			
2-Chlorophenol	77.4	10	µg/L	100		77.4	23-134			
4-Chlorophenylphenylether	87.8	10	µg/L	100		87.8	25-158			
Di-n-butylphthalate	92.0	10	µg/L	100		92.0	1-118			
1,3-Dichlorobenzene	68.3	5.0	µg/L	100		68.3	1-172			
1,4-Dichlorobenzene	68.4	5.0	µg/L	100		68.4	20-124			
1,2-Dichlorobenzene	71.7	5.0	µg/L	100		71.7	32-129			
3,3-Dichlorobenzidine	92.8	10	µg/L	100		92.8	1-262			
2,4-Dichlorophenol	87.7	10	µg/L	100		87.7	39-135			
Diethylphthalate	90.8	10	µg/L	100		90.8	1-114			
2,4-Dimethylphenol	77.5	10	µg/L	100		77.5	32-119			
Dimethylphthalate	90.5	10	µg/L	100		90.5	1-112			
4,6-Dinitro-2-methylphenol	87.3	10	µg/L	100		87.3	1-181			
2,4-Dinitrophenol	96.4	10	µg/L	100		96.4	1-191			V-19
2,4-Dinitrotoluene	95.5	10	µg/L	100		95.5	39-139			
2,6-Dinitrotoluene	91.0	10	µg/L	100		91.0	50-158			
Di-n-octylphthalate	98.2	10	µg/L	100		98.2	4-146			
1,2-Diphenylhydrazine (as Azobenzene)	80.8	10	µg/L	100		80.8	40-140			
Bis(2-Ethylhexyl)phthalate	85.4	10	µg/L	100		85.4	8-158			
Fluoranthene	92.3	5.0	µg/L	100		92.3	26-137			
Fluorene	86.7	5.0	µg/L	100		86.7	59-121			
Hexachlorobenzene	82.0	10	µg/L	100		82.0	1-152			
Hexachlorobutadiene	82.1	10	µg/L	100		82.1	24-116			
Hexachlorocyclopentadiene	43.0	10	µg/L	100		43.0	40-140			V-05
Hexachloroethane	72.4	10	µg/L	100		72.4	40-113			
Indeno(1,2,3-cd)pyrene	71.1	5.0	µg/L	100		71.1	1-171			V-05
Isophorone	85.5	10	µg/L	100		85.5	21-196			
Naphthalene	77.7	5.0	µg/L	100		77.7	21-133			
Nitrobenzene	80.3	10	µg/L	100		80.3	35-180			
2-Nitrophenol	80.9	10	µg/L	100		80.9	29-182			
4-Nitrophenol	54.0	10	µg/L	100		54.0	1-132			
N-Nitrosodimethylamine	52.7	10	µg/L	100		52.7	40-140			

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B179392 - SW-846 3510C											
LCS (B179392-BS1)				Prepared: 06/16/17 Analyzed: 06/20/17							
N-Nitrosodiphenylamine	110	10	µg/L	100		110		40-140			
N-Nitrosodi-n-propylamine	89.8	10	µg/L	100		89.8		1-230			
2-Methylnaphthalene	91.5	5.0	µg/L	100		91.5		40-140			
Phenanthrene	86.6	5.0	µg/L	100		86.6		54-120			
2-Methylphenol	72.3	10	µg/L	100		72.3		30-130			
Phenol	42.3	10	µg/L	100		42.3		5-112			
3/4-Methylphenol	78.6	10	µg/L	100		78.6		30-130			
Pyrene	75.6	5.0	µg/L	100		75.6		52-115			
1,2,4-Trichlorobenzene	74.6	5.0	µg/L	100		74.6		44-142			
2,4,6-Trichlorophenol	88.4	10	µg/L	100		88.4		37-144			
Surrogate: 2-Fluorophenol	*97.6*		µg/L	200		48.8		15-110			
Surrogate: Phenol-d6	*77.2*		µg/L	200		38.6		15-110			
Surrogate: Nitrobenzene-d5	*87.3*		µg/L	100		87.3		30-130			
Surrogate: 2-Fluorobiphenyl	*91.0*		µg/L	100		91.0		30-130			
Surrogate: 2,4,6-Tribromophenol	*213*		µg/L	200		106		15-110			
Surrogate: p-Terphenyl-d14	*84.9*		µg/L	100		84.9		30-130			
LCS Dup (B179392-BSD1)				Prepared: 06/16/17 Analyzed: 06/20/17							
Acenaphthene	90.3	5.0	µg/L	100		90.3		47-145	11.7		
Acenaphthylene	87.4	5.0	µg/L	100		87.4		33-145	12.3		
Anthracene	93.8	5.0	µg/L	100		93.8		27-133	8.73		
Benzidine	23.4	20	µg/L	100		**23.4**	*	40-140	66.2		L-07, V-04, V-05
Benzo(g,h,i)perylene	79.4	5.0	µg/L	100		79.4		1-219	12.5		V-05
Benzo(k)fluoranthene	96.7	5.0	µg/L	100		96.7		11-162	9.13		
4-Bromophenylphenylether	104	10	µg/L	100		104		53-127	13.4		
Butylbenzylphthalate	85.5	10	µg/L	100		85.5		1-152	7.56		
4-Chloro-3-methylphenol	104	10	µg/L	100		104		22-147	6.32		
Bis(2-chloroethyl)ether	89.3	10	µg/L	100		89.3		12-158	9.57		
Bis(2-chloroisopropyl)ether	73.3	10	µg/L	100		73.3		36-166	8.83		
2-Chloronaphthalene	83.1	10	µg/L	100		83.1		60-118	22.8		
2-Chlorophenol	84.0	10	µg/L	100		84.0		23-134	8.20		
4-Chlorophenylphenylether	98.0	10	µg/L	100		98.0		25-158	11.1		
Di-n-butylphthalate	98.7	10	µg/L	100		98.7		1-118	7.07		
1,3-Dichlorobenzene	75.9	5.0	µg/L	100		75.9		1-172	10.6		
1,4-Dichlorobenzene	75.8	5.0	µg/L	100		75.8		20-124	10.3		
1,2-Dichlorobenzene	79.1	5.0	µg/L	100		79.1		32-129	9.89		
3,3-Dichlorobenzidine	94.6	10	µg/L	100		94.6		1-262	1.94		
2,4-Dichlorophenol	93.8	10	µg/L	100		93.8		39-135	6.73		
Diethylphthalate	99.2	10	µg/L	100		99.2		1-114	8.76		
2,4-Dimethylphenol	78.6	10	µg/L	100		78.6		32-119	1.45		
Dimethylphthalate	99.8	10	µg/L	100		99.8		1-112	9.80		
4,6-Dinitro-2-methylphenol	95.0	10	µg/L	100		95.0		1-181	8.47		
2,4-Dinitrophenol	101	10	µg/L	100		101		1-191	4.48		V-19
2,4-Dinitrotoluene	107	10	µg/L	100		107		39-139	11.5		
2,6-Dinitrotoluene	101	10	µg/L	100		101		50-158	10.1		
Di-n-octylphthalate	106	10	µg/L	100		106		4-146	7.63		
1,2-Diphenylhydrazine (as Azobenzene)	91.3	10	µg/L	100		91.3		40-140	12.2		
Bis(2-Ethylhexyl)phthalate	93.4	10	µg/L	100		93.4		8-158	9.04		
Fluoranthene	98.7	5.0	µg/L	100		98.7		26-137	6.69		
Fluorene	96.0	5.0	µg/L	100		96.0		59-121	10.3		
Hexachlorobenzene	93.0	10	µg/L	100		93.0		1-152	12.6		
Hexachlorobutadiene	91.6	10	µg/L	100		91.6		24-116	11.0		

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QUALITY CONTROL

Semivolatile Organic Compounds by - GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B179392 - SW-846 3510C											
LCS Dup (B179392-BSD1)				Prepared: 06/16/17 Analyzed: 06/20/17							
Hexachlorocyclopentadiene	49.7	10	µg/L	100		49.7		40-140	14.5		V-05
Hexachloroethane	80.3	10	µg/L	100		80.3		40-113	10.4		
Indeno(1,2,3-cd)pyrene	74.5	5.0	µg/L	100		74.5		1-171	4.77		V-05
Isophorone	91.9	10	µg/L	100		91.9		21-196	7.21		
Naphthalene	85.7	5.0	µg/L	100		85.7		21-133	9.82		
Nitrobenzene	88.3	10	µg/L	100		88.3		35-180	9.50		
2-Nitrophenol	88.2	10	µg/L	100		88.2		29-182	8.68		
4-Nitrophenol	56.8	10	µg/L	100		56.8		1-132	5.07		
N-Nitrosodimethylamine	54.6	10	µg/L	100		54.6		40-140	3.65		
N-Nitrosodiphenylamine	123	10	µg/L	100		123		40-140	11.0		
N-Nitrosodi-n-propylamine	96.2	10	µg/L	100		96.2		1-230	6.93		
2-Methylnaphthalene	101	5.0	µg/L	100		101		40-140	9.85	20	
Phenanthrene	94.6	5.0	µg/L	100		94.6		54-120	8.91		
2-Methylphenol	77.4	10	µg/L	100		77.4		30-130	6.88	20	
Phenol	44.2	10	µg/L	100		44.2		5-112	4.37		
3/4-Methylphenol	84.6	10	µg/L	100		84.6		30-130	7.32	20	
Pyrene	83.5	5.0	µg/L	100		83.5		52-115	9.88		
1,2,4-Trichlorobenzene	82.8	5.0	µg/L	100		82.8		44-142	10.4		
2,4,6-Trichlorophenol	99.4	10	µg/L	100		99.4		37-144	11.6		
Surrogate: 2-Fluorophenol	*110*		µg/L	200		55.1		15-110			
Surrogate: Phenol-d6	*83.0*		µg/L	200		41.5		15-110			
Surrogate: Nitrobenzene-d5	*94.6*		µg/L	100		94.6		30-130			
Surrogate: 2-Fluorobiphenyl	*103*		µg/L	100		103		30-130			
Surrogate: 2,4,6-Tribromophenol	*235*		µg/L	200		**117**	*	15-110			S-07
Surrogate: p-Terphenyl-d14	*92.8*		µg/L	100		92.8		30-130			

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179251 - EPA 200.7										
Blank (B179251-BLK1)				Prepared: 06/14/17 Analyzed: 06/16/17						
Iron	ND	0.050	mg/L							
LCS (B179251-BS1)				Prepared: 06/14/17 Analyzed: 06/16/17						
Iron	0.488	0.050	mg/L	0.500		97.5	85-115			
LCS Dup (B179251-BSD1)				Prepared: 06/14/17 Analyzed: 06/16/17						
Iron	0.494	0.050	mg/L	0.500		98.8	85-115	1.30	20	
Batch B179252 - EPA 200.8										
Blank (B179252-BLK1)				Prepared: 06/14/17 Analyzed: 06/15/17						
Antimony	ND	1.0	µg/L							
Arsenic	ND	1.0	µg/L							
Cadmium	ND	0.20	µg/L							
Chromium	ND	10	µg/L							
Copper	ND	1.0	µg/L							
Lead	ND	0.50	µg/L							
Nickel	ND	5.0	µg/L							
Selenium	ND	5.0	µg/L							
Silver	ND	0.20	µg/L							
Zinc	ND	20	µg/L							
LCS (B179252-BS1)				Prepared: 06/14/17 Analyzed: 06/15/17						
Antimony	528	10	µg/L	500		106	85-115			
Arsenic	532	10	µg/L	500		106	85-115			
Cadmium	528	2.0	µg/L	500		106	85-115			
Chromium	497	100	µg/L	500		99.4	85-115			
Copper	506	10	µg/L	500		101	85-115			
Lead	540	5.0	µg/L	500		108	85-115			
Nickel	501	50	µg/L	500		100	85-115			
Selenium	537	50	µg/L	500		107	85-115			
Silver	508	2.0	µg/L	500		102	85-115			
Zinc	556	200	µg/L	500		111	85-115			
LCS Dup (B179252-BSD1)				Prepared: 06/14/17 Analyzed: 06/15/17						
Antimony	531	10	µg/L	500		106	85-115	0.455	20	
Arsenic	538	10	µg/L	500		108	85-115	1.08	20	
Cadmium	531	2.0	µg/L	500		106	85-115	0.595	20	
Chromium	504	100	µg/L	500		101	85-115	1.45	20	
Copper	513	10	µg/L	500		103	85-115	1.39	20	
Lead	546	5.0	µg/L	500		109	85-115	1.28	20	
Nickel	514	50	µg/L	500		103	85-115	2.49	20	
Selenium	548	50	µg/L	500		110	85-115	2.00	20	
Silver	515	2.0	µg/L	500		103	85-115	1.21	20	
Zinc	564	200	µg/L	500		113	85-115	1.48	20	

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QUALITY CONTROL

Metals Analyses (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179356 - EPA 245.1										
Blank (B179356-BLK1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Mercury	ND	0.00010	mg/L							
LCS (B179356-BS1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Mercury	0.00182	0.00010	mg/L	0.00200		91.0	85-115			
LCS Dup (B179356-BSD1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Mercury	0.00176	0.00010	mg/L	0.00200		87.9	85-115	3.46	20	

