May 25, 2017

U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code OEP06-4
Boston, MA 02109-3912
ATTN: Remedial General Permit NOC Processing

RE: Notice of Intent (NOI) for 2017 Final Remediation General Permit Discharge Authorization #MAG910403
Cushing Village – 102-104 Trapelo Road
Belmont, Massachusetts
SAGE Project No. R090

To Whom It May Concern:

On behalf of Belmont Residential, LLC, SAGE Environmental, Inc. (SAGE) is submitting a Notice of Intent (NOI) for the Authorization to Discharge under the 2017 Final Remediation General Permit (RGP) MAG910403. This authorization is for a continuation to discharge effluent under the 2010 RGP that was provided to Ronald K. Burns of Coler and Colantonio, Inc. on January 4, 2011 for the property identified as the Common Street Trust property located at 102-104 Trapelo Road in Belmont, Massachusetts (the Site). A Notice of Change for the current operator to continue discharge under the 2010 RGP was acknowledged by the Environmental Protection Agency (EPA) on March 28, 2017.

The requested authorization is for post-treatment discharge of dewatering effluent during construction of the Cushing Village project. This effluent has been contaminated with volatile organic compounds (VOCs) due to a historical release of dry cleaning solvents at the Site which resulted in contamination of groundwater.

The completed NOI form is included as **Attachment A**.

Analysis of effluent generated during discharges under the 2010 RGP indicates that effluent will meet the effluent discharge limits of the Final 2017 RGP. The components of the contaminated construction dewatering effluent treatment train include the following:

- Settling/removal of fines utilizing one 18,000 and one 21,000-gallon capacity fractionation tanks, piped in series;
- Fine sediment removal utilizing four bag filters, piped in parallel;

- Removal of metals and cyanide utilizing a 1,000-pound Greensand Plus™ filtration vessel;

- Removal of organic compounds utilizing two 1,000-pound granular activated carbon (GAC) filtration vessels; and,

- Measurement of total discharge utilizing a flow totalizer prior to the effluent being discharged to the Town of Belmont storm drain system.

A schematic drawing of the treatment train is included as Figure 1, **Attachment B** of the NOI submission.

As under the prior authorization, effluent from the treatment system will be discharged to the existing Town of Belmont storm drain system. The waterbody receiving the discharge is Wellington Brook, a Class B waterbody. This waterbody ultimately discharges to the Mystic River via the Little River and Alewife Brook. The discharge point to the storm drain system which then discharges to Wellington Brook is depicted in Figure 2, **Attachment B**. Effluent samples are being collected and analyzed as required by the 2010 RGP to evaluate compliance with discharge limits.

The Receiving water body has been sampled as required by the 2017 RGP. The location of the sample point is depicted on Figure 3, **Attachment B**.

A Massachusetts Licensed Wastewater Treatment Plant Operator oversees operation of the treatment system. Effluent samples will be collected and analyzed as required by the Final 2017 RGP to evaluate compliance with discharge limits.

The maximum allowable flow limit permitted under the 2010 RGP, and requested under the 2017 Final RGP, is 100 gallons per minute (gpm). The design flow of the treatment train described above is 50 gpm.

On November 30, 2016, SAGE collected a groundwater sample from monitoring well ATC-01 to evaluate the potential contaminant concentrations that may be present in the treatment system influent. The groundwater sample was analyzed utilizing the methods specified for influent and effluent monitoring in the Final 2017 RGP. Laboratory analytical results indicate that concentrations of some of the chlorinated VOCs and cadmium exceeded the Final 2017 RGP effluent discharge limits. All other analytes were either not detected or were detected at concentrations below the effluent limits. Analysis of the influent into the treatment system discharging under the 2010 RGP indicated that concentrations of cadmium and chlorinated VOCs and all other constituents are below effluent limitations. Laboratory analytical reports for these analyses are included in the NOI submission as **Attachment C**.

SAGE has conducted dilution factor and Water Quality Based Effluent Limitations for the proposed discharge in accordance with Appendix V to the Final2017 RGP. Receiving water body sample analysis

data, information supporting the determination of 7Q10 flow volumes, dilution factor calculations and calculation of WQBELs are included in the NOI submission as **Attachment D**.

SAGE has coordinated with the US Fish and Wildlife Service (US F&WS) regarding the presence and effect of effluent discharge under the Final 2017 RGP on the threatened Long Northern Long Eared Bat. This coordination has resulted in a determination that the discharge will have no effect on this species. Documentation of US F&WS coordination is included in the NOI submission as **Attachment E**. Effluent from the treatment system discharges to Wellington Brook, which is contained in an underground culvert from the point of discharge to a culvert that outlets under Common Street at a point approximately 1.6 miles from the project Site. After briefly flowing in a surface channel, the brook enters another underground culvert that discharges to Clay Pit Pond. The discharge is not likely to adversely affect federally threatened or endangered species or critical habitat under the jurisdiction of the National Marine Fisheries Service and will not result in a take of listed species.

No historic properties are present on the Site. All buildings on the Site were demolished under a permit issued by the Town of Belmont. The discharges and discharge-related activities do not have the potential to cause effects on historic properties. Documentation pertaining to the absence of effects on historic properties is included in the NOI submission as **Attachment F**.

Several releases/threats of release have previously been reported to the Massachusetts Department of Environmental Protection (MassDEP) and have been assigned Release Tracking Numbers (RTNs). Since the Site is being remediated under the Massachusetts Contingency Plan (MCP) pursuant to 310 CMR 40.0000, in accordance with the RGP-NOI, the State Application Form BRPWM 12 and associated payment are not applicable to this project.

Please feel free to contact me should you have any questions or need additional information.

Sincerely,
SAGE Environmental, Inc.

John Meyer, Project Manager

Molly Cote, Project Manager

JM/MC:car

Attachment A	Notice of Intent Form
Attachment B	Figures
Attachment C	Influent Laboratory Analytical Reports
Attachment D	Discharge Dilution and WQBEL Supporting Information and Calculations
Attachment E	Documentation of USF&WS Coordination
Attachment F	Documentation of Absence of Effects on Historic Properties

ATTACHMENT A

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:
Cushing Village</td><td colspan="3">Site address: 102-104 Trapelo Road
Street:</td></tr>
<tr><td colspan="2">City: Belmont</td><td>State: MA
Zip: 02478</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td colspan="3"></td></tr>
<tr><td rowspan="5">2. Site owner
Belmont Residential, LLC

Owner is (check one): ☐ Federal ☐ State/Tribal ■ Private
☐ Other; if so, specify:</td><td colspan="3">Contact Person: William Lovett</td></tr>
<tr><td colspan="2">Telephone: (617) 659-2611</td><td>Email: blovett@tollbrothersinc.com</td></tr>
<tr><td colspan="3">Mailing address: 250 Gibraltar Road, 3 West
Street:</td></tr>
<tr><td colspan="2">City: Horsham</td><td>State: PA
Zip: 19044</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td rowspan="5">3. Site operator, if different than owner
SAGE Environmental, Inc.</td><td colspan="3">Contact Person: Rick Mandile</td></tr>
<tr><td colspan="2">Telephone: (401) 723-9900 ext. 107</td><td>Email: rmandile@sage-enviro.com</td></tr>
<tr><td colspan="3">Mailing address:
Street: 172 Armistice Blvd.</td></tr>
<tr><td colspan="2">City: Pawtucket</td><td>State: RI
Zip: 02838</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>4. NPDES permit number assigned by EPA:
MAG910403

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):
3-0023300
☐ 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):
Wellington Brook		Class B

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

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

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

3. Indicate if the receiving water(s) is listed in the State's Integrated List of Waters (i.e., CWA Section 303(d)). Include which designated uses are impaired, and any pollutants indicated. Also, indicate if a final TMDL is available for any of the indicated pollutants. For more information, contact the appropriate State as noted in Part 4.6 of the RGP. The majority of Wellington Brook's channel is contained in underground culverts. The brook's water s are impaired for pathogens. No TMDL in place.

