AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act, as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53),

Town of Great Barrington, Massachusetts

is authorized to discharge from the facility located at

Great Barrington Wastewater Treatment Plant
100 Bentley Street
Great Barrington, MA 01230

to receiving water named

Housatonic River
Housatonic River Watershed

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on the first day of the calendar month immediately following 60 days after signature.[1]

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on March 13, 2007.

This permit consists of **Part I**; **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011); **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013); **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits); **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and **Part II (**NPDES Part II Standard Conditions, April 2018).

Signed this day of

Ken Moraff, Director	Lealdon Langley, Director
Water Division	Division of Watershed Management
Environmental Protection Agency	Department of Environmental Protection
Region 1	Commonwealth of Massachusetts
Boston, MA	Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the Housatonic River. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**			**Monitoring Requirements[1,2,3]**	
	Average Monthly[4]	**Average Weekly[4]**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[5]**
Effluent Flow, rolling average[6]	3.2 MGD	---	---	Continuous	Recorder
Effluent Flow[6]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5	30 mg/L 800 lb/day	45 mg/L 1200 lb/day	Report mg/L	3/week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	---
TSS	30 mg/L 800 lb/day	45 mg/L 1200 lb/day	Report mg/L	3/week	Composite
TSS Removal	≥ 85 %	---	---	---	---
pH Range[7]	6.5 - 8.3 S.U.			1/day	Grab
Total Residual Chlorine[8,9]	130 µg/L	---	224 µg/L	1/day	Grab
Escherichia coli[8.9] (April 1 – October 31)	126 cfu/100 mL	---	409 cfu/100 mL	2/week	Grab
Total Phosphorus	1.0 mg/L	---	Report mg/L	1/week	Composite
Total Nitrogen[11]	Report mg/L 267 lb/day[12]	---	Report mg/L Report lb/day	1/week	Composite
Total Ammonia Nitrogen	Report mg/L Report lb/day	---	Report mg/L	1/month	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly[4]	Average Weekly[4]	Maximum Daily	Measurement Frequency	Sample Type[5]
Total Kjeldahl Nitrogen[11]	Report mg/L Report lb/day	---	Report mg/L	1/month	Composite
Total Nitrate[11]	Report mg/L Report lb/day	---	Report mg/L	1/month	Composite
Total Nitrite[11]	Report mg/L Report lb/day	---	Report mg/L	1/month	Composite
Whole Effluent Toxicity (WET) Testing[13,14]					
LC_{50}	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 8.5 %	1/quarter	Composite
Hardness	---	---	Report mg/L	1/quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite
Total Aluminum	---	---	Report mg/L	1/quarter	Composite
Total Cadmium	---	---	Report mg/L	1/quarter	Composite
Total Copper	---	---	Report mg/L	1/quarter	Composite
Total Nickel	---	---	Report mg/L	1/quarter	Composite
Total Lead	---	---	Report mg/L	1/quarter	Composite
Total Zinc	---	---	Report mg/L	1/quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/quarter	Composite

Ambient Characteristic[15]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly[4]	Average Weekly[4]	Maximum Daily	Measurement Frequency	Sample Type[5]
Total Phosphorus	See Section G. Special Conditions				
Hardness	---	---	Report mg/L	1/quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Grab
Total Aluminum	---	---	Report mg/L	1/quarter	Grab
Total Cadmium	---	---	Report mg/L	1/quarter	Grab
Total Copper	---	---	Report mg/L	1/quarter	Grab
Total Nickel	---	---	Report mg/L	1/quarter	Grab
Total Lead	---	---	Report mg/L	1/quarter	Grab
Total Zinc	---	---	Report mg/L	1/quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/quarter	Grab
Dissolved Organic Carbon	---	---	Report mg/L	1/quarter	Grab
pH[16]	---	---	Report S.U.	1/quarter	Grab
Temperature[16]	---	---	Report °C	1/quarter	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly[4]	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[5]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the State of any additional testing above that required herein, if testing is in accordance with 40 C.F.R. § 136.

2. In accordance with 40 C.F.R. § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 C.F.R. Part 136 or required under 40 C.F.R. Chapter I, Subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L).

4. In calculating and reporting the average monthly or average weekly concentration when the pollutant is not detected, assign zero to the non-detected sample result if the pollutant was not detected for all monitoring periods in the prior twelve months. If the pollutant was detected in at least one monitoring period in the prior twelve months, then assign each non-detected sample result a value that is equal to one half of the minimum level of detection for the purposes of calculating averages.

5. Each composite sample will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

6. Report annual average, monthly average, and the maximum daily flow in million gallons per day (MGD). The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic

mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.

7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

8. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a minimum level no greater than 20 µg/L.

   Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

9. The monthly average limit for *E. coli* is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring if TRC monitoring is required.

10. See Part I.G., Special Conditions for a schedule of compliance.

11. Total Kjeldahl nitrogen, nitrite nitrogen, and nitrate nitrogen samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen

    (total nitrogen = total kjeldahl nitrogen + total nitrate nitrogen + total nitrite nitrogen)

    The total nitrogen loading values reported each month shall be calculated as follows:

    Total Nitrogen (lbs/day) = [(average monthly total nitrogen concentration (mg/l) * total monthly influent flow (Millions of Gallons (MG)) / # of days in the month] *8.34

12. The total nitrogen limit is an annual average mass-based limit (lb/day), which shall be reported as a rolling average. The value will be calculated as the

arithmetic mean of the monthly average total nitrogen for the reporting month and the monthly average total nitrogen of the previous eleven months.

Report both the rolling annual average and the monthly average each month.

See Part I.G., Special Conditions for total nitrogen optimization requirements.

13. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*. Toxicity test samples shall be collected and tests completed during the same weeks each time of calendar quarters ending March 31st, June 30th, September 30th, and December 31st. The complete report for each toxicity test shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test.

14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A and B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A and B**. Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

16. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

Part I.A. continued.

2. The discharge shall not cause a violation of the water quality standards of the receiving water.

3. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

4. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom.

5. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

6. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

7. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:

    a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to § 301 or § 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 C.F.R. §122 Appendix A as amended) discharging process water; and

    b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

    c. For purposes of this paragraph, adequate notice shall include information on:

        (1) The quantity and quality of effluent introduced into the POTW; and

        (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

9. Pollutants introduced into the POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).

2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of any unauthorized discharge on a publicly available web site. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee shall complete the following activities for the collection system which it owns:

1. Maintenance Staff

   The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

   The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

   The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

   Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

   a. All sanitary sewer lines and related manholes;

   b. All combined sewer lines, related manholes, and catch basins;

   c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

   d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

   e. All pump stations and force mains;

   f. The wastewater treatment facility(ies);

   g. All surface waters (labeled);

   h. Other major appurtenances such as inverted siphons and air release valves;

   i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

   j. The scale and a north arrow; and

   k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

   a. The Permittee shall maintain a Collection System O&M Plan, which includes:

      (1) A description of the collection system management goals, staffing, information management, and legal authorities;

      (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and

      (3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

   b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

      (1) The required elements in paragraph 5.a. above, updated to reflect current information;
      (2) A preventive maintenance and monitoring program for the collection system;
      (3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
      (4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
      (5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
      (6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
      (7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
      (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

   The Permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by **March 31**. The first annual report is due the first March 31st following submittal of the collection system O&M Plan required by Part I.C.5.b. of this permit. The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;

b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;

c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;

d. A map with areas identified for investigation/action in the coming year;

e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit; and

f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 3.2 MGD design flow (2.56 MGD), or there have been capacity related overflows, the report shall include:

(1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
(2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of this permit, the Permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see **Attachment C –** Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if

available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

2. The Permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the Permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 C.F.R. § 403. At a minimum, the Permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):

    a. Carry out inspection, surveillance, and monitoring procedures which will determine independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.

    b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.

    c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.

    d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.

3. The Permittee shall provide the EPA and the State with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report) of this permit and shall be submitted no later than **October 31** of each year.

4. The Permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 C.F.R. 403.18(c).

5. The Permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 C.F.R. § 405 et seq.

6. The Permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The Permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the Permittee's pretreatment program deemed necessary to assure conformity with current Federal

Regulations. At a minimum, the Permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The Permittee will implement these proposed changes pending EPA Region I's approval under 40 C.F.R. § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 C.F.R. § 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 C.F.R. § 503 apply to the following sludge use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil
   b. Surface disposal - the placement of sewage sludge in a sludge only landfill
   c. Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 C.F.R. § 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 C.F.R. § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 C.F.R. § 503.6.

5. The 40 C.F.R. § 503 requirements include the following elements:

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Which of the 40 C.F.R. § 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance

Guidance" (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.[2]

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 C.F.R. § 503.8.

7. Under 40 C.F.R. § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with *another* "person who prepares sewage sludge" under 40 C.F.R. § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with § 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a "person who prepares sewage sludge," as defined in 40 C.F.R. § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in § 503 are met. 40 C.F.R. § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 C.F.R. § 503 Subpart B.

8. The Permittee shall submit an annual report containing the information specified in the 40 C.F.R. § 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* "EPA Region 1 - NPDES Permit Sludge Compliance Guidance"). Reports shall be submitted electronically using EPA's Electronic Reporting tool ("NeT") (see "Reporting Requirements" section below).