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179136 - SM21-22 4500 CL G										
Blank (B179136-BLK1)				Prepared & Analyzed: 06/13/17						
Chlorine, Residual	ND	0.020	mg/L							
LCS (B179136-BS1)				Prepared & Analyzed: 06/13/17						
Chlorine, Residual	1.3	0.020	mg/L	1.20		105	82.5-130			
LCS Dup (B179136-BSD1)				Prepared & Analyzed: 06/13/17						
Chlorine, Residual	1.2	0.020	mg/L	1.20		103	82.5-130	1.69	6.2	
Batch B179138 - SM21-22 3500 Cr B										
Blank (B179138-BLK1)				Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	ND	0.0040	mg/L							
LCS (B179138-BS1)				Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		103	86.6-115			
LCS Dup (B179138-BSD1)				Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	0.10	0.0040	mg/L	0.100		100	86.6-115	2.31	6.61	
Duplicate (B179138-DUP1)	**Source: 17F0661-02**			Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	ND	0.0040	mg/L		ND			NC	20	
Matrix Spike (B179138-MS1)	**Source: 17F0661-02**			Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	0.42	0.020	mg/L	0.500	ND	83.9	23.5-142			
Matrix Spike Dup (B179138-MSD1)	**Source: 17F0661-02**			Prepared & Analyzed: 06/13/17						
Hexavalent Chromium	0.43	0.020	mg/L	0.500	ND	85.1	23.5-142	1.39	7.59	
Batch B179157 - SM21-22 4500 H B										
LCS (B179157-BS1)				Prepared & Analyzed: 06/14/17						
pH	6.04		pH Units	6.00		101	98.3-110			
Batch B179160 - SM21-22 2540D										
Blank (B179160-BLK1)				Prepared & Analyzed: 06/14/17						
Total Suspended Solids	ND	2.5	mg/L							
LCS (B179160-BS1)				Prepared & Analyzed: 06/14/17						
Total Suspended Solids	202	10	mg/L	200		101	66.7-117			

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179160 - SM21-22 2540D										
Duplicate (B179160-DUP2)	**Source: 17F0661-03**			Prepared & Analyzed: 06/14/17						
Total Suspended Solids	ND	5.0	mg/L		ND			NC	5	
Batch B179229 - SM21-22 2340C										
Blank (B179229-BLK1)				Prepared & Analyzed: 06/14/17						
Hardness	ND	2.0	mg/L							
LCS (B179229-BS1)				Prepared & Analyzed: 06/14/17						
Hardness	68	4.0	mg/L	62.2		109	92.6-114			
LCS Dup (B179229-BSD1)				Prepared & Analyzed: 06/14/17						
Hardness	68	4.0	mg/L	62.2		109	92.6-114	0.00	5	
Batch B179280 - EPA 1664B										
Blank (B179280-BLK1)				Prepared & Analyzed: 06/15/17						
Silica Gel Treated HEM (SGT-HEM)	ND	1.4	mg/L							
LCS (B179280-BS1)				Prepared & Analyzed: 06/15/17						
Silica Gel Treated HEM (SGT-HEM)	8.6		mg/L	10.0		86.0	64-132			
Matrix Spike (B179280-MS1)	**Source: 17F0661-03**			Prepared & Analyzed: 06/15/17						
Silica Gel Treated HEM (SGT-HEM)	120	14	mg/L	100	ND	122	64-132			
Batch B179358 - SM19-22 4500 NH3 C										
Blank (B179358-BLK1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Ammonia as N	ND	0.30	mg/L							
LCS (B179358-BS1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Ammonia as N	5.3	0.30	mg/L	5.00		106	85.2-110			
LCS Dup (B179358-BSD1)				Prepared: 06/15/17 Analyzed: 06/16/17						
Ammonia as N	5.2	0.30	mg/L	5.00		103	85.2-110	2.68	8.64	
Batch B179404 - SM19-22 4500 NH3 C										
Blank (B179404-BLK1)				Prepared: 06/16/17 Analyzed: 06/17/17						
Ammonia as N	ND	0.30	mg/L							

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QUALITY CONTROL

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B179404 - SM19-22 4500 NH3 C										
LCS (B179404-BS1)				Prepared: 06/16/17 Analyzed: 06/17/17						
Ammonia as N	5.0	0.30	mg/L	5.00		100	85.2-110			
LCS Dup (B179404-BSD1)				Prepared: 06/16/17 Analyzed: 06/17/17						
Ammonia as N	5.0	0.30	mg/L	5.00		100	85.2-110	0.00	8.64	
Batch B179912 - EPA 300.0										
Blank (B179912-BLK1)				Prepared & Analyzed: 06/20/17						
Chloride	ND	1.0	mg/L							
LCS (B179912-BS1)				Prepared & Analyzed: 06/20/17						
Chloride	27	1.0	mg/L	30.0		90.6	90-110			
LCS Dup (B179912-BSD1)				Prepared & Analyzed: 06/20/17						
Chloride	27	1.0	mg/L	30.0		90.7	90-110	0.0603	20	

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QUALITY CONTROL

Drinking Water Organics EPA 504.1 - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC		%REC Limits	RPD	RPD Limit	Notes
Batch B179330 - EPA 504 water											
LCS (B179330-BS1)				Prepared & Analyzed: 06/15/17							
1,2-Dibromoethane (EDB)	0.212	0.021	µg/L	0.180		118		70-130			
1,2-Dibromoethane (EDB) [2C]	0.237	0.021	µg/L	0.180		**132**	*	70-130			
Surrogate: 1,3-Dibromopropane	*1.15*		µg/L	1.03		112		70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.16*		µg/L	1.03		113		70-130			
LCS Dup (B179330-BSD1)				Prepared & Analyzed: 06/15/17							
1,2-Dibromoethane (EDB)	0.220	0.021	µg/L	0.182		121		70-130	3.96		
1,2-Dibromoethane (EDB) [2C]	0.256	0.021	µg/L	0.182		**141**	*	70-130	7.38		
Surrogate: 1,3-Dibromopropane	*1.15*		µg/L	1.04		110		70-130			
Surrogate: 1,3-Dibromopropane [2C]	*1.15*		µg/L	1.04		111		70-130			

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QUALITY CONTROL

EPA 335.4 / SW846 9012B - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1710171 - General Preparation										
Blank (1710171-BLK1)				Prepared & Analyzed: 06/17/17						
Cyanide (total)	BRL	0.00500	mg/l				-			U
LCS (1710171-BS1)				Prepared & Analyzed: 06/17/17						
Cyanide (total)	0.307	0.00500	mg/l	0.300		102	90-110			
Duplicate (1710171-DUP1)		**Source: 17F0661-02**		Prepared & Analyzed: 06/17/17						
Cyanide (total)	ND	0.00500	mg/l		ND		-	NC	20	U
Matrix Spike (1710171-MS1)		**Source: 17F0661-02**		Prepared & Analyzed: 06/17/17						
Cyanide (total)	0.304	0.00500	mg/l	0.300	BRL	101	90-110			
Matrix Spike Dup (1710171-MSD1)		**Source: 17F0661-02**		Prepared & Analyzed: 06/17/17						
Cyanide (total)	0.281	0.00500	mg/l	0.300	BRL	94	90-110	8	20	
Reference (1710171-SRM1)				Prepared & Analyzed: 06/17/17						
Cyanide (total)	0.338	0.00500	mg/l	0.336		100	73.5-126			

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS

Lab Sample ID: B179330-BS1 Date(s) Analyzed 06/15/2017 06/15/2017

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

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
1,2-Dibromoethane (EDB)	1	2.829	0.000	0.000	0.212	
	2	2.789	0.000	0.000	0.237	12.1

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IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA 504.1

LCS Dup

Lab Sample ID: B179330-BSD1 Date(s) Analyzed 06/15/2017 06/15/2017

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

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

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
1,2-Dibromoethane (EDB)	1	2.830	0.000	0.000	0.220	
	2	2.790	0.000	0.000	0.256	15.1

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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit
DL	Method Detection Limit
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
B	Analyte is found in the associated blank as well as in the sample.
H-05	Holding time was exceeded. pH analysis should be performed immediately at time of sampling. Nominal 15 minute holding time was exceeded.
J	Detected but below the Reporting Limit (lowest calibration standard); therefore, result is an estimated concentration (CLP J-Flag).
L-03	Laboratory fortified blank/laboratory control sample recovery is outside of control limits. Reported value for this compound is likely to be biased on the low side.
L-07	Either laboratory fortified blank/laboratory control sample or duplicate recovery is outside of control limits, but the other is within limits. RPD between the two LFB/LCS results is within method specified criteria.
S-07	One associated surrogate standard recovery is outside of control limits but the other(s) is/are within limits. All recoveries are > 10%.
U	Analyte included in the analysis, but not detected
V-04	Initial calibration did not meet method specifications. Compound was calibrated using a response factor where %RSD is outside of method specified criteria.
V-05	Continuing calibration did not meet method specifications and was biased on the low side for this compound. Increased uncertainty is associated with the reported value which is likely to be biased on the low side.
V-19	Initial calibration did not meet method specifications. Compound was calibrated using linear regression with correlation coefficient <0.99. Reduced precision and accuracy may be associated with reported result.

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 200.7 in Water	
Iron	CT,MA,NH,NY,RI,NC,ME,VA
EPA 200.8 in Water	
Antimony	CT,MA,NH,NY,RI,NC,ME,VA
Arsenic	CT,MA,NH,NY,RI,NC,ME,VA
Cadmium	CT,MA,NH,NY,RI,NC,ME,VA
Chromium	CT,MA,NH,NY,RI,NC,ME,VA
Copper	CT,MA,NH,NY,RI,NC,ME,VA
Lead	CT,MA,NH,NY,RI,NC,ME,VA
Nickel	CT,MA,NH,NY,RI,NC,ME,VA
Selenium	CT,MA,NH,NY,RI,NC,ME,VA
Silver	CT,MA,NH,NY,RI,NC,ME,VA
Zinc	CT,MA,NH,NY,RI,NC,ME,VA
EPA 245.1 in Water	
Mercury	CT,MA,NH,RI,NY,NC,ME,VA
EPA 300.0 in Water	
Chloride	NC,NY,MA,VA,ME,NH,CT,RI
EPA 624 in Water	
Acetone	NH,NY
Benzene	CT,MA,NH,NY,RI,NC,ME,VA
Carbon Tetrachloride	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,3-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,4-Dichlorobenzene	CT,MA,NH,NY,RI,NC,ME,VA
1,2-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1-Dichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Ethylbenzene	CT,MA,NH,NY,RI,NC,ME,VA
Methyl tert-Butyl Ether (MTBE)	NH,NY,NC
Methylene Chloride	CT,MA,NH,NY,RI,NC,ME,VA
Naphthalene	NC
Tetrachloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Toluene	CT,MA,NH,NY,RI,NC,ME,VA
1,2,4-Trichlorobenzene	NC
1,1,1-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
1,1,2-Trichloroethane	CT,MA,NH,NY,RI,NC,ME,VA
Trichloroethylene	CT,MA,NH,NY,RI,NC,ME,VA
Vinyl Chloride	CT,MA,NH,NY,RI,NC,ME,VA
m+p Xylene	CT,MA,NH,NY,RI,NC,VA
o-Xylene	CT,MA,NH,NY,RI,NC,VA
EPA 625 in Water	
Acenaphthene	CT,MA,NH,NY,NC,RI,ME,VA
Acenaphthylene	CT,MA,NH,NY,NC,RI,ME,VA
Anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Benzidine	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(a)anthracene	CT,MA,NH,NY,NC,RI,ME,VA

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 625 in Water	
Benzo(a)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(b)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(g,h,i)perylene	CT,MA,NH,NY,NC,RI,ME,VA
Benzo(k)fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
4-Bromophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Butylbenzylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4-Chloro-3-methylphenol	CT,MA,NH,NY,NC,RI,VA
Bis(2-chloroethyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
Bis(2-chloroisopropyl)ether	CT,MA,NH,NY,NC,RI,ME,VA
2-Chloronaphthalene	CT,MA,NH,NY,NC,RI,ME,VA
2-Chlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Chlorophenylphenylether	CT,MA,NH,NY,NC,RI,ME,VA
Chrysene	CT,MA,NH,NY,NC,RI,ME,VA
Dibenz(a,h)anthracene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-butylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,3-Dichlorobenzene	MA,NC
1,4-Dichlorobenzene	MA,NC
1,2-Dichlorobenzene	MA,NC
3,3-Dichlorobenzidine	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
Diethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dimethylphenol	CT,MA,NH,NY,NC,RI,ME,VA
Dimethylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
4,6-Dinitro-2-methylphenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
2,4-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
2,6-Dinitrotoluene	CT,MA,NH,NY,NC,RI,ME,VA
Di-n-octylphthalate	CT,MA,NH,NY,NC,RI,ME,VA
1,2-Diphenylhydrazine (as Azobenzene)	NC
Bis(2-Ethylhexyl)phthalate	CT,MA,NH,NY,NC,RI,ME,VA
Fluoranthene	CT,MA,NH,NY,NC,RI,ME,VA
Fluorene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorobutadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachlorocyclopentadiene	CT,MA,NH,NY,NC,RI,ME,VA
Hexachloroethane	CT,MA,NH,NY,NC,RI,ME,VA
Indeno(1,2,3-cd)pyrene	CT,MA,NH,NY,NC,RI,ME,VA
Isophorone	CT,MA,NH,NY,NC,RI,ME,VA
Naphthalene	CT,MA,NH,NY,NC,RI,ME,VA
Nitrobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
4-Nitrophenol	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodimethylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodiphenylamine	CT,MA,NH,NY,NC,RI,ME,VA
N-Nitrosodi-n-propylamine	CT,MA,NH,NY,NC,RI,ME,VA
Pentachlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylnaphthalene	NC