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.	0.302 cfs
5. Indicate the requested dilution factor for the calculation of water quality-based effluent limitations (WQBELs) determined in accordance with the instructions in Appendix V for sites in Massachusetts and Appendix VI for sites in New Hampshire.	2.35

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:

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: Volatile Organic Compounds, Cadmium	
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): Storm drain at the intersection of Williston and Trapelo Roads. The outfall for the storm drain system is located at Common Street approximate 1.6 miles from the point of discharge.	Outfall location(s): (Latitude, Longitude) The storm drain location is 42.380870, -71.175716 The storm drain system outfall location is 42.395254, -71.176305
Discharges enter the receiving water(s) via (check any that apply): ☐ Direct discharge to the receiving water ■ Indirect discharge, if so, specify: The discharge travels through approximately 1.6 miles of storm drain prior to reaching the storm system outfall. ☐ A private storm sewer system ■ A municipal storm sewer system If the discharge enters the receiving water via a private or municipal storm sewer system: Has notification been provided to the owner of this system? (check one): ■ Yes ☐ No Has the operator has received permission from the owner to use such system for discharges? (check one): ■ Yes ☐ No, if so, explain, with an estimated timeframe for obtaining permission: Has the operator attached a summary of any additional requirements the owner of this system has specified? (check one): ☐ Yes ■ No	
Provide the expected start and end dates of discharge(s) (month/year): Start April 2017 End March 2022 Indicate if the discharge is expected to occur over a duration of: ☐ less than 12 months ■ 12 months or more ☐ is an emergency discharge	
Has the operator attached a site plan in accordance with the instructions in D, above? (check one): ■ Yes ☐ No	

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

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

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

4. Influent and Effluent Characteristics

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
A. Inorganics									
Ammonia		✔	2	SM4500N	100	0.546	0.490	Report mg/L	---
Chloride		✔	2	SM4500C	100	371	352	Report µg/l	---
Total Residual Chlorine	✔		1	4500CL	10	<0.011	<0.011	0.2 mg/L	0.26 mg/L
Total Suspended Solids		✔	2	SM2540D	100	31	19.9	30 mg/L	---
Antimony		✔	2	200.7	1.25	27.9	14.5	206 µg/L	
Arsenic	✔		2	200.7	1.25	<1.25	<1.25	104 µg/L	
Cadmium		✔	2	200.9	0.125	<0.02	<0.02	10.2 µg/L	
Chromium III		✔	2	200.7	1.25	<11.2	<11.2	323 µg/L	
Chromium VI	✔		2	200.7	1	<1	<1	323 µg/L	
Copper	✔		2	200.7	5	<5	<5	242 µg/L	
Iron		✔	2	200.7	12.5	1470	908	5,000 µg/L	
Lead		✔	2	SM311B	0.025	1.4	0.75	160 µg/L	
Mercury	✔		2	245.1	0.223	<0.223	<0.223	0.739 µg/L	
Nickel		✔	2	200.7	1.25	30.4	16.3	1,450 µg/L	
Selenium	✔		2	SM311B	2.5	<2.5	<2.5	235.8 µg/L	
Silver		✔	2	SM311B	0.2	<0.2	<0.2	35.1 µg/L	
Zinc		✔	2	200.7	5	10.8	8.25	420 µg/L	
Cyanide	✔		1	SM4500C	5	<5	<5	178 mg/L	
B. Non-Halogenated VOCs									
Total BTEX	✔		1	624	2	<2	<2	100 µg/L	---
Benzene	✔		1	624	<	<1	<1	5.0 µg/L	---
1,4 Dioxane	✔		1	8270 SIM	0.1	<0.1	<0.1	200 µg/L	---
Acetone	✔		1	624	0.005	<0.005	<0.005	7.97 mg/L	---
Phenol	✔		1	624	2	<2	<2	1,080 µg/L	

Parameter	Known or believed absent	Known or believed present	# of samples	Test method (#)	Detection limit (µg/l)	Influent		Effluent Limitations	
						Daily maximum (µg/l)	Daily average (µg/l)	TBEL	WQBEL
C. Halogenated VOCs									
Carbon Tetrachloride	✔		1	624	<1	<1	<1	4.4 µg/L	
1,2 Dichlorobenzene	✔		1	625	<1	<1	<1	600 µg/L	---
1,3 Dichlorobenzene	✔		1	625	<1	<1	<1	320 µg/L	---
1,4 Dichlorobenzene	✔		1	625	<1	<1	<1	5.0 µg/L	---
Total dichlorobenzene	✔		1	624	<1	<1	<1	763 µg/L in NH	---
1,1 Dichloroethane	✔		1	624	<1	<1	<1	70 µg/L	---
1,2 Dichloroethane	✔		1	624	<1	<1	<1	5.0 µg/L	---
1,1 Dichloroethylene	✔		1	624	<1	<1	<1	3.2 µg/L	---
Ethylene Dibromide	✔		1	504.1	<0.01	<0.01	<0.01	0.05 µg/L	---
Methylene Chloride	✔		1	624	<1	<1	<1	4.6 µg/L	---
1,1,1 Trichloroethane	✔		1	624	<1	<1	<1	200 µg/L	---
1,1,2 Trichloroethane	✔		1	624	<1	<1	<1	5.0 µg/L	---
Trichloroethylene		✔	2	624	1	<1	<1	5.0 µg/L	---
Tetrachloroethylene		✔	2	624	1	2.03	1.97	5.0 µg/L	
cis-1,2 Dichloroethylene		✔	2	624	1	<1	<1	70 µg/L	---
Vinyl Chloride		✔	2	624	1	<1	<1	2.0 µg/L	---
D. Non-Halogenated SVOCs									
Total Phthalates	✔		1	625	5	<5	<5	190 µg/L	
Diethylhexyl phthalate	✔		1	625	5	<5	<5	101 µg/L	
Total Group I PAHs	✔		1	625	1	<1	<1	1.0 µg/L	---
Benzo(a)anthracene	✔		1	625	1	<1	<1	As Total PAHs	
Benzo(a)pyrene	✔		1	625	1	<1	<1		
Benzo(b)fluoranthene	✔		1	625	1	<1	<1		
Benzo(k)fluoranthene	✔		1	625	1	<1	<1		
Chrysene	✔		1	625	1	<1	<1		
Dibenzo(a,h)anthracene	✔		1	625	1	<1	<1		
Indeno(1,2,3-cd)pyrene	✔		1	625	1	<1	<1		

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	625	1	<1	<1	100 µg/L	---
Naphthalene	✔		1	625	1	<1	<1	20 µg/L	---
E. Halogenated SVOCs									
Total PCBs	✔		1	608	0.5	<0.5	<0.5	0.000064 µg/L	---
Pentachlorophenol	✔		1	625	5	<5	<5	1.0 µg/L	---
F. Fuels Parameters									
Total Petroleum Hydrocarbons		✔	1	1664	2000	3000	3000	5.0 mg/L	---
Ethanol	✔		1	8100M	10	<10	<10	Report mg/L	---
Methyl-tert-Butyl Ether		✔	1	624	1	1.8	<10	70 µg/L	
tert-Butyl Alcohol	✔		1	624	10	<1	<1	120 µg/L in MA 40 µg/L in NH	---
tert-Amyl Methyl Ether	✔		1	624	1	<1	<1	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		✔	2			8.33	7.67		
Temperature		✔	1			13.52 C	12.46 C		
Hardness		✔							

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:

25 micron fabric bag filters and Greensand Plus™ filtration for absorption of metals and cyanide

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

- Settling/removal of fines utilizing one 18,000 gallon baffled and one 21,000-gallon un-baffled fractionation tank, connected in series, equipped with high water detection/alarms;
- Fine sediment removal utilizing four 25 micron bag filters, piped in series;
- Removal of metals and cyanide utilizing a 1,000-pound Greensand Plus™ filtration vessel;
- Removal of organic compounds utilizing two 1,000-pound granular activated carbon (GAC) filtration vessels

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: The system consists of two frac tanks (18,000 and 21,000 gallon) four 25 micron bag filters, a 1,000-pound greensand filter, and two 1,000 pound GAC canisters.

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: Green sand filtration vessel has a maximum flow capacity of 50 GPM. See attached specification sheet. Is use of a flow meter feasible? (check one): ■ Yes ☐ No, if so, provide justification:	
Provide the proposed maximum effluent flow in gpm.	100 gpm
Provide the average effluent flow in gpm.	25 gpm
If Activity Category IV applies, indicate the estimated total volume of water that will be discharged:	

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

F. Chemical and additive information

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

☐ Algaecides/biocides ☐ Antifoams ☐ Coagulants ☐ Corrosion/scale inhibitors ☐ Disinfectants ☐ Flocculants ☐ Neutralizing agents ☐ Oxidants ☐ Oxygen ☐ scavengers ☐ pH conditioners ☐ Bioremedial agents, including microbes ☐ Chlorine or chemicals containing chlorine ☐ Other; if so, specify:
None

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

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

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

G. Endangered Species Act eligibility determination

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

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

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

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

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

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

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

H. National Historic Preservation Act eligibility determination

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

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

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

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

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

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

I. Supplemental information

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

Information on pre-project groundwater quality (well ATC-01) collected from the portion of the Site which will be dewatered. Influent and effluent sample data collected during dewatering of the Site under the 2010 RGP.

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.