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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
EPA 625 in Water	
Phenanthrene	CT,MA,NH,NY,NC,RI,ME,VA
2-Methylphenol	NY,NC
Phenol	CT,MA,NH,NY,NC,RI,ME,VA
3/4-Methylphenol	NY,NC
Pyrene	CT,MA,NH,NY,NC,RI,ME,VA
1,2,4-Trichlorobenzene	CT,MA,NH,NY,NC,RI,ME,VA
2,4,6-Trichlorophenol	CT,MA,NH,NY,NC,RI,ME,VA
2-Fluorophenol	NC
SM19-22 4500 NH3 C in Water	
Ammonia as N	NY,MA,CT,RI,VA,NC,ME
SM21-22 2340C in Water	
Hardness	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 2540D in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
SM21-22 3500 Cr B in Water	
Hexavalent Chromium	NY,CT,NH,RI,ME,VA,NC
SM21-22 4500 CL G in Water	
Chlorine, Residual	CT,MA,RI,ME
SM21-22 4500 H B in Water	
pH	CT,MA,RI
SW-846 8270D in Water	
Acenaphthene	CT,NY,NC,ME,NH,VA,NJ
Acenaphthylene	CT,NY,NC,ME,NH,VA,NJ
Anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzidine	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)anthracene	CT,NY,NC,ME,NH,VA,NJ
Benzo(a)pyrene	CT,NY,NC,ME,NH,VA,NJ
Benzo(b)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Benzo(g,h,i)perylene	CT,NY,NC,ME,NH,VA,NJ
Benzo(k)fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroethyl)ether	CT,NY,NC,ME,NH,VA,NJ
Bis(2-chloroisopropyl)ether	CT,NY,NC,ME,NH,VA,NJ
Bis(2-Ethylhexyl)phthalate	CT,NY,NC,ME,NH,VA,NJ
4-Bromophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Butylbenzylphthalate	CT,NY,NC,ME,NH,VA,NJ
4-Chloro-3-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2-Chloronaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Chlorophenol	CT,NY,NC,ME,NH,VA,NJ
4-Chlorophenylphenylether	CT,NY,NC,ME,NH,VA,NJ
Chrysene	CT,NY,NC,ME,NH,VA,NJ
Dibenz(a,h)anthracene	CT,NY,NC,ME,NH,VA,NJ
Di-n-butylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
1,3-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ

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

CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
SW-846 8270D in Water	
1,4-Dichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
3,3-Dichlorobenzidine	CT,NY,NC,ME,NH,VA,NJ
2,4-Dichlorophenol	CT,NY,NC,ME,NH,VA,NJ
Diethylphthalate	CT,NY,NC,ME,NH,VA,NJ
2,4-Dimethylphenol	CT,NY,NC,ME,NH,VA,NJ
Dimethylphthalate	CT,NY,NC,ME,NH,VA,NJ
4,6-Dinitro-2-methylphenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrophenol	CT,NY,NC,ME,NH,VA,NJ
2,4-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
2,6-Dinitrotoluene	CT,NY,NC,ME,NH,VA,NJ
Di-n-octylphthalate	CT,NY,NC,ME,NH,VA,NJ
1,2-Diphenylhydrazine (as Azobenzene)	NY,NC,ME
Fluoranthene	CT,NY,NC,ME,NH,VA,NJ
Fluorene	NY,NC,ME,NH,VA,NJ
Hexachlorobenzene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorobutadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachlorocyclopentadiene	CT,NY,NC,ME,NH,VA,NJ
Hexachloroethane	CT,NY,NC,ME,NH,VA,NJ
Indeno(1,2,3-cd)pyrene	CT,NY,NC,ME,NH,VA,NJ
Isophorone	CT,NY,NC,ME,NH,VA,NJ
2-Methylnaphthalene	CT,NY,NC,ME,NH,VA,NJ
2-Methylphenol	CT,NY,NC,NH,VA,NJ
3/4-Methylphenol	CT,NY,NC,NH,VA,NJ
Naphthalene	CT,NY,NC,ME,NH,VA,NJ
Nitrobenzene	CT,NY,NC,ME,NH,VA,NJ
2-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
4-Nitrophenol	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodimethylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodiphenylamine	CT,NY,NC,ME,NH,VA,NJ
N-Nitrosodi-n-propylamine	CT,NY,NC,ME,NH,VA,NJ
Pentachlorophenol	CT,NY,NC,ME,NH,VA,NJ
Phenanthrene	CT,NY,NC,ME,NH,VA,NJ
Phenol	CT,NY,NC,ME,NH,VA,NJ
Pyrene	CT,NY,NC,ME,NH,VA,NJ
1,2,4-Trichlorobenzene	CT,NY,NC,ME,NH,VA,NJ
2,4,6-Trichlorophenol	CT,NY,NC,ME,NH,VA,NJ
2-Fluorophenol	NC,VA
Phenol-d6	VA
Nitrobenzene-d5	VA

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

Code	Description	Number	Expires
AIHA	AIHA-LAP, LLC - ISO17025:2005	100033	02/1/2018
MA	Massachusetts DEP	M-MA100	06/30/2018
CT	Connecticut Department of Publilc Health	PH-0567	09/30/2017
NY	New York State Department of Health	10899 NELAP	04/1/2018
NH-S	New Hampshire Environmental Lab	2516 NELAP	02/5/2018
RI	Rhode Island Department of Health	LAO00112	12/30/2017
NC	North Carolina Div. of Water Quality	652	12/31/2017
NJ	New Jersey DEP	MA007 NELAP	06/30/2018
FL	Florida Department of Health	E871027 NELAP	06/30/2018
VT	Vermont Department of Health Lead Laboratory	LL015036	07/30/2017
ME	State of Maine	2011028	06/9/2019
VA	Commonwealth of Virginia	460217	12/14/2017
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2017
VT-DW	Vermont Department of Health Drinking Water	VT-255716	06/12/2018

con-test ANALYTICAL LABORATORY

17F0661

http://www.contestlabs.com

Doc # 381 Rev 1_03242017

CHAIN OF CUSTODY RECORD

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

39 Spruce Street
East Longmeadow, MA 01028

Company Name: DES DEP Associates Inc.
Address: 62 Derby Street, Suite 10 Hingham, MA
Phone: (781) 749-7479
Project Name: MBC Medway Block Company
Project Location: 120 Main St
Project Number: 17-5558
Project Manager: Marvin Feldman
Con-Test Quote Name/Number:
Invoice Recipient: Terese Imyskoski
Sampled By: David J. Blackwell

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

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

Data Delivery
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: mfeld@hotmail.com
Fax To #:

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code	Conc Code	# of Containers	Preservation Code	Container Code	Hardness	NH3	Sb Total Recoverable	As Cd Cr Pb Cu Fe Hg Ni Se Ag Zn 200.8	Hexachrome
01	Receiving Waters	6/13/17	9 AM		X	O	U	1	P	P	X	X	X	X	X

ANALYSIS REQUESTED

Dissolved Metals Samples: ○ Field Filtered ○ Lab to Filter

Orthophosphate Samples: ○ Field Filtered ○ Lab to Filter

Comments: cc email djbma@verizon.net Sampled @ 78°F Temperature

See Attached List

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

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

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

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

Relinquished by: (signature) David J Blackwell 6/13/17	Date/Time: 1610 hr	
Received by: (signature) Paul Chastenay	Date/Time: 6-13-17 1557	
Relinquished by: (signature) Paul Chastenay	Date/Time: 6-13-17 1557	
Received by: (signature)	Date/Time: 6-13-17 1552	
Relinquished by: (signature)	Date/Time: 6-13-17 18:30	
Received by: (signature) 4.6C 6/13/17	Date/Time: 1830	

Detection Limit Requirements
MA: RGP
~~CT~~ DEP ~~NY DES~~
CT:
Other: EPA RGP NPDES

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

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NELAC and AIHA-LAP, LLC Accredited

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

Other
☐ Chromatogram
☐ *AIHA-LAP,LLC*

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

Table of Contents

con-test ANALYTICAL LABORATORY

Phone: 413-525-2332
Fax: 413-525-6405
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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Company Name: PES Associates Inc
Address: 62 Derby St ~~Boston~~ Hingham MA
Phone: (781) 407-7777
Project Name: MBC - Medway Block Company
Project Location: 120 Main St. Medway, MA
Project Number: 17-5558
Project Manager: Marnin Feldman
Con-Test Quote Name/Number:
Invoice Recipient: Terese Traskoski
Sampled By: David Blackwell

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

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

Data Delivery
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: mfeld@hotmail.com
Fax To #:

ANALYSIS REQUESTED

	608 1664	625 Standard / PAH SIM	624, BTEX, Naph, MBTE, Ethanol	Cyanide 4500	Metals 200.8 Ag Zn	As Sb Cd Cr III Cr VI Cu Fe Pb Hg Ni Se	See attached list*	pH, Hardness	Chloride TRC TSS	NH3	Hexachrome
# of Containers	2	4	6	1	1 →			1	1	1	1
2 Preservation Code	S	I	H	X	N →			I	I	S	I
3 Container Code	A	A	V	P	P →			P	P	P	P

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	1 Matrix Code	Conc Code	608 1664	625	624	Cyanide	Metals	As Sb ...	See attached list	pH, Hardness	Chloride TRC TSS	NH3	Hexachrome
02	Influent	6/13/17	9:30AM		X	WW	U	X	X	X	X	X	X		X	X	X	X

Dissolved Metals Samples
○ Field Filtered
○ Lab to Filter

Orthophosphate Samples
○ Field Filtered
○ Lab to Filter

Comments: cc email djbma@verizon.net
Sampled Temperature 62°F
See Attached List*

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

	Date/Time:
Relinquished by: (signature) David J Blackwell 6/13/17	16:05
Received by: (signature) Paul Chastney 6-13-17	15:58
Relinquished by: (signature) Paul Chastney 6-13-17	15:58
Received by: (signature) 6-13-17	15:58
Relinquished by: (signature) 6-13-17	18:30
Received by: (signature) 4.6°C 6/13/17	1830

Detection Limit Requirements
MA: RGP
DEP
CT:
RGP
Other: EPA NPDES

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

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NELAC and AIHA-LAP, LLC Accredited

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

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

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

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I = Iced
H = HCL
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CHAIN OF CUSTODY RECORD

Doc # 381 Rev 1_03242017

39 Spruce Street
East Longmeadow, MA 01028

Company Name: PES Associates Inc (DES crossed out)
Address: 62 Derby St, Suite 10, Hingham MA
Phone: (781) 497-7777
Project Name: MBC – Medway Block Company
Project Location: 120 Main St. Medway, MA
Project Number: 17-5558
Project Manager: Marvin Feldman
Con-Test Quote Name/Number:
Invoice Recipient: Terese Truskoski
Sampled By: David

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

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

Data Delivery
Format: PDF ☒ EXCEL ☒
Other:
CLP Like Data Pkg Required: ☐
Email To: mfeld@hotmail.com
Fax To #:

	8270 SIM	608/1664	pH Hardness	chloride TSS TRC	Metals Fe Ni						
# of Containers	2	2	1	1	1						
Preservation Code [2]	I	S	I	I	N						
Container Code [3]	A	A	P	P	P						

ANALYSIS REQUESTED

Con-Test Work Order#	Client Sample ID / Description	Beginning Date/Time	Ending Date/Time	Composite	Grab	Matrix Code [1]	Conc Code	8270 SIM	608/1664	pH Hardness	chloride TSS TRC	Metals Fe Ni
03	Effluent	6/13/17	9:30AM		X	WW	U	X	X	X	X	X

Dissolved Metals Samples
O Field Filtered
O Lab to Filter

Orthophosphate Samples
O Field Filtered
O Lab to Filter

[1] **Matrix Codes:**
GW = Ground Water
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O = Other (please define)

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

Comments: cc: email djbma@verizon.net
Sampling Temperature 40°F

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

Signature	Date/Time
Relinquished by: (signature) [signature] 6/13/17	16:00hr
Received by: (signature) [signature] 6-13-17	15:58
Relinquished by: (signature) [signature] 6-13-17	15:58
Received by: (signature) [signature]	6-13-17 16:00
Relinquished by: (signature) [signature]	6-13-17 18:30
Received by: (signature) [signature] 4.6°C 6/13/17	1830

Detection Limit Requirements
MA: DEP RGP
CT:
Other: EPA NPDES

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

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

Other
☐ Chromatogram
☐ AIHA-LAP,LLC

PCB ONLY
☐ Soxhlet
☐ Non Soxhlet

McQuay RGP Testing 2017 (for info.)