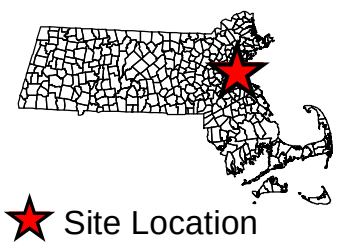
BMPP certification statement:	I certify that a BMPP meeting the requirements of this General Permit has been developed and implemented.
Notification provided to the appropriate State, including a copy of this NOI, if required.	Check one: Yes ■ No ☐
Notification provided to the municipality in which the 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: Jacob H. B.	Date: 6/1/2017
Print Name and Title: Jacob H. Butterworth, MS, LSP	

ATTACHMENT B

Contruction Dewatering Plan

Cushing Village
Along Trapelo Road and Common Street
Belmont, Massachusetts

Figure 1



Date: 05/15/2017
Job #: R090
Created By: ALM

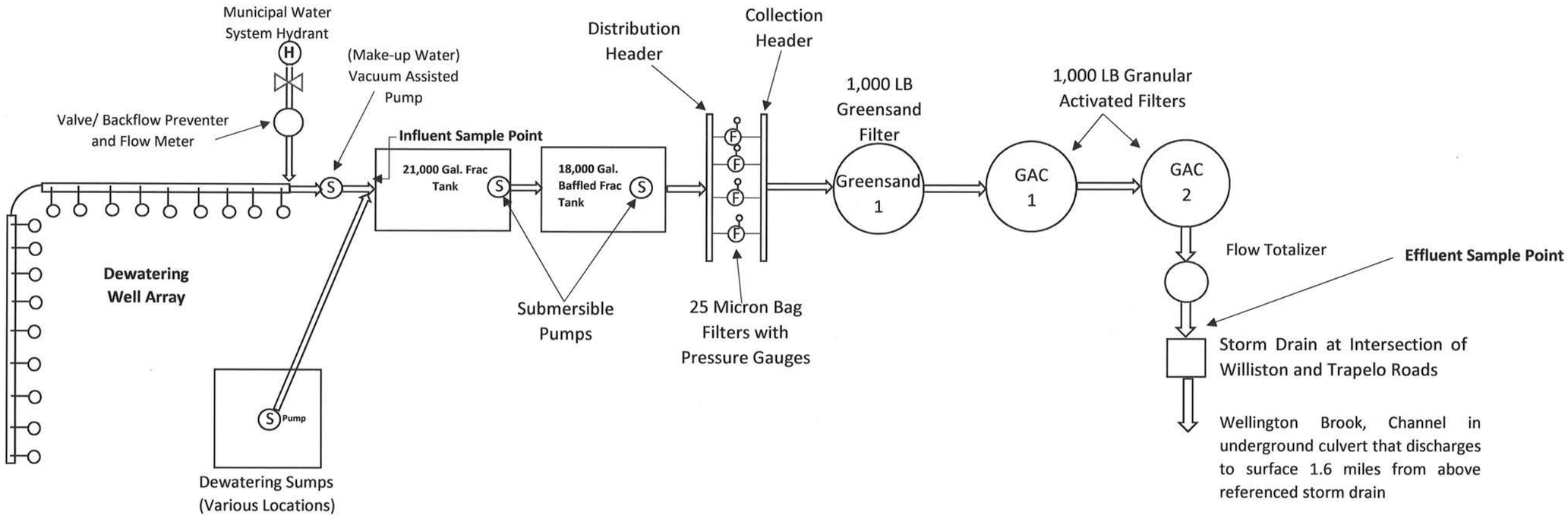
0 10 20 40 Feet

Dewatering Well Location

Treatment System

Orthoimagery Provided by Nearmap

SAGE ENVIRONMENTAL



Legend

Schematic Effluent Treatment Flow Diagram
Cushing Village Dewatering Effluent Treatment System

Cushing Village
Belmont, Massachusetts

Date: 05/15/2017

Job #: R090

Created By: ALM

Figure 2

SAGE ENVIRONMENTAL

Receiving Water

Discharge Point

Cushing Village

BELMONT, MA

STORM WATER SAMPLING AND ANALYSIS PROGRAM
WELLINGTON BROOK TRIBUTARY AREA

JB-209
JULY 2007

FIGURE 1
SAMPLE RESULTS

N

1 inch equals 250 feet

Legend
Boundary - Wellington Brook
DRAIN MANHOLES - WB
TYPE
CB - Curb Inlet
CB - Round Grate
CB - Square Grate
CB- Square Grate
Drain Manhole
PUMP WELL
DRAIN SERVICE - WB
RESULTS
DRAIN
DRY
COULD NOT LOCATE
0 - 199
200 - 999
1000 - 4999
5000 - 19999
20000 - 29999
30000
WELLINGTON BROOK MAIN LINE
EDTROADS
PARCELS
BUILDINGS
Mystic Watershed
Water
Red #'s Sample #
Blue #'s MH/CB #

Figure courtesy of the City of Belmont, MA

ATTACHMENT C

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 7D19027
Client Project: R090 Cushing Village

Report Date: 25-April-2017

Prepared for:

Amy Mulhern
SAGE Environmental
172 Armistice Blvd.
Pawtucket, RI 02860

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Project: R090 Cushing Village

Case Number: 7D19027

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
7D19027-01	Influent (FRAC)	Water	04/18/2017	04/19/2017
7D19027-02	Effluent	Water	04/18/2017	04/19/2017

Project: R090 Cushing Village

Case Number: 7D19027

Request for Analysis

Effluent

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	EPA 200.7
Cadmium	EPA 200.9
Chloride	SM4500Cl-B
Chromium	EPA 200.7
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B
Mercury	EPA 245.1
Nickel	EPA 200.7
pH	SM4500-H-B
Selenium	SM3113-B
Silver	SM3113-B
Total Suspended Solids	SM2540-D
Trivalent Chromium	*** DEFAULT SPECIFIC METHC
Volatile Organic Compounds	EPA 624
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 200.7

Influent (FRAC)

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	EPA 200.7
Cadmium	EPA 200.9
Chloride	SM4500Cl-B
Chromium	EPA 200.7
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B

Project: R090 Cushing Village

Case Number: 7D19027

Mercury	EPA 245.1
Nickel	EPA 200.7
pH	SM4500-H-B
Selenium	SM3113-B
Silver	SM3113-B
Total Suspended Solids	SM2540-D
Trivalent Chromium	*** DEFAULT SPECIFIC METHC
Volatile Organic Compounds	EPA 8260C
Volatile Organic Compounds	EPA 624
Zinc	EPA 200.7

Project: R090 Cushing Village
Case Number: 7D19027

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Sample: Influent (FRAC) Work Order No: 7D19027

Sample Parameter	Results	Reporting Limit	Date Analyzed
pH, S.U.	9.13	NA	4/19/2017 @14:20
Total Suspended Solids, mg/L	8.80	2.00	4/19/2017
Ammonia, mg/L	0.546	0.100	4/21/2017
Chloride, mg/L	371	1.00	4/19/2017
Perchloroethylene, ug/L	2.03	1.00	4/21/2017
Trichloroethylene, ug/L	ND	1.00	4/21/2017
Cis-1,2dichlorethylene, ug/L	ND	1.00	4/21/2017
Vinyl chloride, ug/L	ND	1.00	4/21/2017
Antimony, ug/L	27.9	3.00	4/21/2017
Arsenic, ug/L	ND	1.00	4/21/2017
Cadmium, ug/L	ND	0.2	4/20/2017
Chromium III, ug/L	ND	1.00	4/21/2017
Chromium VI, ug/L	ND	1.00	4/19/2017 @18:13
Copper, ug/L	ND	5.00	4/21/2017
Iron, ug/L	347	13.0	4/21/2017
Lead, ug/L	ND	0.2	4/20/2017
Mercury, ug/L	ND	0.1	4/21/2017
Nickel, ug/L	30.4	1.00	4/21/2017
Selenium, ug/L	ND	1.00	4/20/2017
Silver, ug/L	0.2	0.1	4/20/2017
Zinc, ug/L	5.70	5.00	4/21/2017

NA = Not Applicable
ND = Not Detected

Sample: Effluent Work Order No: 7D19027

Sample Parameter	Results	Reporting Limit	Date Analyzed
pH, S.U.	6.92	NA	4/19/2017 @14:20
Total Suspended Solids, mg/L	3.20	2.00	4/19/2017
Ammonia, mg/L	0.476	0.100	4/21/2017
Chloride, mg/L	371	1.00	4/19/2017
Perchloroethylene, ug/L	ND	1.00	4/21/2017
Trichloroethylene, ug/L	ND	1.00	4/21/2017
Cis-1,2dichlorethylene, ug/L	ND	1.00	4/21/2017
Vinyl chloride, ug/L	ND	1.00	4/21/2017
Antimony, ug/L	32.9	3.00	4/21/2017
Arsenic, ug/L	ND	1.00	4/21/2017
Cadmium, ug/L	ND	0.2	4/20/2017
Chromium III, ug/L	ND	1.00	4/21/2017
Chromium VI, ug/L	ND	1.00	4/19/2017 @ 18:13
Copper, ug/L	9.00	5.00	4/21/2017
Iron, ug/L	93.7	13.0	4/21/2017
Lead, ug/L	5.8	0.2	4/20/2017
Mercury, ug/L	ND	0.1	4/21/2017
Nickel, ug/L	13.6	1.00	4/21/2017
Selenium, ug/L	ND	1.00	4/20/2017
Silver, ug/L	ND	0.1	4/20/2017
Zinc, ug/L	33.6	5.00	4/21/2017

NA = Not Applicable
ND = Not Detected

Project: R090 Cushing Village

Case Number: 7D19027

Notes and Definitions

Item	Definition
J	Below reporting limit
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