Influent

Inorganic (a)

NH_3

Chloride

Total Residual Chlorine

Total Suspended Solids

Sb	Total Recoverable
As	"
Cd	"
Cr III	"
Cr VI	"
Cu	"
Fe	"
Pb	"
Hg	"
Ni	"
Se	"
Ag	"
Zn	"
CN	
Hardness	
pH	

Non Halogenated VOCs (b)

Total BTEX

Benzene

1,4 Dioxane

Acetone

Phenol

Halogenated VOC (c)

Carbon Tetrachloride

1,2 Dichlorobenzene

1,3 "

1,4 "

Total Dichlorobenzene

1,1 Dichloroethane

1,2 Dichloroethane

ethylene dibromide

Methylene chloride

1,1,1 Trichloroethane

1,1,2 trichloroethane

Trichloroethylene

cis 1,2, Dichloroethylene

Vinyl chloride

D. Non Halogenated SVOC (d)

Total phthalates

Diethylhexyl phthalate

Total Grp 1 PAH

Benzo (a) anthracene

Benzo (a) Pyrene

Non Halogenated SVOC (cont'd)
Benzo(b) fluoranthene
Benzo(k) fluoranthene
Chrysene
Dibenzo(a,h) anthracene
Indeno(1,2,3cd) pyrene
Total group II PAHs
Naphthalene

Fuel Parameters (f)
Total ~~TPH~~
Ethanol
MTBE
Tert Butyl Alcohol
Tert Amyl Methyl Ether

EFFLUENT
Regular ROP parameters (monthly) include pH
Hardness

Receiving Waters (Upstream of Municipal Discharge Chicken Creek)
pH
Temp
Hardness
NH_3
Sb Total Recoverable
As "
Cd "
CR III "

Receiving Waters (continued)

Cr VI	Total Recoverable
Cu	"
Fe	"
Pb	"
Hg	"
Ni	"
Se	"
Ag	"
Zn	"

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F: 413-525-6405
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Doc# 277 Rev 5 2017

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

Client PES

Received By RLF Date 6/13/17 Time 1830

How were the samples received? In Cooler T No Cooler ____ On Ice T No Ice ____
Direct From Sample ____ Ambient ____ Melted Ice ____

Were samples within Temperature? 2-6°C T By Gun # 7 Actual Temp - 4.9 | 4.6 | 3.9°C
By Blank # ____ Actual Temp - ____

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

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

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

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

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

Are Sample labels filled out and legible? T

Are there Lab to Filters? F Who was notified? NA

Are there Rushes? F Who was notified? NA

Are there Short Holds? T Who was notified? DAVID

Is there enough Volume? T

Is there Headspace where applicable? T MS/MSD? NA

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

Were trip blanks received? F On COC? NA

Do All Samples Have the proper pH? Acid T Base T

Vials	#	Containers:	#		#		#
Unp-		1 Liter Amb.	10	1 Liter Plastic	2	16 oz Amb.	
HCL-	10	500 mL Amb.		500 mL Plastic	4	8oz Amb/Clear	
Meoh-		250 mL Amb.		250 mL Plastic	7	4oz Amb/Clear	
Bisulfate-		Col./Bacteria		Flashpoint		2oz Amb/Clear	
DI-		Other Plastic		Other Glass		Encore	
Thiosulfate-		SOC Kit		Plastic Bag		Frozen:	
Sulfuric-		Perchlorate		Ziplock			

Unused Media

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

Comments:

Medway Block Co, Inc

120 Main Street Medway, MA

2017 EPA RGP NOI MA 910224

Tolcide PS20A Information

Name of Compound: Tolcide PS20A

Manufacturer: Solvay USA NOVECARE

Formula: {(HOCH2)4P}2(SO4)

CAS#: 55566-30-8

Use: Biocide to reduce iron eating bacteria and iron sequestering agent

Aquatic Toxicity LC50: See attached *Solvay* MSDS. Re pollutant contribution, "in systems using activated carbon, THPS is fully absorbed and degradation via hydrolysis is catalyzed by the activated carbon, resulting in no discharge of THPS whatsoever." See Redux Info Sheet attached.

Date in Use: 2006, approved in 2005 RGP issued 5/12/2006 and 2010 RGP dated 2/10/11.

Usage: A *Milton Roy* electrical metering pump with a maximum delivery capacity of 1.0 gal per hour is powered when the extraction well pump is in operation and delivers the PS20A (20% solution of the chemical in water) to the oil water separator. The average concentration added since 1/1/2015 is approximately 10.3 ppm based on the dry chemical and quantity of water treated with short term peak use estimated at 13.39 ppm.

Compatibility Risks for Storage: Avoid

- Strong acids
- Strong bases
- Strong oxidizing agents
- Strong reducing agents.

None of the above in proximity. Material stored in closed, plastic 15 gallon drums.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	TOLCIDE PS 20 A
FIFRA Registration number	:	4564-18

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance / Mixture	:	Specific use(s): FIFRA regulated use only., Biocidal product

1.3 Details of the supplier of the safety data sheet

Company	:	Solvay USA Inc., NOVECARE 8 Cedar Brook Drive Cranbury, NJ, 08512-7500, US Telephone number: 800-973-7873

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Acute toxicity, Category 3	H331: Toxic if inhaled.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :

Signal Word : Danger

Hazard Statements:

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H361	Suspected of damaging fertility or the unborn child.

Precautionary Statements:

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.

Response

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER or doctor/ physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

H401: Toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable, this product is a mixture.

3.2 Mixture

Chemical nature : Aqueous solution

Hazardous Ingredients and Impurities

Chemical Name	Identification number CAS-No.	Concentration [%]
Tetrakis(Hydroxymethyl) Phosphonium Sulfate	55566-30-8	18 - 22

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Show this material safety data sheet to the doctor in attendance.
First responder needs to protect himself.
Place affected apparel in a sealed bag for subsequent decontamination.
Plan first aid action before beginning work with this product.
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

If inhaled : Move to fresh air.
Keep at rest.
Consult a physician.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with plenty of water.
Wash immediately and thoroughly for a prolonged period (at least 15 minutes).
Get medical attention if irritation develops and persists.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get immediate medical advice/ attention.

Ingestion : Do not induce vomiting without medical advice.
If victim is conscious:
Rinse mouth with water.
Keep at rest.
Never give anything by mouth to an unconscious person.
Do not leave the victim unattended.
Vomiting may occur spontaneously
Risk of product entering the lungs on vomiting after ingestion.
Lay victim on side.
Get immediate medical advice/ attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Lachrymation Ingestion may provoke the following symptoms: Nausea Liver disorders
Risks	:	Skin contact may aggravate existing skin disease

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. There is no specific antidote available.

SECTION 5: Firefighting measures

Flash point	:	Not applicable (aqueous liquid).
Autoignition temperature	:	no data available
Flammability / Explosive limit	:	no data available

5.1 Extinguishing media

Suitable extinguishing media	:	In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction.
Unsuitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Harmful or toxic vapors are released. Do not allow run-off from fire fighting to enter drains or water courses. Under fire conditions: Will burn (following evaporation of water) Hazardous decomposition products Phosphorus trihydride (phosphine) Oxides of phosphorus Sulfur oxides Carbon oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Personal protective equipment comprising: suitable protective gloves, safety

		goggles and protective clothing Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
Specific fire fighting methods	:	Standard procedure for chemical fires.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures	:	Do not breathe spray. Avoid contact with the skin and the eyes. Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions	:	Do not allow uncontrolled discharge of product into the environment. Contain the spilled material by diking. Do not flush into surface water or sanitary sewer system. Do not let product enter drains. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

Recovery	:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.
	:	Never return spills in original containers for re-use.
Decontamination / cleaning	:	Wash nonrecoverable remainder with large amounts of water. Recover the cleaning water for subsequent disposal.
	:	Decontaminate tools, equipment and personal protective equipment in a segregated area.
Disposal	:	Dispose of contents/ container to an approved waste disposal plant. Dispose of in accordance with local regulations.

6.4 Reference to other sections

Reference to other sections	:	For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	Provide adequate ventilation.
Advice on safe handling and usage	:	Avoid exposure - obtain special instructions before use. This product must only be handled by skilled operators. Reduce the duration of exposure to the minimum required. Avoid formation of aerosol. Avoid the formation or spread of mists in the atmosphere. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation/personal protection. Do NOT handle without gloves.
Hygiene measures	:	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures for storage	:	Prevent unauthorized access. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions

Recommended	:	Keep in a dry, cool and well-ventilated place. Keep container tightly closed.
To be avoided	:	Keep away from incompatible materials to be indicated by the manufacturer Keep away from open flames, hot surfaces and sources of ignition.
Incompatible products	:	Do not mix with incompatible materials (See list, section 10).

Packaging Measures

Packaging Measures	:	Polyethylene or polypropylene drums., Stainless steel
Packaging materials—Recommended	:	Plastic materials (polyethylene).
Packaging materials—To be avoided	:	Ordinary steel.

Storage stability

Storage temperature	:	no data available
Other data	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Ingredients with workplace control parameters

Ingredients	Value type	Value	Basis
Tetrakis(Hydroxymethyl) Phosphonium Sulfate	TWA	2 mg/m3	ACGIH
	Central nervous system, 2014 Adoption, Not classifiable as a human carcinogen		

8.2 Exposure controls

Control measures

Engineering measures : Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :

Avoid splashes.
Effective exhaust ventilation system
Facilities and equipment easily cleanable.
Separate rooms are required for washing, showering and changing clothes.

Personal protective equipment

Respiratory protection	:	When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Use a respirator with an approved filter if a risk assessment indicates this is necessary.
Hand protection	:	Glove material: Polyvinyl alcohol or nitrile- butyl-rubber gloves Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through the use of: Safety glasses with side-shields In case of contact through splashing: Wear face-shield and protective suit.
Skin and body protection	:	Wear suitable protective clothing, gloves and eye/face protection. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Remove and wash contaminated apparel.
Hygiene measures	:	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
Protective measures	:	Always have on hand a first-aid kit, together with proper instructions. Ensure that eyewash stations and safety showers are close to the workstation location. The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	:	Physical state: liquid Color: pale yellow to pale pink
Odor	:	characteristic
Odor Threshold	:	no data available
pH	:	3.0 - 6.0
Freezing point	:	32 °F (0 °C)
Boiling point/boiling range	:	227.3 °F (108.5 °C) (759.81 mmHg (1,013.00 hPa))
Flash point	:	Not applicable (aqueous liquid).
Evaporation rate (Butylacetate = 1)	:	no data available
Flammability (solid, gas)	:	no data available
Flammability (liquids)	:	no data available
Flammability / Explosive limit	:	no data available
Autoignition temperature	:	no data available
Vapor pressure	:	no data available
Vapor density	:	no data available
Density	:	1.08 - 1.13 g/cm3 (68 °F (20 °C))
Solubility	:	Water solubility : completely miscible Solubility in other solvents: not determined
Partition coefficient: n-octanol/water	:	log Pow: -9.8 Structure-activity relationship (SAR), estimated
Thermal decomposition	:	> 320 °F (160 °C)
Viscosity	:	no data available

Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

Molecular weight	:	406.3 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactivity	:	Stable at normal ambient temperature and pressure.

10.2 Chemical stability

Chemical stability	:	Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No decomposition if stored and applied as directed.

Polymerization	:	Hazardous polymerization does not occur.

10.4 Conditions to avoid

Conditions to avoid	:	No dangerous reaction known under conditions of normal use.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases Strong oxidizing agents Strong reducing agents.

10.6 Hazardous decomposition products

Decomposition products	:	Oxides of phosphorus Sulfur oxides Hydrogen Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). PHOSPHINE

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	:	LD50 : 575 mg/kg - Rat , for males and females Unpublished internal reports THPS 75% Not classified as harmful if swallowed According to the classification criteria for mixtures.
Acute inhalation toxicity	:	LC50 - 4 h (Dust) : 0.59 mg/l - Rat , for males and females Published data THPS 75% Humans Symptoms: Watering of the eyes Harmful by inhalation. According to the classification criteria for mixtures. According to the data on the components
Acute dermal toxicity	:	LD50 : > 2,000 mg/kg - Rat , for males and females Unpublished internal reports THPS 75% Not classified as harmful by contact with skin According to the classification criteria for mixtures. According to the data on the components
Acute toxicity (other routes of administration)	:	no data available

Skin corrosion/irritation

Skin irritation	:	Rabbit No skin irritation Method: OECD Test Guideline 404 Unpublished internal reports THPS 75%

Serious eye damage/eye irritation

Eye irritation	:	Risk of serious damage to eyes. Method: OECD Test Guideline 405 Extremely irritating to rabbits on ocular application. Unpublished internal reports THPS 75%

Respiratory or skin sensitization

Sensitization : Magnusson and Kligman method
May cause sensitization by skin contact.
Unpublished internal reports
THPS 75%

Mutagenicity

Genotoxicity in vitro : Product is not considered to be genotoxic

Mutagenicity (Salmonella typhimurium - reverse mutation assay)
with and without metabolic activation
negative
Unpublished internal reports
THPS 75%

Mutagenicity (in vitro mammalian cytogenetic test)
Strain: CHO
with and without metabolic activation
positive
Unpublished internal reports
THPS 75%

UDS test
Strain: Hepatocyte (primary culture)
negative
Unpublished internal reports
THPS 75%

Mouse lymphoma test / TK
with and without metabolic activation
positive
Unpublished internal reports
THPS 75%

Genotoxicity in vivo : Product is not considered to be genotoxic

Rodent dominant Lethal test - Rat
negative
Unpublished internal reports
THPS 75%

In vivo micronucleus test - Mouse
negative
Unpublished internal reports
THPS 75%

Carcinogenicity

Carcinogenicity : Rat Oral exposure
Animal testing did not show any carcinogenic effects.
Published data
THPS 75%

Mouse Oral exposure
Animal testing did not show any carcinogenic effects.
Published data
THPS 75%

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility : Fertility study 2 generations - Rat
Oral exposure
no impairment of fertility has been observed
Unpublished internal reports
THPS 75%

Developmental Toxicity/Teratogenicity : Rat
Oral exposure
NOEL teratogenicity: 30 mg/kg
NOEL maternal: 15 mg/kg

Unpublished internal reports
THPS 75%

Rabbit
Oral exposure
NOEL teratogenicity: 18 mg/kg
NOEL maternal: 18 mg/kg

Effects on development were observed
May cause harm to the unborn child.
Unpublished internal reports
THPS 75%

STOT

STOT-single exposure

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.
internal evaluation

STOT-repeated exposure : Oral exposure 90 Days - Rat , for males and females
NOEL: 1 mg/kg
Liver toxicity
Unpublished internal reports

THPS 75%

Neurological effects

Neurological effects : Screening biochemistry test kit for cholinesterase activity inhibition, The product does not induce inhibition, THPS 75%

Experience with human exposure

Experience with human exposure : Inhalation : Not classified as irritating to respiratory system.

Carcinogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : The product is not considered to be carcinogenic.

Teratogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : Suspected human reproductive toxicant

Aspiration toxicity

Aspiration toxicity : no data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish : LC50 - 96 h : 119 mg/l - Oncorhynchus mykiss (rainbow trout)
Unpublished internal reports
THPS 75%

LC50 - 96 h : 93 mg/l - Lepomis macrochirus (Bluegill sunfish)
Unpublished internal reports
THPS 75%

Acute toxicity to daphnia and other aquatic invertebrates. : EC50 - 48 h : 15.1 mg/l - Daphnia magna (Water flea)
THPS 75%
Unpublished internal reports

: EC50 - 48 h : 0.4 mg/l - Crustacean: Acartia tonsa
THPS 75%
Unpublished internal reports

Toxicity to aquatic plants	:	EC50 - 96 h : 0.66 mg/l - Pseudokirchneriella subcapitata (microalgae) THPS 75% Unpublished internal reports
	:	EC50 - 96 h : 0.16 mg/l - Skeletonema costatum (marine diatom) THPS 75% Unpublished internal reports
	:	NOEC - 96 h : 0.059 mg/l - Skeletonema costatum (marine diatom) THPS 75% Unpublished internal reports
Toxicity to microorganisms	:	EC50 - 3 h : 24 mg/l - activated sludge THPS 75% Unpublished internal reports

Chronic toxicity to fish

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	NOEC: 0.83 mg/l - 32 Days - Pimephales promelas (fathead minnow) flow-through test Method: OECD Test Guideline 210 Harmful to fish with long lasting effects. Unpublished internal reports

Chronic toxicity to daphnia and other aquatic invertebrates.

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	NOEC: 0.0242 mg/l - 21 Days - Daphnia magna (Water flea) semi-static test Method: OECD Test Guideline 202 Toxic to aquatic invertebrates with long lasting effects. Unpublished internal reports

Sediment compartment

Toxicity to benthic organims

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	EC50: 619 Exposure duration: 5 Days Unpublished internal reports

Terrestrial Compartment

Toxicity to soil dwelling organisms

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	LC50: 960 mg/kg - 14 Days - Eisenia fetida (earthworms) Method: OECD Test Guideline 207

Toxicity to terrestrial plants

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	EC50: 102 mg/kg - 14 Days Method: OECD Test Guideline 208

Ecotoxicity assessment

Acute aquatic toxicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Very toxic to aquatic life.

Chronic aquatic toxicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Toxic to aquatic life with long lasting effects.

M-Factor

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Acute aquatic toxicity = 1 (according to the Globally Harmonized System (GHS))

12.2 Persistence and degradability

Biodegradability

Biodegradability

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Ultimate aerobic biodegradability Method: Simulation study 70 % - 21 d Readily biodegradable. US EPA FIFRA, Subdivision N, § 162-4 Unpublished internal reports anaerobic Method: Simulation study 60 % - 30 d US EPA FIFRA, Subdivision N, § 162-4 Unpublished internal reports

Stability

Stability in water

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	DT50: Half-life value: 131 Days (77 °F (25 °C)) pH: 5.0 Method: according to a standardized method Unpublished internal reports DT50: Half-life value: 72 Days (77 °F (25 °C)) pH: 7.0 Method: according to a standardized method Unpublished internal reports DT50: Half-life value: 7 Days (77 °F (25 °C)) pH: 9.0 Method: according to a standardized method Unpublished internal reports

Photodegradation

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Sensitizer: OH Concentration sensitizer in molecule/cm3: 1,500,000 1/cm3 Rate constant in cm3 / molecule*s: 2.7E-11 cm3/s Half-life indirect photolysis: 0.4 Days Structure-activity relationship (SAR) Published data

Degradability assessment

Degradability assessment

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

Adsorption potential (Koc)

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Log Koc: 2.2 Moderately mobile in soils Unpublished internal reports Adsorption/Soil Koc: 153 Method: OECD Test Guideline 106 THPS 75% Mobile in soils Unpublished internal reports

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Advice on Disposal	:	Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.
Waste Code	:	EPA: Hazardous Waste – NO

Advice on cleaning and disposal of packaging

Advice	:	Take preliminary precautions based on the dangerous properties of the product. Empty the packaging completely prior to disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal. The user's attention is drawn to the possible existence of local regulations regarding disposal.

SECTION 14: Transport information

DOT
not regulated

TDG
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

United States TSCA Inventory	:	e (special case) This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
Canadian Domestic Substances List (DSL)	:	YES (positive listing) All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS)	:	YES (positive listing) On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	:	n (Negative listing) Not in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	:	n (Negative listing) Not in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	:	n (Negative listing) Not in compliance with the inventory

15.2 Federal Regulations

SARA 311/312 Hazards

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	yes
Chronic Health Hazard	yes

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb
Acrylic Acid	79-10-7	5000 lb

SARA 304 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb

SARA 302 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb

15.3 State Regulations

California Prop 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
Formaldehyde

No Significant Risk Levels (NSRLs) have been established for the following:
Formaldehyde
Value : 40 micrograms per day

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	:	2 moderate
Flammability	:	0 minimal
Instability or Reactivity	:	1 slight

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	:	2 moderate
Flammability	:	0 minimal
Reactivity	:	1 slight

Further information

Date Prepared	:	02/24/2015
Further information	:	Product classified under the US GHS format.

Key or legend to abbreviations and acronyms used in the safety data sheet

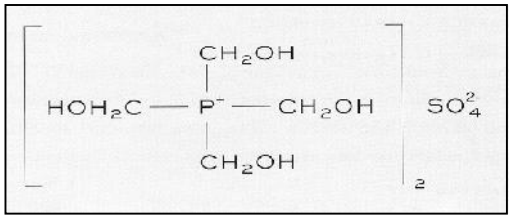
TWA	:	8-hour, time-weighted average
ACGIH	:	American Conference of Governmental Industrial Hygienists
OSHA	:	Occupational Safety and Health Administration
WHMIS	:	Workplace Hazardous Materials Information System
NTP	:	National Toxicology Program
IARC	:	International Agency for Research on Cancer
	:	Solvay Acceptable Exposure Limit
NIOSH	:	National Institute for Occupational Safety and Health
NFPA	:	National Fire Protection Association
HMIS	:	Hazardous Materials Identification System (Paint & Coating)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.

REDUX TECHNOLOGY®
Division of Azure Water Services, LLC

20% THPS
Product Information

20% THPS is a broad spectrum non-oxidzing bioicde, whose use in the groundwater remediation market was pioneered by Redux Technology. The product contains the active ingredient tetrakishydroxymethyl phosphonium sulfate (THPS), whose chemical structure is illustrated below.



Key features of THPS, which make it application in remedial systems ideal include:

- While it is a potent microbiocide, it has a favourable environmental profile
- It has a compact molecular structure, important for rapid biocidal performance
- It is non-foaming, non-corrosive, effective over wide pH range and free of halogens or metals

THPS is fast-acting and rapidly degrades to non-toxic Trishydroxymethylphosphine Oxide (THPO), which subsequently degrades to simple organic constituents. Relevant toxicity data for these compounds follows:

Eco-toxicity of Redux THPS to aquatic species:

Freshwater Species			Marine Species		
Rainbow trout	96 Hr. LC_{50}	119 mg/1	Juvenile plaice	96 Hr. LC_{50}	86 mg/l
Bluegill sunfish	96 Hr. LC_{50}	93 mg/1	Brown shrimp	96 Hr. LC_{50}	340 mg/l
Daphnia magna	48 Hr. EC_{50}	19.4 mg/1			

THPS is readily biodegradable (as defined by US EPA, FIFRA 40 CFR, Part 158, Sub-division N, Series 162-4) and does not bio-accumulate (Octanol-water partition co-efficient is negative).

Eco-toxicity of THPO to aquatic species:

Rainbow trout	96 hr. LC_{50}	> 18,700 mg/1
Daphnia magna	48 hr. EC_{50}	> 3700 mg/1
Skeletonema costatum	72 hr. EC_{50}	> 7800 mg/

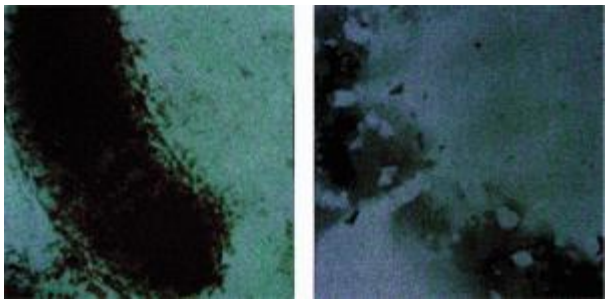
The unique combination of high performance coupled with a favourable environmental profile is cornerstone to a growing portfolio of registrations and awards, which include:

U.S. Presidential Green Chemistry Challenge Award
Satisfies criteria for Nordic Region White Swan Approval
Approved by Western Australian Environmental protection Agency
U.S. Environmental Protection Agency
U.K. Department of Environmental Offshore Chemical Notification Scheme
German BGVV Approval

280 Callegari Drive, West Haven, Connecticut 06516
Phone: 203-933-9071 Fax: 203-933-1751 www.reduxtech.com

Mechanism of biocidal action:

Extensive research into the mode of action of THPS has conclusively shown that the product causes rapid and severe damage to the cell membranes of target organisms.



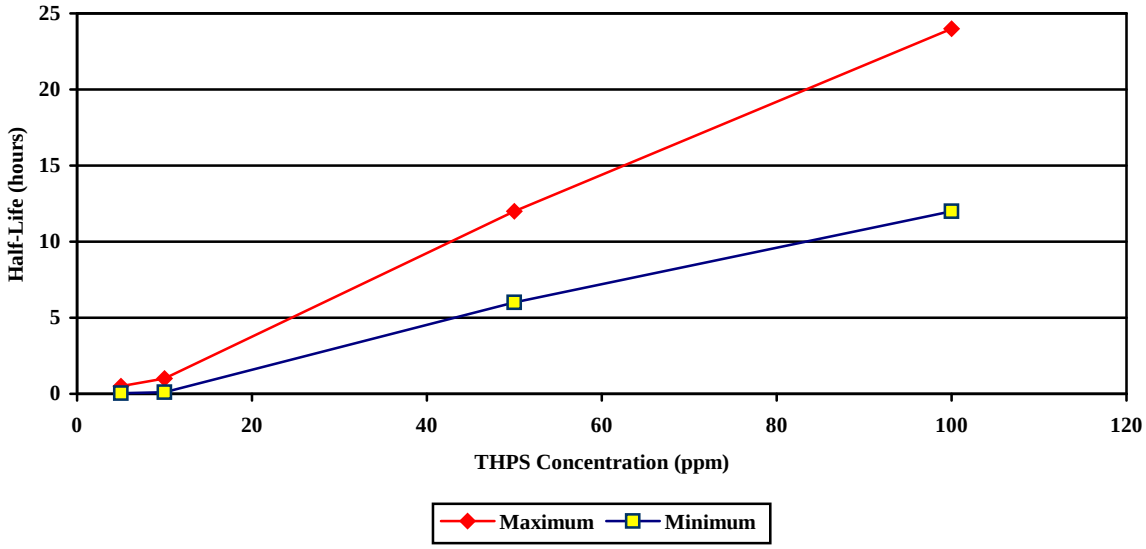
Scanning electron microscopy photos show the destructive action of THPS (left, before application; right, after) on *Desulfovibrio vulgaris*, a bacterium that generates hydrogen sulfide

Significant disruption to the integrity of the bacteria has occurred. Analysis of the surrounding water phase has detected nucleic acids indicating fundamental damage to the cell membranes.

THPS degradation rate, deactivation and sorption

Oxidation is the major degradation mechanism for THPS and the resulting degradation product is trihydroxymethylphosphine oxide, which is essentially non-toxic and subsequently degrades in natural aerated environments to water, carbon dioxide and phosphate salts. THPS can also be degraded readily and rapidly using bleach (1 bleach : 5 THPS) or hydrogen peroxide (1 peroxide : 12 THPS). In an aerated system, THPS half-life ranges from several minutes at low ppm concentrations, up to 24 hours at high concentrations.

Reported Half-Life of THPS in Aerobic Systems



In systems using activated carbon, THPS is fully absorbed and degradation via hydrolysis is catalyzed by the activated carbon, resulting in no discharge of THPS whatsoever.