NEW ENGLAND TESTING LABORATORY, INC.
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

7 D 1 90276

CHAIN OF CUSTODY RECORD

PROJ. NO.: R090
PROJECT NAME/LOCATION: Cushing Village, Belmont, MA
CLIENT: SAGE Environmental Inc.
REPORT TO: Cricine@sage-enviro.com
INVOICE TO:

DATE	TIME	COMP	GRAB	SAMPLE I.D.	AQUEOUS	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	TESTS** VOCs (RCRA, TCL, Cis-1,2-DCE)	Ammonia (*)	Metals (*) (see below)	TSS, pH, Chloride, Cr VI	REMARKS
4/19/17	1530		X	Influent (FRAC)	X			(1) 5oml (2) 40 ml vial (3) 500 ml (4) 500 ml	Nitric HCl H_2SO_4 Non	X	X	X	X	RGP Permit # MAG910403
"	1535		X	Effluent	X			"	"	X	X	X	X	

Sampled by: (Signature) — Date/Time: 4/19/17 1630
Relinquished by: (Signature) — Date/Time: 4/19/17 11:20 — Received by: (Signature) — Date/Time: 4/19/17 1125
Relinquished by: (Signature) — Date/Time: 4/19/17 1300 — Received for Laboratory by: (Signature) — Date/Time: 4/19/17 13:00

Laboratory Remarks: Temp. received: 5 — Cooled: X

Special Instructions:
List Specific Detection Limit Requirements:
(*) RUSH (*)
48 ~~72~~ Hr T.A.T

Turnaround (Business Days)_____

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

(*) Metals (Total) are: Antimony, As, Cd, Cu, chrom III, Fe, Pb, Selenium, Hg, Ag, Ni, Zn (12)

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New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 7D28031
Client Project: R090 Cushing Village

Report Date: 03-May-2017

Prepared for:

Cathy Racine
SAGE Environmental
172 Armistice Blvd
Pawtucket, RI 02860

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Project: R090 Cushing Village

Case Number: 7D28031

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
7D28031-01	Influent	Water	04/27/2017	04/28/2017
7D28031-02	Effluent	Water	04/27/2017	04/28/2017

Project: R090 Cushing Village

Case Number: 7D28031

Request for Analysis

Effluent

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	SM3113-B
Cadmium	SM3113-B
Chloride	SM4500Cl-B
Chromium	EPA 6010C
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B
Mercury	EPA 245.1
Nickel	EPA 200.7
Selenium	SM3113-B
Silver	SM3113-B
Total Suspended Solids	SM2540-D
Trivalent Chromium	Calculation
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 200.7

Influent

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	SM3113-B
Cadmium	SM3113-B
Chloride	SM4500Cl-B
Chromium	EPA 6010C
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B
Mercury	EPA 245.1
Nickel	EPA 200.7

Project: R090 Cushing Village

Case Number: 7D28031

Selenium	SM3113-B
Silver	SM3113-B
Total Suspended Solids	SM2540-D
Trivalent Chromium	Calculation
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 200.7

Project: R090 Cushing Village
Case Number: 7D28031

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Influent

7D28031-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Metals						
Mercury	**0.000223**		0.000200	mg/L	05/02/17	05/02/17
Silver	**0.000150**		0.000125	mg/L	05/01/17	05/02/17
Arsenic	ND		0.00125	mg/L	05/01/17	05/01/17
Cadmium	**0.000152**		0.000125	mg/L	05/01/17	05/02/17
Lead	**0.00140**		0.000250	mg/L	05/01/17	05/01/17
Selenium	ND		0.00125	mg/L	05/01/17	05/02/17
Chromium	**0.00174**		0.00125	mg/L	05/01/17	05/02/17
Copper	ND		0.00500	mg/L	05/01/17	05/02/17
Iron	**1.47**		0.0125	mg/L	05/01/17	05/02/17
Nickel	**0.00226**		0.00125	mg/L	05/01/17	05/02/17
Antimony	ND		0.00125	mg/L	05/01/17	05/02/17
Zinc	**0.0108**		0.00500	mg/L	05/01/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Effluent

7D28031-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Metals						
Mercury	ND		0.000200	mg/L	05/02/17	05/02/17
Silver	ND		0.000125	mg/L	05/01/17	05/02/17
Arsenic	**0.00266**		0.00125	mg/L	05/01/17	05/01/17
Cadmium	ND		0.000125	mg/L	05/01/17	05/02/17
Lead	**0.000482**		0.000250	mg/L	05/01/17	05/01/17
Selenium	ND		0.00125	mg/L	05/01/17	05/02/17
Chromium	ND		0.00125	mg/L	05/01/17	05/02/17
Copper	ND		0.00500	mg/L	05/01/17	05/02/17
Iron	**0.0514**		0.0125	mg/L	05/01/17	05/02/17
Nickel	ND		0.00125	mg/L	05/01/17	05/02/17
Antimony	**0.00166**		0.00125	mg/L	05/01/17	05/02/17
Zinc	**0.00527**		0.00500	mg/L	05/01/17	05/02/17

Sample: Influent Work Order No: 7D28031

Sample Parameter	Results	Reporting Limit	Date Analyzed
Chromium III, mg/L	0.00174	0.00125	5/2/2017

Sample: Effluent

Sample Parameter	Results	Reporting Limit	Date Analyzed
Chromium III, mg/L	ND	0.00125	5/2/2017

NA = Not Applicable
ND = Not Detected

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Influent

7D28031-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Volatile Organic Compounds						
cis-1,2-Dichloroethene	ND		1.00	ug/l	05/02/17	05/02/17
Tetrachloroethene	**1.92**		1.00	ug/l	05/02/17	05/02/17
Trichloroethene	ND		1.00	ug/l	05/02/17	05/02/17
Vinyl Chloride	ND		1.00	ug/l	05/02/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Effluent

7D28031-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Volatile Organic Compounds						
cis-1,2-Dichloroethene	ND		1.00	ug/l	05/02/17	05/02/17
Tetrachloroethene	ND		1.00	ug/l	05/02/17	05/02/17
Trichloroethene	ND		1.00	ug/l	05/02/17	05/02/17
Vinyl Chloride	ND		1.00	ug/l	05/02/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Influent

7D28031-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
General Chemistry						
Ammonia	**0.434**		0.100	mg/L	05/02/17	05/02/17
Chloride	**333**		10.0	mg/L	05/02/17	05/02/17
Hexavalent chromium	ND		0.0100	mg/L	04/28/17 18:00	04/28/17 18:00
Total Suspended Solids	**31.0**		5.00	mg/L	05/01/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28031

Sample: Effluent

7D28031-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
General Chemistry						
Ammonia	**0.189**		0.100	mg/L	05/02/17	05/02/17
Chloride	**384**		10.0	mg/L	05/02/17	05/02/17
Hexavalent chromium	ND		0.0100	mg/L	04/28/17 18:00	04/28/17 18:00
Total Suspended Solids	ND		2.00	mg/L	05/01/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28031

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

NEW ENGLAND TESTING LABORATORY, IN
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

7D2 8031

PROJ. NO.	PROJECT NAME/LOCATION
R090	BELMONT, MA

CLIENT: SAGE
REPORT TO: OFFICE
INVOICE TO: ↓

DATE	TIME	COMP	GRAB	SAMPLE I.D.	AQUEOUS	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	TESTS** VOCs (ACE, TCE, cis-1,2 DCE, VC)	Ammonia	Metals * (see below)	TSS, Chloride, Cr III			REMARKS
4/27	1530		X	Influent	X			6	HNO_3, H_2SO_4 HCl, NaOH	X	X	X	X			RGP Permit # MAG910403
↓	1535		X	Effluent	X			↓	↓	X	X	X	X			

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	4/27 15:35		
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	4/28/17 2:20	[signature]	4/28/17 2:20
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time
[signature]	4-28-17 3:30	[signature]	4/28/17 3:30

Laboratory Remarks:
Temp. received: 3°
Cooled ☐

Special Instructions:
List Specific Detection Limit Requirements:

Turnaround (Business Days) 48 hr

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

* Metals (Total): Antimony, As, Cd, Cu, Chrom III, Fe, Pb, Selenium, Hg, Ag, Ni, Zn (12)

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New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 7D28032
Client Project: R090 Cushing Village

Report Date: 03-May-2017

Prepared for:

Cathy Racine
SAGE Environmental
172 Armistice Blvd
Pawtucket, RI 02860

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Project: R090 Cushing Village

Case Number: 7D28032

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
7D28032-01	Outfall	Water	04/27/2017	04/28/2017
7D28032-02	Outfall-DUP	Water	04/27/2017	04/28/2017

Project: R090 Cushing Village
Case Number: 7D28032

Request for Analysis

Outfall

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	SM3113-B
Cadmium	SM3113-B
Calcium	SM3120-B
Chromium	EPA 6010C
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B
Magnesium	SM3120-B
Mercury	EPA 245.1
Nickel	EPA 200.7
Selenium	SM3113-B
Silver	SM3113-B
Trivalent Chromium	Calculation
Zinc	EPA 200.7

Outfall-DUP

Analysis	Method
Ammonia	SM4500-NH3-D
Antimony	EPA 200.7
Arsenic	SM3113-B
Cadmium	SM3113-B
Calcium	SM3120-B
Chromium	EPA 6010C
Copper	EPA 200.7
Hexavalent Chromium	SM3500-Cr-B
Iron	EPA 200.7
Lead	SM3113-B
Magnesium	SM3120-B
Mercury	EPA 245.1
Nickel	EPA 200.7

Selenium	SM3113-B
Silver	SM3113-B
Trivalent Chromium	Calculation
Zinc	EPA 200.7

Project: R090 Cushing Village
Case Number: 7D28032

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Project: R090 Cushing Village

Case Number: 7D28032

Sample: Outfall

7D28032-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Metals in water by ICAP-AES						
Hardness as CaCO3	**150**		0.0312	mg/L	05/01/17	05/02/17
Total Metals						
Mercury	ND		0.000200	mg/L	05/02/17	05/02/17
Silver	ND		0.000125	mg/L	05/01/17	05/02/17
Arsenic	ND		0.00125	mg/L	05/01/17	05/01/17
Cadmium	**0.000158**		0.000125	mg/L	05/01/17	05/02/17
Lead	**0.00120**		0.000250	mg/L	05/01/17	05/01/17
Selenium	ND		0.00125	mg/L	05/01/17	05/02/17
Calcium	**44.3**		0.0125	mg/L	05/01/17	05/02/17
Magnesium	**9.66**		0.0125	mg/L	05/01/17	05/02/17
Chromium	ND		0.00125	mg/L	05/01/17	05/02/17
Copper	ND		0.00500	mg/L	05/01/17	05/02/17
Iron	**0.257**		0.0125	mg/L	05/01/17	05/02/17
Nickel	ND		0.00125	mg/L	05/01/17	05/02/17
Antimony	ND		0.00125	mg/L	05/01/17	05/02/17
Zinc	**0.0190**		0.00500	mg/L	05/01/17	05/02/17

Project: R090 Cushing Village

Case Number: 7D28032

Sample: Outfall-DUP

7D28032-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Metals in water by ICAP-AES						
Hardness as CaCO3	**155**		0.0312	mg/L	05/01/17	05/02/17
Total Metals						
Mercury	ND		0.000200	mg/L	05/02/17	05/02/17
Silver	ND		0.000125	mg/L	05/01/17	05/02/17
Arsenic	ND		0.00125	mg/L	05/01/17	05/01/17
Cadmium	**0.000150**		0.000125	mg/L	05/01/17	05/02/17
Lead	**0.00115**		0.000250	mg/L	05/01/17	05/01/17
Selenium	ND		0.00125	mg/L	05/01/17	05/02/17
Calcium	**45.8**		0.0125	mg/L	05/01/17	05/02/17
Magnesium	**9.97**		0.0125	mg/L	05/01/17	05/02/17
Chromium	ND		0.00125	mg/L	05/01/17	05/02/17
Copper	ND		0.00500	mg/L	05/01/17	05/02/17
Iron	**0.271**		0.0125	mg/L	05/01/17	05/02/17
Nickel	ND		0.00125	mg/L	05/01/17	05/02/17
Antimony	ND		0.00125	mg/L	05/01/17	05/02/17
Zinc	**0.0204**		0.00500	mg/L	05/01/17	05/02/17

Sample: Influent Work Order No: 7D28032

Sample Parameter	Results	Reporting Limit	Date Analyzed
Chromium III, mg/L	ND	0.00125	5/2/2017

Sample: Effluent

Sample Parameter	Results	Reporting Limit	Date Analyzed
Chromium III, mg/L	ND	0.00125	5/2/2017

NA = Not Applicable
ND = Not Detected

Project: R090 Cushing Village

Case Number: 7D28032

Sample: Outfall

7D28032-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
General Chemistry						
Ammonia	ND		0.100	mg/L	05/02/17	05/02/17
Hexavalent chromium	ND		0.0100	mg/L	04/28/17 18:00	04/28/17 18:00

Project: R090 Cushing Village

Case Number: 7D28032

Sample: Outfall-DUP

7D28032-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
General Chemistry						
Ammonia	**0.125**		0.100	mg/L	05/02/17	05/02/17
Hexavalent chromium	ND		0.0100	mg/L	04/28/17 18:00	04/28/17 18:00

Project: R090 Cushing Village

Case Number: 7D28032

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

NEW ENGLAND TESTING LABORATORY, INC.
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

7 D 2 8032 %

CHAIN OF CUSTODY RECORD

PROJ. NO.: R090
PROJECT NAME/LOCATION: BELMONT, MA
CLIENT: SAGE
REPORT TO: Office
INVOICE TO:

DATE	TIME	COMP	GRAB	SAMPLE I.D.	AQUEOUS	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	TESTS** Hardness	Metals (Total) *	Ammonia	Alkalinity			REMARKS
4/27	1600		X	OUTFALL	X			4	NON, HNO_3	X	X	X				OUTFALL STATION WEB013
↓	1600		X	OUTFALL - DUP	X			↓	H_2SO_4 ↓	X	X	X	*			(WELLINGTON BROOK)

Sampled by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	4/27 1600		
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Date/Time**
[signature]	4/28/17 2:20	[signature]	4/28/17 2:20
Relinquished by: (Signature)	**Date/Time**	**Received for Laboratory by: (Signature)**	**Date/Time**
[signature]	4/28-17 3:30	[signature]	4/28/17 330

Laboratory Remarks:
Temp. received: 3°
Cooled ☐

Special Instructions:
List Specific Detection Limit Requirements:

Turnaround (Business Days): 48 Hr

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

* Metals (Total): Antimony, Total Recoverable Arsenic, Cadmium, Chrome III, Chrome VI, copper, iron, lead, mercury, nickel, selenium, silver, zinc

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 7F02011
Client Project: R090 Cushing Village

Report Date: 07-June-2017

Prepared for:

Cathy Racine
SAGE Environmental
172 Armistice Blvd
Pawtucket, RI 02860

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Project: R090 Cushing Village

Case Number: 7F02011

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
7F02011-01	Influent- PAHs	Water	06/02/2017	06/02/2017

Project: R090 Cushing Village

Case Number: 7F02011

Request for Analysis

Influent- PAHs

Analysis	Method
Acid Base/Neutral Extractables	EPA 625

Project: R090 Cushing Village
Case Number: 7F02011

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Project: R090 Cushing Village

Case Number: 7F02011

getResult

Sample: Influent- PAHs

7F02011-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Base/Neutral & Acid Extractables						
Acenaphthene	N.D.		0.1	ug/l	06/06/17	06/07/17
Acenaphthylene	N.D.		0.1	ug/l	06/06/17	06/07/17
Anthracene	N.D.		0.1	ug/l	06/06/17	06/07/17
Benzo(a)anthracene	N.D.		0.1	ug/l	06/06/17	06/07/17
Benzo(a)pyrene	N.D.		0.1	ug/l	06/06/17	06/07/17
Benzo(b)fluoranthene	N.D.		0.1	ug/l	06/06/17	06/07/17
Benzo(g,h,i)perylene	N.D.		0.1	ug/l	06/06/17	06/07/17
Benzo(k)fluoranthene	N.D.		0.1	ug/l	06/06/17	06/07/17
Chrysene	N.D.		0.1	ug/l	06/06/17	06/07/17
Dibenz(a,h)anthracene	N.D.		0.1	ug/l	06/06/17	06/07/17
Fluoranthene	N.D.		0.1	ug/l	06/06/17	06/07/17
Fluorene	N.D.		0.1	ug/l	06/06/17	06/07/17
Indeno(1,2,3-cd)pyrene	N.D.		0.1	ug/l	06/06/17	06/07/17
Naphthalene	N.D.		0.1	ug/l	06/06/17	06/07/17
Phenanthrene	N.D.		0.1	ug/l	06/06/17	06/07/17
Pyrene	N.D.		0.1	ug/l	06/06/17	06/07/17