280 Callegari Drive, West Haven, Connecticut 06516
Phone: 203-933-9071 Fax: 203-933-1751 www.reduxtech.com

PRODUCT DATA

TOLCIDE® PS20A
COOLING and PROCESS WATER MICROBIOCIDE

DESCRIPTION AND USE

TOLCIDE PS20A is a broad-spectrum, fast acting microbiocide blended with a non-foaming biodispersant applicable to a wide variety of cooling and process water types. This microbiocide has use applications including open & closed cooling recirculating water systems, air washers, paper mill systems, oil & gas field applications and various process heat transfer systems. The microbiocide chemistry, tetrakis (hydroxymethyl) phosphonium sulfate (THPS), is an effective bacteriacide in controlling aerobic and anaerobic bacteria (particularly SRB-types) and slime forming bacteria. Also, TOLCIDE PS20A is effective in controlling algae.

TOLCIDE PS20A can be fed in combination with certain chemistries, but is not compatible fed in the presence of halogens, glutaraldehyde, and DBNPA.

- Environmentally friendly – winner of the "Green Chemistry Challenge" award.
- Functions over a wide pH range particularly between pH 6.5 - 9.5.
- Does **NOT** react with conventional inhibitors and anionic dispersants used in cooling and process systems.
- Does **NOT** cause objectionable foaming in well treated systems.
- NOTE: foam can occur in "dirty" systems as excessive biofilm is penetrated and released. Antifoam is recommended for use in applications where biofouling may be present.

CHEMICAL FEEDING AND CONTROL

When a system is noticeably fouled, TOLCIDE PS20A should be slug dosed to establish a concentration of 200 - 600 ppm (as product) in the recirculating water (i.e. 24 - 72 fl. ozs TOLCIDE PS20A/1000 gals. contained water) and repeat until control is obtained. Once control is evident, a dosage of 100 - 300 ppm product (12 - 36 fl. ozs TOLCIDE PS20A/1000 gals.) several times weekly will normally maintain control unless unusual conditions develop. There are various microbiological and fouling monitoring methods. Specific federate, monitoring methods and start-up precautions must be specified by the technical service representative.

TYPICAL PROPERTIES:

Appearance	Clear liquid
Odor	Characteristic
Tetrakis(hydroxymethyl) phosphonium sulfate	20%
Specific gravity	1.10 @ 68 deg. F
pH (@72 deg.F)	3.0 to 6.0
Flash point	Non-flammable
Freeze point	-3°C (27°F)

SAFETY AND HANDLING

TOLCIDE PS20A may be toxic by ingestion; may cause nausea, vomiting. Wash mouth out with water. GET IMMEDIATE MEDICAL ATTENTION. Contact with eyes causes severe irritation or burns. If eyes are contacted, immediately flush with clear water for 15 minutes and get medical attention. Inhalation can be irritating to the respiratory tract, remove victim to fresh air. If skin is contacted, immediately wash with soap and water. Change and launder contaminated clothing before reuse. The use of goggles or face shield and rubber gloves when handling this product is recommended. For more information, consult the Material Safety Data Sheet provided with this product.

PACKAGING

TOLCIDE PS20A is packaged in 275 gallon one-way totes, 55, 30, 15 gallon plastic drums and 5 gallon pails.

Outlook Mail

marnin feldman

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2017 EPA RGP Permit Renewal for 120 Main Street, medway, MA

Christine Vaccaro - NOAA Federal <christine.vaccaro@noaa.gov>

Reply |

Today, 10:10 AM
You

There are no listed species in the vicinity of your discharge. Please review our website for the most recent updates for future projects:
[goog_1230621758]
https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html

Species Information and Maps :: Greater Atlantic Regional ...
www.greateratlantic.fisheries.noaa.gov

ESA Listed Species Maps. Our endangered species maps are intended to aid Federal action agencies and the public during their section 7 consultation ...

Chris Vaccaro
Fisheries Biologist
Protected Resources Division
NOAA Fisheries, Greater Atlantic Region
Gloucester, MA
Phone: 978-281-9167
Email: christine.vaccaro@noaa.gov

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marnin feldman

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RE: Renewal of Existing 2010 EPA Remediation General Permit 120 Main Street, Medway, MA

GL Glorioso, Lauren (FWE) <lauren.glorioso@state.ma.us>

Reply |

Today, 3:19 PM
You

This site is not currently mapped as Priority Habitat for state-listed rare species, therefore, no additional filing is required with our office pursuant to the Massachusetts Endangered Species Act (MESA).

Sincerely,
Lauren Glorioso
Endangered Species Review Biologist
Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6361 | f: (508) 389-7890
mass.gov/masswildlife | facebook.com/masswildlife

From: marnin feldman [mailto:mfeld@hotmail.com]
Sent: Monday, June 12, 2017 12:12 PM
To: Glorioso, Lauren (FWE)
Subject: Renewal of Existing 2010 EPA Remediation General Permit 120 Main Street, Medway, MA

.
Attached is EPA Endangered Species Email we received from U.S. Fish & Wildlife Service.
Also attached is GIS map of site. We are discharging treated groundwater from target to Medway municipal stormwater at 120 Main Street which follows Main Street underground southwest to Cottage Street, proceeds south on Cottage and then west on Evergreen Street with its final destination to Chicken Brook.
Can you please confirm that conditions are the same for endangered state endangered species and no review is required.
Would appreciate your response asap.

Marnin Feldman

Marnin Feldman
Senior Project Manager
PES Associates
62 Derby Street
Suite 10
Hingham, MA 02043
Phone: 781-407-7777
Fax : 781-407-0007
Cell-617-834-4108
Home Office -978-774-1939

United States Department of the Interior

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

In Reply Refer To: June 02, 2017
Consultation Code: 05E1NE00-2017-SLI-1753
Event Code: 05E1NE00-2017-E-03838
Project Name: 2017 EPA RGP Permit (renewal of current 2010 permit)

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: 05E1NE00-2017-SLI-1753

Event Code: 05E1NE00-2017-E-03838

Project Name: 2017 EPA RGP Permit (renewal of current 2010 permit)

Project Type: ** OTHER **

Project Description: Treated groundwater is discharge at maximum of 10 gallons per minute where it enters municipal storm sewer system and follows Main Street southwest to Cottage Street, then west along Evergreen Street and then discharges via swale to Chicken Brook at curve in road where Evergreen turns north to rejoin main street

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.1479098945745N71.42258889189893W

Counties: Norfolk, MA

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on your 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. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area. Please contact the designated FWS office if you have questions.

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.

Outlook Mail

marnin feldman

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RE: Renewal of Existing 2010 EPA Remediation General Permit 120 Main Street, Medway, MA

GL Glorioso, Lauren (FWE) <lauren.glorioso@state.ma.us>

Reply |

Mon 6/12, 3:19 PM
You

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Sincerely,
Lauren Glorioso
Endangered Species Review Biologist
Natural Heritage & Endangered Species Program
Division of Fisheries & Wildlife
1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6361 | f: (508) 389-7890
mass.gov/masswildlife | facebook.com/masswildlife

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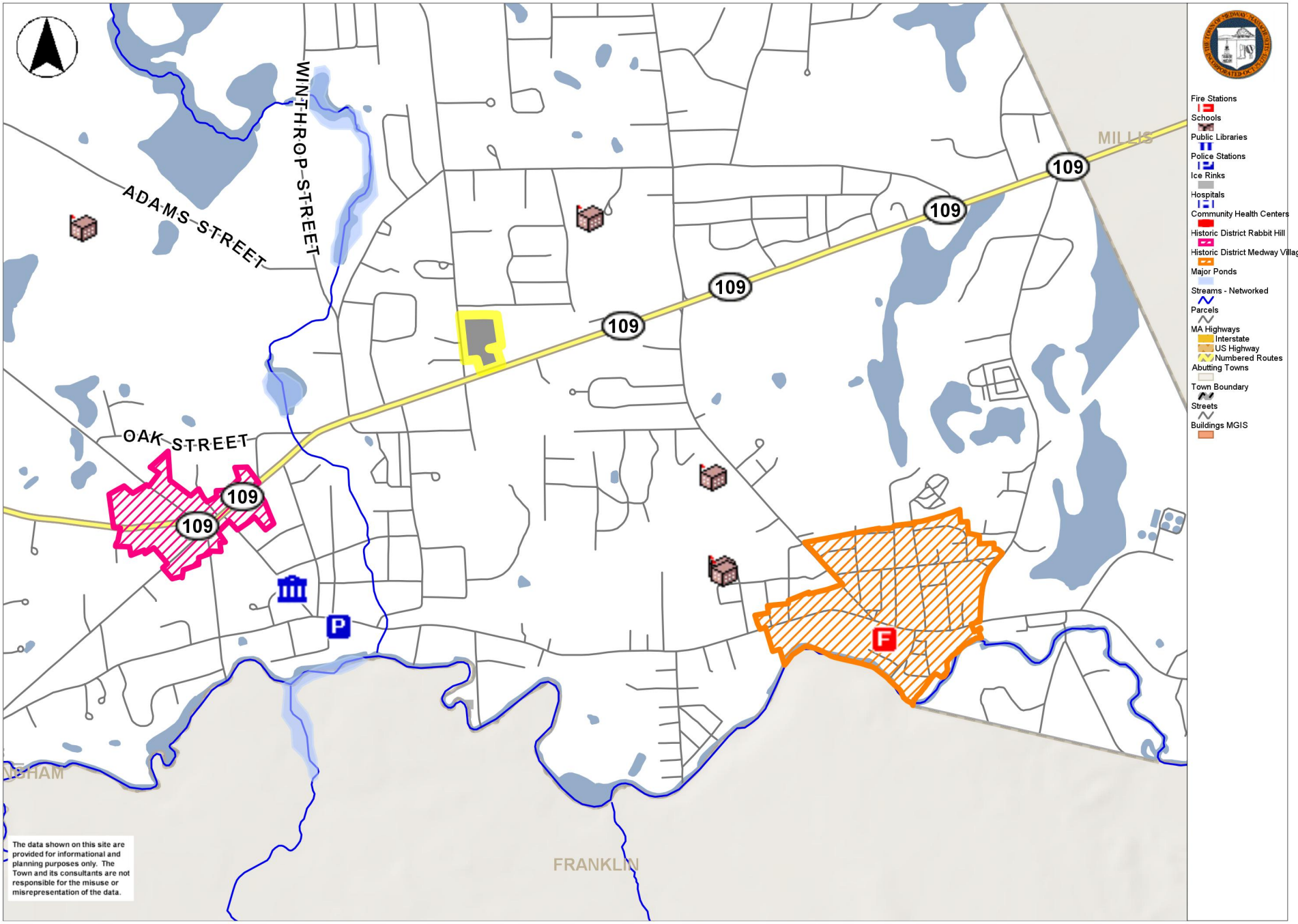
Marnin Feldman

Marnin Feldman
Senior Project Manager
PES Associates
62 Derby Street
Suite 10
Hingham, MA 02043
Phone: 781-407-7777
Fax : 781-407-0007
Cell-617-834-4108
Home Office -978-774-1939



Printed on 08/22/2015 at 08:48 AM

Town of Medway, MA GIS

From: David Damico ddamico@townofmedway.org
Subject: Medway Block - 120 Main Street, Medway, MA
Date: Jun 27, 2017, 4:54:40 PM
To: mfeld@hotmail.com

Mr. Feldman,

I have received your letter of June 9, 2017 concerning the above address and property owner in Medway, MA. I understand that the owner is seeking to continue coverage under a new Remediation General Permit. This will be done under a new NOI application seeking to renew the 2010 permit. The Town of Medway Department of Public Services has been working with Medway Block and their engineers to improve the current connections to the Town's stormwater sewer system.

On April 28, 2017 Medway Block filed for a stormwater connection permit with the Town, Permit No. SORA2017-24. As part of this permit, Medway Block is providing separate testing locations for each of their discharges and a new design significantly improving infiltration for normal stormwater run-off at the site. Remediation flow is monitored and piped separately to the stormwater sewer. Although the permit is still under review, we anticipate issuing the permit shortly. Tentative approval pending any changes required by other regulatory agencies as been granted.

Please let me know if you require anything further.

David D'Amico
Medway DPS Director
Check us out on-line at www.townofmedway.org

PES Associates
Environmental Engineering Services

June 9, 2017

Mr. David D'Amico
Director, Department of Public Services
Town of Medway
45B Holliston Street
Medway, MA 02053

Re**: **2017 Remediation General Permit (RGP) Notice of Intent (NOI)
Medway Block Co. Inc, 120 Main Street
Medway, Massachusetts
RTN 2-12740

Dear Mr. D'Amico:

On Behalf of *Medway Block Co., Inc.*, 120 Main Street, Medway, MA, *PES Associates, Inc.* is seeking to continue coverage under the US Environmental Protection Agency's newly promulgated 2017 National Pollutant Discharge Elimination System (NPDES) Remediation General Permit (RGP). The RGP is for treated wastewater at a maximum flow rate of 10 gpm discharged from the Site via a 4" diameter PVC underground pipe which connects to an existing 10" diameter underground Site stormwater drain pipe just before entering the Medway stormwater catch basin and underground main at 120 Main Street. Discharge of remedial wastewater at the Site was previously conducted and approved under NPDES permit exclusion letter #MA021-05 & 2005 & 2010 RGP MAG-910109.

Please note that *Medway Block* will maintain one single connection point to the town stormwater system (i.e. the 10" drain pipe entering the town catch basin). The RGP and *Medway Block's* stormwater overflow will discharge independently into the 10" drain pipe and each of these discharges will have separate monitoring points upstream of their respective discharge points.