Project: R090 Cushing Village

Case Number: 7F02011

Quality Control

Base/Neutral & Acid Extractables

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B7F0127 - Sep-Funnel-extraction										
Blank (B7F0127-BLK1)					Prepared: 06/06/17 Analyzed: 06/07/17					
Acenaphthene	ND		2.00	ug/l						
Acenaphthylene	ND		2.00	ug/l						
Anthracene	ND		2.00	ug/l						
Benzo(a)anthracene	ND		2.00	ug/l						
Benzo(a)pyrene	ND		2.00	ug/l						
Benzo(b)fluoranthene	ND		2.00	ug/l						
Benzo(g,h,i)perylene	ND		2.00	ug/l						
Benzo(k)fluoranthene	ND		2.00	ug/l						
Chrysene	ND		2.00	ug/l						
Dibenz(a,h)anthracene	ND		2.00	ug/l						
Fluoranthene	ND		2.00	ug/l						
Fluorene	ND		2.00	ug/l						
Indeno(1,2,3-cd)pyrene	ND		2.00	ug/l						
Naphthalene	ND		2.00	ug/l						
Phenanthrene	ND		2.00	ug/l						
Pyrene	ND		2.00	ug/l						
Surrogate: Nitrobenzene-d5			*33.6*	ug/l	*50.0*		*67.2*	*30-130*		
Surrogate: p-Terphenyl-d14			*40.0*	ug/l	*50.0*		*79.9*	*50-130*		
Surrogate: 2-Fluorobiphenyl			*28.6*	ug/l	*50.0*		*57.1*	*35-130*		
LCS (B7F0127-BS1)					Prepared: 06/06/17 Analyzed: 06/07/17					
Acenaphthene	656		40.0	ug/l	1000		65.6	34-130		
Acenaphthylene	703		40.0	ug/l	1000		70.3	35-113		
Anthracene	836		40.0	ug/l	1000		83.6	45-121		
Benzo(a)anthracene	939		40.0	ug/l	1000		93.9	52-130		
Benzo(a)pyrene	975		40.0	ug/l	1000		97.5	46-130		
Benzo(b)fluoranthene	990		40.0	ug/l	1000		99.0	45-130		
Benzo(g,h,i)perylene	1010		40.0	ug/l	1000		101	36-130		
Benzo(k)fluoranthene	967		40.0	ug/l	1000		96.7	46-130		
Chrysene	930		40.0	ug/l	1000		93.0	47-130		
Dibenz(a,h)anthracene	966		40.0	ug/l	1000		96.6	48-130		
Fluoranthene	893		40.0	ug/l	1000		89.3	48-122		
Fluorene	792		40.0	ug/l	1000		79.2	40-130		
Indeno(1,2,3-cd)pyrene	982		40.0	ug/l	1000		98.2	41-130		
Naphthalene	539		40.0	ug/l	1000		53.9	27-104		
Phenanthrene	847		40.0	ug/l	1000		84.7	48-130		
Pyrene	867		40.0	ug/l	1000		86.7	45-130		
Surrogate: Nitrobenzene-d5			*640*	ug/l	*1000*		*64.0*	*30-130*		
Surrogate: p-Terphenyl-d14			*999*	ug/l	*1000*		*99.9*	*50-130*		
Surrogate: 2-Fluorobiphenyl			*535*	ug/l	*1000*		*53.5*	*35-130*		

Project: R090 Cushing Village

Case Number: 7F02011

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference.
%REC	Percent Recovery.
Source	Sample that was matrix spiked or duplicated.

NEW ENGLAND TESTING LABORATORY, INC.
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

CHAIN OF CUSTODY RECORD

7 F 0 2011

PROJ. NO.	PROJECT NAME/LOCATION
R090	Cushing Village, Belmont, MA

CLIENT: SAGE Env

REPORT TO: Clarice Seje - enviro, com

INVOICE TO:

DATE	TIME	COMP	GRAB	SAMPLE I.D.	AQUEOUS	SOIL	OTHER	NO. OF CONTAINERS	PRESERVATIVE	TESTS** PAHs (EPA 625 SIM)	REMARKS
6/2/17	1130		X	Influent - PAHs			6	1L Amber	Non	X	RGP #MAG910403

Sampled by: (Signature)

Date/Time: 6/2/17 12pm

Received by: (Signature)

Date/Time: 6/2 1200

Relinquished by: (Signature)

Date/Time: 6-2-17 335

Received by: (Signature)

Date/Time: 6/2/17 335

Relinquished by: (Signature)

Date/Time:

Received for Laboratory by: (Signature)

Date/Time:

Laboratory Remarks:
Temp. received: 4°
Cooled ☐

Special Instructions:
List Specific Detection Limit Requirements:
DL = 0.1 ug/L or Lower Please

Turnaround (Business Days)_____

**Netlab subcontracts the following tests: Radiologicals, Radon, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

ATTACHMENT D

Work Order: 7D28032
Client: Sage Environmental
Project: R090 - Cushing Village
Date: 05-03-17
Laboratory: New England Testing Laboratory, Inc.
Received: 04-28-17

		Sample#:	1		Sample#:	2	
		Lab_ID:	7D28032-01		Lab_ID:	7D28032-02	
		Client_ID:	Outfall		Client_ID:	Outfall Dup	
		Date_Sampled:	4/27/2017		Date_Sampled:	4/27/2017	
		Matrix:	Water		Matrix:	Water	
		Date_Received:	4/28/2017		Date_Received:	4/28/2017	
		Moisture:	N/A		Moisture:	N/A	
Parameter	CAS	Hit	Result QL		Hit	Result QL	
Ammonia by SM4500-NH3-D (mg/L):							
Ammonia			0.100	0.100	X	0.125	0.100
Trivalent Chromium by Calculation (mg/L):							
Chromium	7440-47-3		0.00125	0.00125		0.00125	0.00125
Total Metals by EPA 200.7 (mg/L):							
Antimony	7440-36-0		0.00125	0.00125		0.00125	0.00125
Chromium			0.00125	0.00125		0.00125	0.00500
Copper	7440-50-8		0.00500	0.00500		0.00500	0.00500
Iron	7439-89-6	X	0.257	0.0125	X	0.271	0.0125
Nickel	7440-02-0		0.00125	0.00125		0.00125	0.00125
Zinc	7440-66-6	X	0.0190	0.00500	X	0.0204	0.00500
Total Metals by SM3113B (mg/L):							
Arsenic	7440-38-2		0.00125	0.00125		0.00125	0.00125
Cadmium	7440-43-9	X	0.000158	0.000125	X	0.000150	0.000125
Lead	7439-92-1	X	0.00120	0.000250	X	0.00115	0.000250
Selenium	7782-49-2		0.00125	0.00125		0.00125	0.00125
Silver	7440-22-4		0.000125	0.000125		0.000125	0.000125
Total Metals by EPA 245.1 (mg/L):							
Mercury	7439-97-6		0.000200	0.000200		0.000200	0.000200
Hardness by 6010C (mg/L):							
Hardness		X	150	0.0312	X	155	0.0312
Hexavalent Chromium by SM3500-Cr-B (mg/L):							
Hexavalent Chromium	14797-55-8		0.0100	0.0100		0.0100	0.0100

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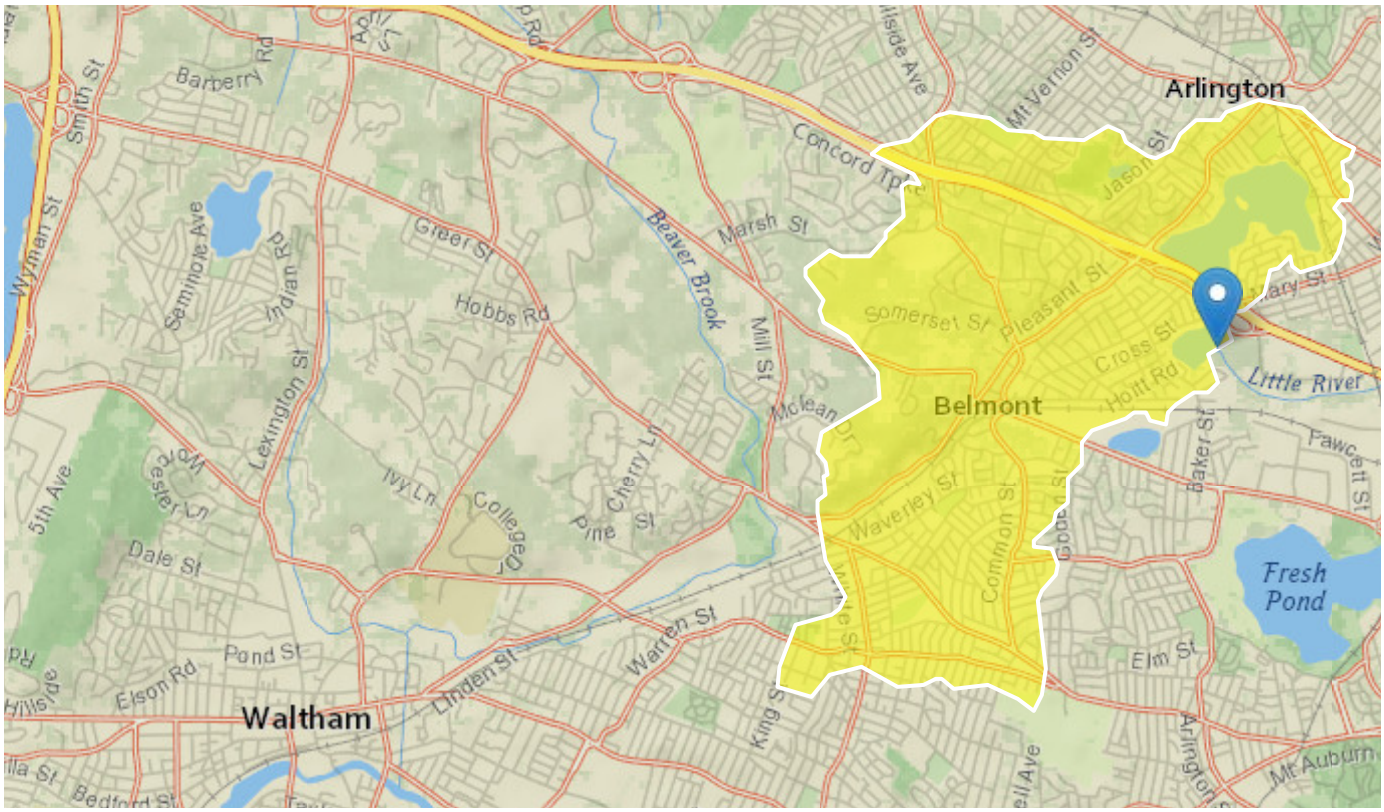
StreamStats Report

Region ID:
MA
Workspace ID:
MA20170417150327467000
Clicked Point (Latitude, Longitude):
42.39963, -71.15742
Time:
2017-04-17 17:04:24 -0400



Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	3.56	square miles
DRFTPERSTR	Area of stratified drift per unit of stream length	0.45	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	2.907	percent

Low-Flow Statistics Parameters [100 Percent (3.56 square miles) Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	3.56	square miles	1.61	149
DRFTPERSTR	Stratified Drift per Stream Length	0.45	square mile per mile	0	1.29
BSLDEM250	Mean Basin Slope from 250K DEM	2.907	percent	0.32	24.6
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Flow Report [100 Percent (3.56 square miles) Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit	Average standard error (of either estimate or prediction)	Lower Prediction Interval	Upper Prediction Interval
7 Day 2 Year Low Flow	0.581	ft^3/s	49.5	0.152	2.14
7 Day 10 Year Low Flow	0.302	ft^3/s	70.8	0.0638	1.33

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/)

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Enter number values in green boxes below

Enter values in the units specified

0.1952	Q_R = Enter upstream flow in **MGD**
0.144	Q_P = Enter discharge flow in **MGD**
0	Downstream 7Q10

Enter a dilution factor, if other than zero

2.35	

Enter values in the units specified

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

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

6.5	pH in **Standard Units**
25	Temperature in **°C**
0.1	Ammonia in **mg/L**
20	Hardness in **mg/L** $CaCO_3$
0	Salinity in **ppt**
0.1	Antimony in **µg/L**
0.1	Arsenic in **µg/L**
0.0999	Cadmium in **µg/L**
0.1	Chromium III in **µg/L**
0.1	Chromium VI in **µg/L**
0	Copper in **µg/L**
0.1	Iron in **µg/L**
0.1	Lead in **µg/L**
0.1	Mercury in **µg/L**
0.1	Nickel in **µg/L**
0.1	Selenium in **µg/L**
0.1	Silver in **µg/L**
0.1	Zinc in **µg/L**

Enter **influent** concentrations in the units specified

371	TRC in **µg/L**
0.1	Ammonia in **mg/L**
0	Antimony in **µg/L**
0	Arsenic in **µg/L**
0.1	Cadmium in **µg/L**
1.25	Chromium III in **µg/L**
0	Chromium VI in **µg/L**
0.5	Copper in **µg/L**
257	Iron in **µg/L**
0	Lead in **µg/L**
0	Mercury in **µg/L**
0	Nickel in **µg/L**
0	Selenium in **µg/L**
0	Silver in **µg/L**
0	Zinc in **µg/L**
0	Cyanide in **µg/L**
0	Phenol in **µg/L**
0	Carbon Tetrachloride in **µg/L**
2.03	Tetrachloroethylene in **µg/L**
0	Total Phthalates in **µg/L**
0	Diethylhexylphthalate in **µg/L**
0	Benzo(a)anthracene in **µg/L**
0	Benzo(a)pyrene in **µg/L**
0	Benzo(b)fluoranthene in **µg/L**
0	Benzo(k)fluoranthene in **µg/L**
0	Chrysene in **µg/L**
0	Dibenzo(a,h)anthracene in **µg/L**
0	Indeno(1,2,3-cd)pyrene in **µg/L**
0	Methyl-tert butyl ether in **µg/L**

Notes:

Freshwater: 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_t; 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

I. Dilution Factor Calculation Method

A. 7Q10

Refer to Appendix V for determining critical low flow; must be approved by State before use in calculations.

B. Dilution Factor

Calculated as follows:

$$Df = \frac{Q_R + Q_P}{Q_P}$$

Q_R = 7Q10 in MGD

Q_P = Discharge flow, in MGD

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Downstream hardness, calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream hardness in mg/L

Q_d = Discharge flow in MGD

C_d = Discharge hardness in mg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) hardness in mg/L

Q_r = Downstream receiving water flow in MGD

Step 2. Total recoverable water quality criteria for hardness-dependent metals, calculated as follows:

Total Recoverable Criteria = $\exp\{m_c [\ln(h)] + b_c\}$

m_c = Pollutant-specific coefficient (m_a for silver)

b_c = Pollutant-specific coefficient (b_a for silver)

ln = Natural logarithm

h = Hardness calculated in Step 1

Step 3. Total recoverable water quality criteria for non-hardness-dependent metals, calculated as follows:

$$\text{WQC in } \mu g/L = \frac{\text{dissolved WQC in } \mu g/L}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

C_d = WQBEL in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in µg/L
Q_d = Discharge flow in MGD
Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream concentration in µg/L
Q_d = Discharge flow in MGD
C_d = Influent concentration in µg/L
Q_s = Upstream flow (7Q10) in MGD
C_s = Upstream (receiving water) concentration in µg/L
Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1, above, and the discharge concentration of a parameter are greater than the WQC calculated for that parameter in accordance with II.A, above
AND
2) the WQBEL determined for that parameter in accordance with II.B, above, is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in Part 2.1.1

of the RGP for that parameter applies.

Step 2. For a parameter not sampled in or not detected in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;
AND
2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in

Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor	2.4					
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	**26**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	1507	µg/L		
Arsenic	**104**	µg/L	23	µg/L		
Cadmium	**10.2**	µg/L	0.5470	µg/L		
Chromium III	**323**	µg/L	218.8	µg/L		
Chromium VI	**323**	µg/L	26.8	µg/L		
Copper	**242**	µg/L	23.8	µg/L		
Iron	**5000**	µg/L	2355	µg/L		
Lead	**160**	µg/L	8.29	µg/L		
Mercury	**0.739**	µg/L	2.00	µg/L		
Nickel	**1450**	µg/L	132.7	µg/L		
Selenium	**235.8**	µg/L	11.6	µg/L		
Silver	**35.1**	µg/L	10.3	µg/L		
Zinc	**420**	µg/L	305.1	µg/L		
Cyanide	**178**	mg/L	12.2	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	707	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**	µg/L	3.8	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	7.8	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	5.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0090	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	47	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

I. Dilution Factor Calculation Method

A. 7Q10

No flow assumed at critical low flow for saltwater unless otherwise approved by the State

B. Dilution Factor

No dilution assumed for saltwater, unless otherwise approved by the State

II. Effluent Limitation Calculation Method

A. Calculate Water Quality Criterion:

Step 1. Not applicable to saltwater

Step 2. Not applicable to saltwater

Step 3. Total recoverable water quality criteria for dissolved metals, calculated as follows:

$$\text{WQC in } \mu g/L = \frac{\text{dissolved WQC in } \mu g/L}{\text{dissolved to total recoverable factor}}$$

B. Calculate WQBEL:

Step 1. WQBEL calculated as follows for parameter sampled in and detected in the receiving water:

$$C_d = \frac{Q_r C_r - Q_s C_s}{Q_d}$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

C_d = WQBEL in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Ustream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

Step 2. WQBEL calculated as follows for parameter not sampled in or not detected in receiving water:

$$C_d = (Q_r/Q_d) \times C_r$$

C_r = Water quality criterion in µg/L

Q_d = Discharge flow in MGD

Q_r = Downstream receiving water flow in MGD

C. Determine if a WQBEL applies:

Step 1. For parameter sampled in and detected in receiving water, downstream concentrations calculated as follows:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

C_r = Downstream concentration in µg/L

Q_d = Discharge flow in MGD

C_d = Influent concentration in µg/L

Q_s = Upstream flow (7Q10) in MGD

C_s = Upstream (receiving water) concentration in µg/L

Q_r = Downstream receiving water flow in MGD

The WQBEL applies if:

1) the projected downstream concentration calculated in accordance with Step 1, above, and the discharge concentration of a parameter is greater than the WQC calculated for that parameter in accordance with II.A, above

AND

2) the WQBEL determined for that parameter in accordance with II.B, above, is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in Part 2.1.1 of the RGP for that parameter applies.