As per notification requirements of the EPA National Pollutant Discharge Elimination System Discharge General Permit for 2017, this letter is to advise the Town of Medway that we will be submitting to the EPA before July 7, 2017, a Notice of Intent (NOI) to renew the 2010 permit under which we are currently discharging. We also request continued Town of Medway written consent for the connection to the municipal stormwater system which terminates at Chicken Brook from Evergreen Street.

If you have any questions about this matter or would like to acquire a copy of this NOI application, you may contact the undersigned or Ms. Ellen Blackburn at (781) 407-7777.
We would appreciate your response as soon as possible

Sincerely,
PES Associates, Inc.

Marnin Feldman
Senior Project Manager

Cc: Medway Board of Selectman, Mr. J. Foresto Chairman, 155 Village St., Medway, MA 02053

Medway Block Co, Inc

120 Main Street Medway, MA

2017 EPA RGP NOI MA 910224

Tolcide PS20A Information

Name of Compound: Tolcide PS20A

Manufacturer: Solvay USA NOVECARE

Formula: {(HOCH2)4P}2(SO4)

CAS#: 55566-30-8

Use: Biocide to reduce iron eating bacteria and iron sequestering agent

Aquatic Toxicity LC50: See attached *Solvay* MSDS. Re pollutant contribution, "in systems using activated carbon, THPS is fully absorbed and degradation via hydrolysis is catalyzed by the activated carbon, resulting in no discharge of THPS whatsoever." See Redux Info Sheet attached.

Date in Use: 2006, approved in 2005 RGP issued 5/12/2006 and 2010 RGP dated 2/10/11.

Usage: A *Milton Roy* electrical metering pump with a maximum delivery capacity of 1.0 gal per hour is powered when the extraction well pump is in operation and delivers the PS20A (20% solution of the chemical in water) to the oil water separator. The average concentration added since 1/1/2015 is approximately 10.3 ppm based on the dry chemical and quantity of water treated with short term peak use estimated at 13.39 ppm.

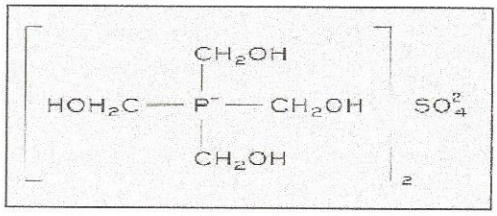
Compatibility Risks for Storage: Avoid
Strong acids
Strong bases
Strong oxidizing agents
Strong reducing agents.

None of the above in proximity. Material stored in closed, plastic 15 gallon drums.

REDUX TECHNOLOGY®
Division of Azure Water Services, LLC

20% THPS
Product Information

20% THPS is a broad spectrum non-oxidzing bioicde, whose use in the groundwater remediation market was pioneered by Redux Technology. The product contains the active ingredient tetrakishydroxymethyl phosphonium sulfate (THPS), whose chemical structure is illustrated below.



Key features of THPS, which make it application in remedial systems ideal include:

- While it is a potent microbiocide, it has a favourable environmental profile
- It has a compact molecular structure, important for rapid biocidal performance
- It is non-foaming, non-corrosive, effective over wide pH range and free of halogens or metals

THPS is fast-acting and rapidly degrades to non-toxic Trishydroxymethylphosphine Oxide (THPO), which subsequently degrades to simple organic constituents. Relevant toxicity data for these compounds follows:

Eco-toxicity of Redux THPS to aquatic species:

Freshwater Species			Marine Species		
Rainbow trout	96 Hr. LC_{50}	119 mg/l	Juvenile plaice	96 Hr. LC_{50}	86 mg/l
Bluegill sunfish	96 Hr. LC_{50}	93 mg/l	Brown shrimp	96 Hr. LC_{50}	340 mg/l
Daphnia magna	48 Hr. EC_{50}	19.4 mg/l			

THPS is readily biodegradable (as defined by US EPA, FIFRA 40 CFR, Part 158, Sub-division N, Series 162-4) and does not bio-accumulate (Octanol-water partition co-efficient is negative).

Eco-toxicity of THPO to aquatic species:

Rainbow trout	96 hr. LC_{50}	> 18,700 mg/l
Daphnia magna	48 hr. EC_{50}	> 3700 mg/l
Skeletonema costatum	72 hr. EC_{50}	> 7800 mg/

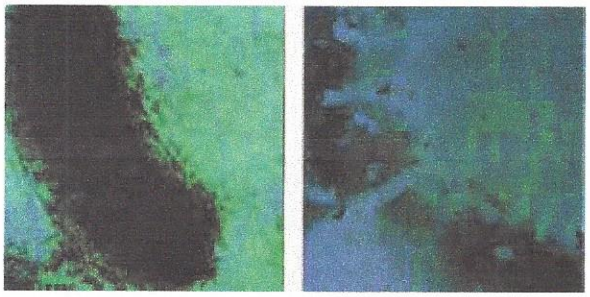
The unique combination of high performance coupled with a favourable environmental profile is cornerstone to a growing portfolio of registrations and awards, which include:

U.S. Presidential Green Chemistry Challenge Award
Satisfies criteria for Nordic Region White Swan Approval
Approved by Western Australian Environmental protection Agency
U.S. Environmental Protection Agency
U.K. Department of Environmental Offshore Chemical Notification Scheme
German BGVV Approval

280 Callegari Drive, West Haven, Connecticut 06516
Phone: 203-933-9071 Fax: 203-933-1751 www.reduxtech.com

Mechanism of biocidal action:

Extensive research into the mode of action of THPS has conclusively shown that the product causes rapid and severe damage to the cell membranes of target organisms.



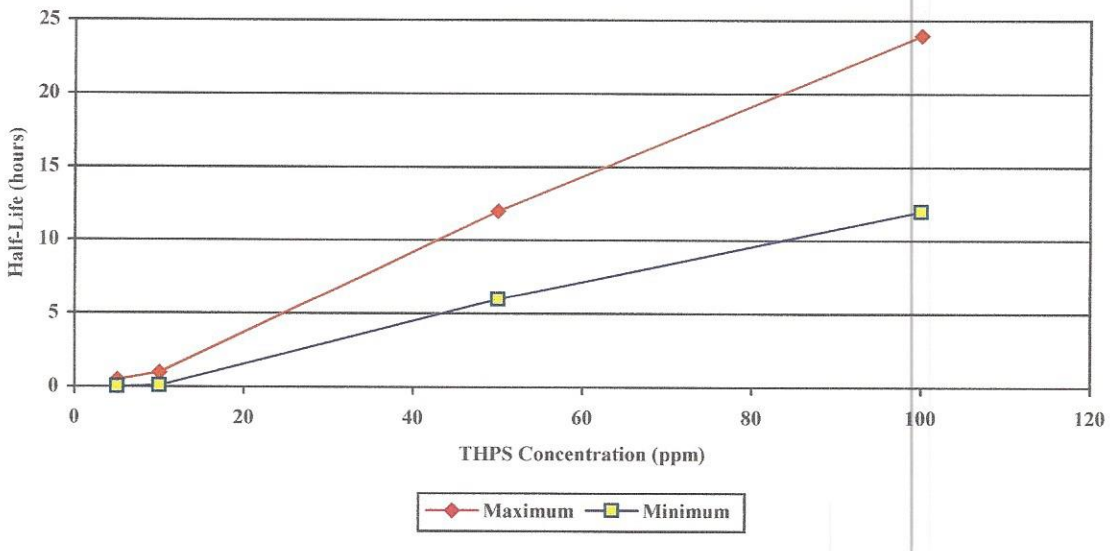
Scanning electron microscopy photos show the destructive action of THPS (left, before application; right, after) on *Desulfovibrio vulgaris,* a bacterium that generates hydrogen sulfide

Significant disruption to the integrity of the bacteria has occurred. Analysis of the surrounding water phase has detected nucleic acids indicating fundamental damage to the cell membranes.

THPS degradation rate, deactivation and sorption

Oxidation is the major degradation mechanism for THPS and the resulting degradation product is trihydroxymethylphosphine oxide, which is essentially non-toxic and subsequently degrades in natural aerated environments to water, carbon dioxide and phosphate salts. THPS can also be degraded readily and rapidly using bleach (1 bleach : 5 THPS) or hydrogen peroxide (1 peroxide : 12 THPS). In an aerated system, THPS half-life ranges from several minutes at low ppm concentrations, up to 24 hours at high concentrations.

Reported Half-Life of THPS in Aerobic Systems



In systems using activated carbon, THPS is fully absorbed and degradation via hydrolysis is catalyzed by the activated carbon, resulting in no discharge of THPS whatsoever.

280 Callegari Drive, West Haven, Connecticut 06516
Phone: 203-933-9071 Fax: 203-933-1751 www.reduxtech.com

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	TOLCIDE PS 20 A
FIFRA Registration number	:	4564-18

1.2 Relevant identified uses of the substance or mixture and uses advised against

Uses of the Substance / Mixture	:	Specific use(s): FIFRA regulated use only., Biocidal product

1.3 Details of the supplier of the safety data sheet

Company	:	Solvay USA Inc., NOVECARE 8 Cedar Brook Drive Cranbury, NJ, 08512-7500, US Telephone number: 800-973-7873

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture

HCS 2012 (29 CFR 1910.1200)

Acute toxicity, Category 3	H331: Toxic if inhaled.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitization, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.

2.2 Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :

Signal Word : Danger

Hazard Statements:

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H361	Suspected of damaging fertility or the unborn child.

Precautionary Statements:

Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.

Response

P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER or doctor/ physician.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P363	Wash contaminated clothing before reuse.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification

H401: Toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.

SECTION 3: Composition/information on ingredients

3.1 Substance

Not applicable, this product is a mixture.

3.2 Mixture

Chemical nature : Aqueous solution

Hazardous Ingredients and Impurities

Chemical Name	Identification number CAS-No.	Concentration [%]
Tetrakis(Hydroxymethyl) Phosphonium Sulfate	55566-30-8	18 - 22

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Show this material safety data sheet to the doctor in attendance.
First responder needs to protect himself.
Place affected apparel in a sealed bag for subsequent decontamination.
Plan first aid action before beginning work with this product.
In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

If inhaled : Move to fresh air.
Keep at rest.
Consult a physician.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with plenty of water.
Wash immediately and thoroughly for a prolonged period (at least 15 minutes).
Get medical attention if irritation develops and persists.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Get immediate medical advice/ attention.

Ingestion : Do not induce vomiting without medical advice.
If victim is conscious:
Rinse mouth with water.
Keep at rest.
Never give anything by mouth to an unconscious person.
Do not leave the victim unattended.
Vomiting may occur spontaneously
Risk of product entering the lungs on vomiting after ingestion.
Lay victim on side.
Get immediate medical advice/ attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms	:	Lachrymation Ingestion may provoke the following symptoms: Nausea Liver disorders
Risks	:	Skin contact may aggravate existing skin disease

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. Treat symptomatically. There is no specific antidote available.

SECTION 5: Firefighting measures

Flash point	:	Not applicable (aqueous liquid).
Autoignition temperature	:	no data available
Flammability / Explosive limit	:	no data available

5.1 Extinguishing media

Suitable extinguishing media	:	In case of fire, use water/water spray/water jet/carbon dioxide/sand/foam/alcohol resistant foam/chemical powder for extinction.
Unsuitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting	:	Harmful or toxic vapors are released. Do not allow run-off from fire fighting to enter drains or water courses. Under fire conditions: Will burn (following evaporation of water) Hazardous decomposition products Phosphorus trihydride (phosphine) Oxides of phosphorus Sulfur oxides Carbon oxides

5.3 Advice for firefighters

Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Personal protective equipment comprising: suitable protective gloves, safety

		goggles and protective clothing Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.
Specific fire fighting methods	:	Standard procedure for chemical fires.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions, protective equipment and emergency procedures	:	Do not breathe spray. Avoid contact with the skin and the eyes. Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental precautions

Environmental precautions	:	Do not allow uncontrolled discharge of product into the environment. Contain the spilled material by diking. Do not flush into surface water or sanitary sewer system. Do not let product enter drains. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

Recovery	:	Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.
	:	Never return spills in original containers for re-use.
Decontamination / cleaning	:	Wash nonrecoverable remainder with large amounts of water. Recover the cleaning water for subsequent disposal.
	:	Decontaminate tools, equipment and personal protective equipment in a segregated area.
Disposal	:	Dispose of contents/ container to an approved waste disposal plant. Dispose of in accordance with local regulations.

6.4 Reference to other sections

Reference to other sections	:	For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	Provide adequate ventilation.
Advice on safe handling and usage	:	Avoid exposure - obtain special instructions before use. This product must only be handled by skilled operators. Reduce the duration of exposure to the minimum required. Avoid formation of aerosol. Avoid the formation or spread of mists in the atmosphere. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation/personal protection. Do NOT handle without gloves.
Hygiene measures	:	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures for storage	:	Prevent unauthorized access. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions

Recommended	:	Keep in a dry, cool and well-ventilated place. Keep container tightly closed.
To be avoided	:	Keep away from incompatible materials to be indicated by the manufacturer Keep away from open flames, hot surfaces and sources of ignition.
Incompatible products	:	Do not mix with incompatible materials (See list, section 10).

Packaging Measures

Packaging Measures	:	Polyethylene or polypropylene drums., Stainless steel
Packaging materials—Recommended	:	Plastic materials (polyethylene).
Packaging materials—To be avoided	:	Ordinary steel.

Storage stability

Storage temperature	:	no data available
Other data	:	No decomposition if stored and applied as directed.