Step 2. For a parameter not detected in or not sampled in receiving water, the WQBEL applies if:

1) the discharge concentration of a parameter is greater than the WQBEL determined for that parameter in accordance with II.A or II.B, above;

AND

2) the WQBEL determined for that parameter in accordance with II.A or II.B, above is less than the TBEL in Part 2.1.1 of the RGP for that parameter. Otherwise, the TBEL in Part 2.1.1 of the RGP for that parameter applies.

Dilution Factor	2.4					
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	**17.7**	µg/L	50	µg/L
Total Suspended Solids	**30**	mg/L	---			
Antimony	**206**	µg/L	1507	µg/L		
Arsenic	**104**	µg/L	85	µg/L		
Cadmium	**10.2**	µg/L	20.7	µg/L		
Chromium III	**323**	µg/L	235.4	µg/L		
Chromium VI	**323**	µg/L	118	µg/L		
Copper	**242**	µg/L	8.8	µg/L		
Iron	**5000**	µg/L	---	µg/L		
Lead	**160**	µg/L	19.9	µg/L		
Mercury	**0.739**	µg/L	2.47	µg/L		
Nickel	**1450**	µg/L	19.4	µg/L		
Selenium	**235.8**	µg/L	167	µg/L		
Silver	**35.1**	µg/L	5.1	µg/L		
Zinc	**420**	µg/L	202	µg/L		
Cyanide	**178**	mg/L	2.4	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	**7.97**	mg/L	---			
Phenol	**1,080**	µg/L	707	µg/L		
C. Halogenated VOCs						
Carbon Tetrachloride	**4.4**		3.8	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	7.8	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	5.2	µg/L		
Total Group I Polycyclic Aromatic Hydrocarbons	**1.0**	µg/L	---			
Benzo(a)anthracene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(a)pyrene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(b)fluoranthene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Benzo(k)fluoranthene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Chrysene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Dibenzo(a,h)anthracene	**1.0**	µg/L	0.0090	µg/L	---	µg/L
Indeno(1,2,3-cd)pyrene	**1.0**	µg/L	0.0090	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	47	µg/L		
tert-Butyl Alcohol	**120**	µg/L	---			
tert-Amyl Methyl Ether	**90**	µg/L	---			

ATTACHMENT E

United States Department of the Interior

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

In Reply Refer To: May 10, 2017
Consultation Code: 05E1NE00-2017-SLI-1510
Event Code: 05E1NE00-2017-E-03015
Project Name: Cushing Village

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-1510

Event Code: 05E1NE00-2017-E-03015

Project Name: Cushing Village

Project Type: DEVELOPMENT

Project Description: Redevelopment of an urban site containing buildings and a paved parking lot. The redevelopment project involves construction of a new mixed use retail residential building with underground parking. Effluent generated during construction dewatering and long-term post-construction drainage of the foundation will be treated prior to discharge to the municipal storm water system.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.380201817951075N71.17515158083765W

Counties: Middlesex, 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.

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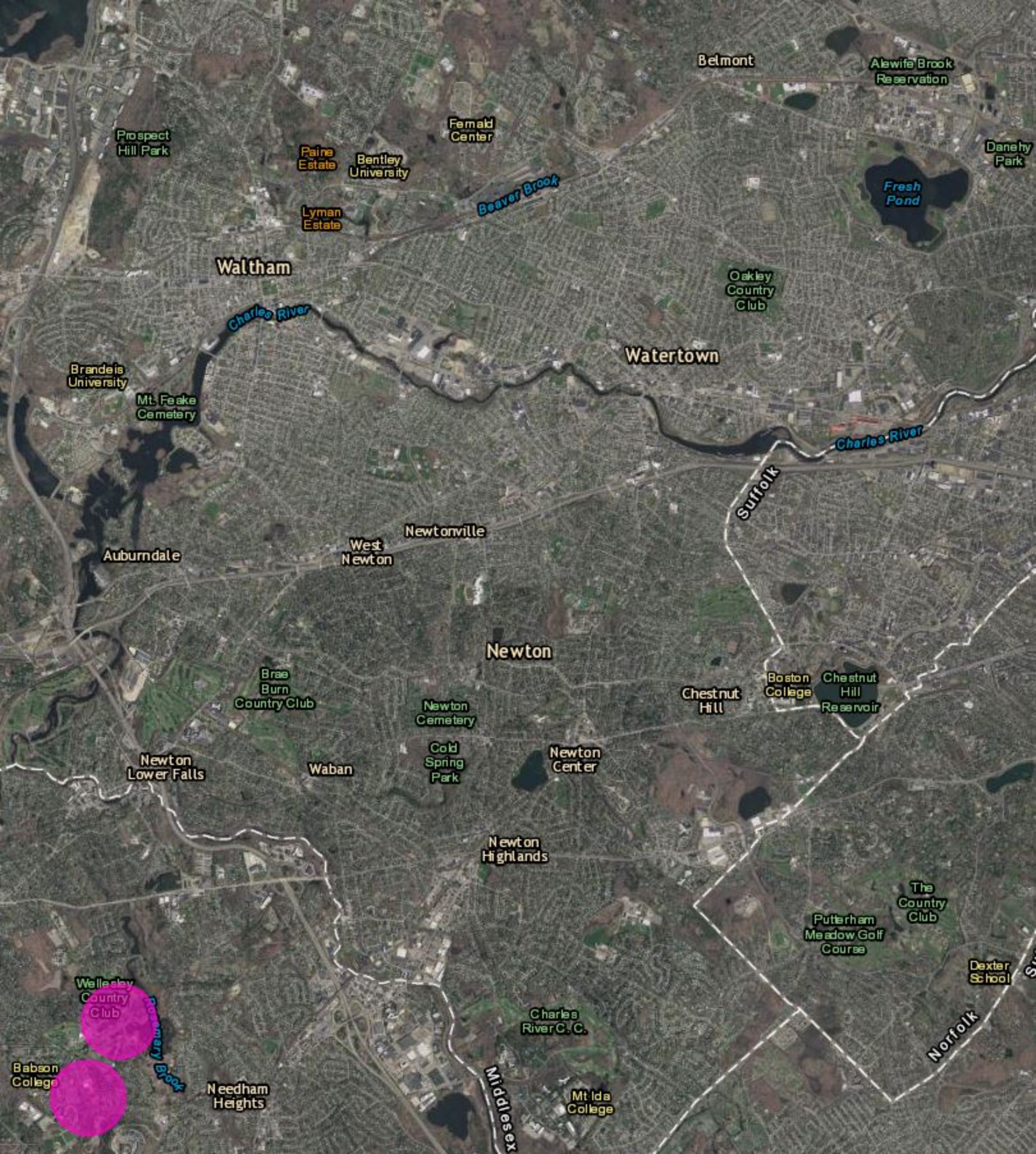
Belmont
Alewife Brook Reservation
Prospect Hill Park
Fernald Center
Paine Estate
Bentley University
Beaver Brook
Lyman Estate
Fresh Pond
Danehy Park
Waltham
Oakley Country Club
Charles River
Watertown
Brandeis University
Mt. Feake Cemetery
Charles River
Suffolk
Newtonville
West Newton
Auburndale
Newton
Brae Burn Country Club
Newton Cemetery
Chestnut Hill
Boston College
Chestnut Hill Reservoir
Cold Spring Park
Newton Center
Newton Lower Falls
Waban
Newton Highlands
The Country Club
Putterham Meadow Golf Course
Dexter School
Wellesley Country Club
Babson College
Rosemary Brook
Needham Heights
Charles River C. C.
Middlesex
Mt Ida College
Norfolk

ATTACHMENT F

Documentation Supporting the Absence of Effects on Historic Properties

Notice of Intent to Discharge Effluent under the Final 2017 Remedial General Permit

Cushing Village, Belmont, Massachusetts

The Project Site consists of six lots located between Belmont Street and Trapelo Road in the Town of Belmont Massachusetts. These lots include 102-104 Trapelo Road, 112 Trapelo Road, 1 Horne road, 495-501 Common Street, 505-507 Common Street, 527 Common Street and a municipal parking lot. One lot 102-104 Trapelo Road contained a structure that was not of relatively recent construction.

The lot identified as 102-104 Trapelo Road was formerly occupied by the S.S. Pierce Building which was constructed in 1905 as the first commercial business in Cushing Square. The building was moved to the 102-104 Trapelo Road location in 1914. The business initially was operated as a general store, and in 1920 was used as a grocery store. More recently the building was occupied by a variety of businesses including a Chinese restaurant, an electrical contractor and a nail salon.

The building was demolished on February 20, 2017 with the approval of the Town of Belmont Planning Board as part of the decision to approve construction of the Cushing Village Project *Decision on Application of Smith Legacy Partners, LLC for a Special Permit with Design and Site Plan review and Waivers Pursuant to Section 8 (Cushing Square Overlay District) of the Town of Belmont Zoning By-Law July 27, 2013* (Decision). Item 3.C. of the Decision stated "While none of the buildings within the current footprint of the subject properties are capable of being preserved, the Board finds that the design standards pertaining to preservation of Historic Structures have been met and are sensitive to adjacent historic structures".