7.3 Specific end use(s)

no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters

Ingredients with workplace control parameters

Ingredients	Value type	Value	Basis
Tetrakis(Hydroxymethyl) Phosphonium Sulfate	TWA	2 mg/m3	ACGIH
	Central nervous system, 2014 Adoption, Not classifiable as a human carcinogen		

8.2 Exposure controls

Control measures

Engineering measures : Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures :

Avoid splashes.
Effective exhaust ventilation system
Facilities and equipment easily cleanable.
Separate rooms are required for washing, showering and changing clothes.

Personal protective equipment

Respiratory protection	:	When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations. Use a respirator with an approved filter if a risk assessment indicates this is necessary.
Hand protection	:	Glove material: Polyvinyl alcohol or nitrile- butyl-rubber gloves Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves must be inspected prior to use. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material. Eye contact should be prevented through the use of: Safety glasses with side-shields In case of contact through splashing: Wear face-shield and protective suit.
Skin and body protection	:	Wear suitable protective clothing, gloves and eye/face protection. Choose body protection according to the amount and concentration of the dangerous substance at the work place. Remove and wash contaminated apparel.
Hygiene measures	:	Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this materials: 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. 3) Wash exposed skin promptly to remove accidental splashes or contact with material.
Protective measures	:	Always have on hand a first-aid kit, together with proper instructions. Ensure that eyewash stations and safety showers are close to the workstation location. The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

Appearance	:	Physical state: liquid Color: pale yellow to pale pink
Odor	:	characteristic
Odor Threshold	:	no data available
pH	:	3.0 - 6.0
Freezing point	:	32 °F (0 °C)
Boiling point/boiling range	:	227.3 °F (108.5 °C) (759.81 mmHg (1,013.00 hPa))
Flash point	:	Not applicable (aqueous liquid).
Evaporation rate (Butylacetate = 1)	:	no data available
Flammability (solid, gas)	:	no data available
Flammability (liquids)	:	no data available
Flammability / Explosive limit	:	no data available
Autoignition temperature	:	no data available
Vapor pressure	:	no data available
Vapor density	:	no data available
Density	:	1.08 - 1.13 g/cm3 (68 °F (20 °C))
Solubility	:	Water solubility : completely miscible Solubility in other solvents: not determined
Partition coefficient: n-octanol/water	:	log Pow: -9.8 Structure-activity relationship (SAR), estimated
Thermal decomposition	:	> 320 °F (160 °C)
Viscosity	:	no data available

Explosive properties	:	no data available
Oxidizing properties	:	no data available

9.2 Other information

Molecular weight	:	406.3 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

Reactivity	:	Stable at normal ambient temperature and pressure.

10.2 Chemical stability

Chemical stability	:	Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No decomposition if stored and applied as directed.

Polymerization	:	Hazardous polymerization does not occur.

10.4 Conditions to avoid

Conditions to avoid	:	No dangerous reaction known under conditions of normal use.

10.5 Incompatible materials

Materials to avoid	:	Strong acids Strong bases Strong oxidizing agents Strong reducing agents.

10.6 Hazardous decomposition products

Decomposition products	:	Oxides of phosphorus Sulfur oxides Hydrogen Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke). PHOSPHINE

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Acute oral toxicity	:	LD50 : 575 mg/kg - Rat , for males and females Unpublished internal reports THPS 75% Not classified as harmful if swallowed According to the classification criteria for mixtures.
Acute inhalation toxicity	:	LC50 - 4 h (Dust) : 0.59 mg/l - Rat , for males and females Published data THPS 75% Humans Symptoms: Watering of the eyes Harmful by inhalation. According to the classification criteria for mixtures. According to the data on the components
Acute dermal toxicity	:	LD50 : > 2,000 mg/kg - Rat , for males and females Unpublished internal reports THPS 75% Not classified as harmful by contact with skin According to the classification criteria for mixtures. According to the data on the components
Acute toxicity (other routes of administration)	:	no data available

Skin corrosion/irritation

Skin irritation	:	Rabbit No skin irritation Method: OECD Test Guideline 404 Unpublished internal reports THPS 75%

Serious eye damage/eye irritation

Eye irritation	:	Risk of serious damage to eyes. Method: OECD Test Guideline 405 Extremely irritating to rabbits on ocular application. Unpublished internal reports THPS 75%

Respiratory or skin sensitization

Sensitization : Magnusson and Kligman method
May cause sensitization by skin contact.
Unpublished internal reports
THPS 75%

Mutagenicity

Genotoxicity in vitro : Product is not considered to be genotoxic

Mutagenicity (Salmonella typhimurium - reverse mutation assay)
with and without metabolic activation
negative
Unpublished internal reports
THPS 75%

Mutagenicity (in vitro mammalian cytogenetic test)
Strain: CHO
with and without metabolic activation
positive
Unpublished internal reports
THPS 75%

UDS test
Strain: Hepatocyte (primary culture)
negative
Unpublished internal reports
THPS 75%

Mouse lymphoma test / TK
with and without metabolic activation
positive
Unpublished internal reports
THPS 75%

Genotoxicity in vivo : Product is not considered to be genotoxic

Rodent dominant Lethal test - Rat
negative
Unpublished internal reports
THPS 75%

In vivo micronucleus test - Mouse
negative
Unpublished internal reports
THPS 75%

Carcinogenicity

Carcinogenicity : Rat Oral exposure
Animal testing did not show any carcinogenic effects.
Published data
THPS 75%

Mouse Oral exposure
Animal testing did not show any carcinogenic effects.
Published data
THPS 75%

This product does not contain any ingredient designated as probable or suspected human carcinogens by:
NTP
IARC
OSHA
ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility : Fertility study 2 generations - Rat
Oral exposure
no impairment of fertility has been observed
Unpublished internal reports
THPS 75%

Developmental Toxicity/Teratogenicity : Rat
Oral exposure
NOEL teratogenicity: 30 mg/kg
NOEL maternal: 15 mg/kg

Unpublished internal reports
THPS 75%

Rabbit
Oral exposure
NOEL teratogenicity: 18 mg/kg
NOEL maternal: 18 mg/kg

Effects on development were observed
May cause harm to the unborn child.
Unpublished internal reports
THPS 75%

STOT

STOT-single exposure

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : Toxicology Assessment:
The substance or mixture is not classified as specific target organ toxicant, single exposure.
internal evaluation

STOT-repeated exposure : Oral exposure 90 Days - Rat , for males and females
NOEL: 1 mg/kg
Liver toxicity
Unpublished internal reports

THPS 75%

Neurological effects

Neurological effects : Screening biochemistry test kit for cholinesterase activity inhibition, The product does not induce inhibition, THPS 75%

Experience with human exposure

Experience with human exposure : Inhalation : Not classified as irritating to respiratory system.

Carcinogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : The product is not considered to be carcinogenic.

Teratogenicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate : Suspected human reproductive toxicant

Aspiration toxicity

Aspiration toxicity : no data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish : LC50 - 96 h : 119 mg/l - Oncorhynchus mykiss (rainbow trout)
Unpublished internal reports
THPS 75%

LC50 - 96 h : 93 mg/l - Lepomis macrochirus (Bluegill sunfish)
Unpublished internal reports
THPS 75%

Acute toxicity to daphnia and other aquatic invertebrates. : EC50 - 48 h : 15.1 mg/l - Daphnia magna (Water flea)
THPS 75%
Unpublished internal reports

: EC50 - 48 h : 0.4 mg/l - Crustacean: Acartia tonsa
THPS 75%
Unpublished internal reports

Toxicity to aquatic plants	:	EC50 - 96 h : 0.66 mg/l - Pseudokirchneriella subcapitata (microalgae) THPS 75% Unpublished internal reports
	:	EC50 - 96 h : 0.16 mg/l - Skeletonema costatum (marine diatom) THPS 75% Unpublished internal reports
	:	NOEC - 96 h : 0.059 mg/l - Skeletonema costatum (marine diatom) THPS 75% Unpublished internal reports
Toxicity to microorganisms	:	EC50 - 3 h : 24 mg/l - activated sludge THPS 75% Unpublished internal reports

Chronic toxicity to fish

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	NOEC: 0.83 mg/l - 32 Days - Pimephales promelas (fathead minnow) flow-through test Method: OECD Test Guideline 210 Harmful to fish with long lasting effects. Unpublished internal reports

Chronic toxicity to daphnia and other aquatic invertebrates.

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	NOEC: 0.0242 mg/l - 21 Days - Daphnia magna (Water flea) semi-static test Method: OECD Test Guideline 202 Toxic to aquatic invertebrates with long lasting effects. Unpublished internal reports

Sediment compartment

Toxicity to benthic organims

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	EC50: 619 Exposure duration: 5 Days Unpublished internal reports

Terrestrial Compartment

Toxicity to soil dwelling organisms

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	LC50: 960 mg/kg - 14 Days - Eisenia fetida (earthworms) Method: OECD Test Guideline 207

Toxicity to terrestrial plants

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	EC50: 102 mg/kg - 14 Days Method: OECD Test Guideline 208

Ecotoxicity assessment

Acute aquatic toxicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Very toxic to aquatic life.

Chronic aquatic toxicity

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Toxic to aquatic life with long lasting effects.

M-Factor

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Acute aquatic toxicity = 1 (according to the Globally Harmonized System (GHS))

12.2 Persistence and degradability

Biodegradability

Biodegradability

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Ultimate aerobic biodegradability Method: Simulation study 70 % - 21 d Readily biodegradable. US EPA FIFRA, Subdivision N, § 162-4 Unpublished internal reports anaerobic Method: Simulation study 60 % - 30 d US EPA FIFRA, Subdivision N, § 162-4 Unpublished internal reports

Stability

Stability in water

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	DT50: Half-life value: 131 Days (77 °F (25 °C)) pH: 5.0 Method: according to a standardized method Unpublished internal reports DT50: Half-life value: 72 Days (77 °F (25 °C)) pH: 7.0 Method: according to a standardized method Unpublished internal reports DT50: Half-life value: 7 Days (77 °F (25 °C)) pH: 9.0 Method: according to a standardized method Unpublished internal reports

Photodegradation

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Sensitizer: OH Concentration sensitizer in molecule/cm3: 1,500,000 1/cm3 Rate constant in cm3 / molecule*s: 2.7E-11 cm3/s Half-life indirect photolysis: 0.4 Days Structure-activity relationship (SAR) Published data

Degradability assessment

Degradability assessment

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

Adsorption potential (Koc)

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	Log Koc: 2.2 Moderately mobile in soils Unpublished internal reports Adsorption/Soil Koc: 153 Method: OECD Test Guideline 106 THPS 75% Mobile in soils Unpublished internal reports

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

Tetrakis(Hydroxymethyl) Phosphonium Sulfate	:	This substance is not considered to be persistent, bioaccumulating and toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Disposal

Advice on Disposal	:	Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.
Waste Code	:	EPA: Hazardous Waste – NO

Advice on cleaning and disposal of packaging

Advice	:	Take preliminary precautions based on the dangerous properties of the product. Empty the packaging completely prior to disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal. The user's attention is drawn to the possible existence of local regulations regarding disposal.

SECTION 14: Transport information

DOT
not regulated

TDG
not regulated

IMDG
not regulated

IATA
not regulated

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

SECTION 15: Regulatory information

15.1 Notification status

United States TSCA Inventory	:	e (special case) This product is regulated under the United States Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
Canadian Domestic Substances List (DSL)	:	YES (positive listing) All components of this product are on the Canadian DSL.
Australia Inventory of Chemical Substances (AICS)	:	YES (positive listing) On the inventory, or in compliance with the inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	:	n (Negative listing) Not in compliance with the inventory
Korea. Korean Existing Chemicals Inventory (KECI)	:	n (Negative listing) Not in compliance with the inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	:	n (Negative listing) Not in compliance with the inventory

15.2 Federal Regulations

SARA 311/312 Hazards

Fire Hazard	no
Reactivity Hazard	no
Sudden Release of Pressure Hazard	no
Acute Health Hazard	yes
Chronic Health Hazard	yes

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb
Acrylic Acid	79-10-7	5000 lb

SARA 304 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb

SARA 302 Reportable Quantity

Ingredients	CAS-No.	Reportable quantity
Formaldehyde	50-00-0	100 lb

15.3 State Regulations

California Prop 65 : WARNING! This product contains a chemical known in the State of California to cause cancer.
Formaldehyde

No Significant Risk Levels (NSRLs) have been established for the following:
Formaldehyde
Value : 40 micrograms per day

SECTION 16: Other information

NFPA (National Fire Protection Association) - Classification

Health	:	2 moderate
Flammability	:	0 minimal
Instability or Reactivity	:	1 slight

HMIS (Hazardous Materials Identification System (Paint & Coating)) - Classification

Health	:	2 moderate
Flammability	:	0 minimal
Reactivity	:	1 slight

Further information

Date Prepared	:	02/24/2015
Further information	:	Product classified under the US GHS format.

Key or legend to abbreviations and acronyms used in the safety data sheet

TWA	:	8-hour, time-weighted average
ACGIH	:	American Conference of Governmental Industrial Hygienists
OSHA	:	Occupational Safety and Health Administration
WHMIS	:	Workplace Hazardous Materials Information System
NTP	:	National Toxicology Program
IARC	:	International Agency for Research on Cancer
	:	Solvay Acceptable Exposure Limit
NIOSH	:	National Institute for Occupational Safety and Health
NFPA	:	National Fire Protection Association
HMIS	:	Hazardous Materials Identification System (Paint & Coating)

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.