G. SPECIAL CONDITIONS

1. Total Phosphorus Ambient Monitoring

The Permittee shall develop and implement a sampling and analysis plan for biannually collecting monthly samples from the Housatonic River at a location upstream of the facility. Samples shall be collected during even numbered years, once per month, from May through September, during dry weather at Station 20A (Unique ID W1100), as described in the Technical Memorandum: Housatonic River Watershed 2007 DWM Water Quality

[2] This guidance document is available upon request from EPA Region 1 and may also be found at: http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf

Monitoring Data[3]. Dry weather is defined as any calendar day that is preceded by at least 72 hours without rainfall, following the last rainfall of 0.1 inch or greater. The sampling plan shall be submitted to EPA and DEP within six months of the effective date of the permit as part of a Quality Assurance Project Plan for review and approval at least three months prior to the first planned sampling date.

2. Total Nitrogen

Within one year of the effective date of the permit, the permittee shall complete an evaluation of alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This report may be combined with the permittees' annual nitrogen report under Part I.B.1.b, if both reports are submitted to EPA and MassDEP by February 1.

The permittee shall also submit an annual report to EPA and the MassDEP, by **February 1** each year, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

H. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State no later than the 15th day of the month electronically using NetDMR. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessed from the internet at https://netdmr.zendesk.com/hc/en-us.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. *See* Part I.H.7. for more information on State reporting. Because the due dates for reports described in this permit

[3] Carr, Jamie, and Mitchell, Peter, MassDEP, Division of Watershed Management, 2013, "Technical Memorandum: Housatonic River Watershed 2007 DWM Water Quality Monitoring Data," DWM Control Number CN 289.1.

may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Industrial User and Pretreatment Related Reports

   a. Prior to 21 December 2020, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Water Division's Pretreatment Coordinator in Region 1 EPA's Water Division (WD). Starting on 21 December 2020, these submittals must be done electronically as NetDMR attachments and/or using EPA's NPDES Electronic Reporting Tool ("NeT") found on the internet at https://www.epa.gov/compliance/npdes-ereporting. These requests, reports and notices include:

      (1) Annual Pretreatment Reports,
      (2) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,
      (3) Revisions to Industrial Discharge Limits,
      (4) Report describing Pretreatment Program activities, and
      (5) Proposed changes to a Pretreatment Program.

   b. This information shall be submitted to EPA/OEP as a hard copy at the following address:

U.S. Environmental Protection Agency
Water Division
Regional Pretreatment Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912

4. Submittal of Biosolids/Sewage Sludge Reports

   By **February 19** of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT") found on the internet at https://www.epa.gov/compliance/npdes-ereporting.

5. Submittal of Requests and Reports to EPA/OEP

   a. The following requests, reports, and information described in this permit shall be submitted to the EPA/WD NPDES Applications Coordinator in the EPA Water Division (WD):

      (1) Transfer of permit notice;
      (2) Request for changes in sampling location;

(3) Report on unacceptable dilution water / request for alternative dilution water for WET testing.

b. These reports, information, and requests shall be submitted to EPA/OEP electronically at r1npdesreports@epa.gov or by hard copy mail to the following address:

U.S. Environmental Protection Agency
Water Division
EPA/OEP NPDES Applications Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912

6. Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be signed and dated originals, submitted as hard copy, with a cover letter describing the submission:

(1) Written notifications required under Part II
(2) Notice of unauthorized discharges, including Sanitary Sewer Overflow (SSO) reporting

b. This information shall be submitted to EPA/OES at the following address:

U.S. Environmental Protection Agency
Office of Environmental Stewardship (OES)
Water Technical Unit
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912

7. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606

8. Verbal Reports and Verbal Notifications

a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Office of Environmental Stewardship at:

EPA's Office of Environmental Stewardship: 617-918-1510

and

MassDEP's Emergency Response: 888-304-1133

I. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are 1) a Federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§ 1251 et seq.; and 2) an identical State surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this State surface water discharge permit.

2. This authorization also incorporates the State water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this State surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the EPA. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

ATTACHMENT A

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6^{o}C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
5 Post Office Sq., Suite 100 (OEP06-5)
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
5 Post Office Sq., Suite 100 (OES04-4)
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcement/water/dmr.html *for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1^{o}C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

		series.
16.	Effect measured	Mortality-no movement of body or appendages on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19.	Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC

15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16.	Effect measured	Mortality-no movement on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19.	Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 2340B (hardness by calculation)
     - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 4500-CL E Low Level Amperometric Titration
     - Method 4500-CL G DPD Colorimetric Method
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

ATTACHMENT B

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL

USEPA Region 1

I. GENERAL REQUIREMENTS

The permittee shall be responsible for the conduct of acceptable chronic toxicity tests using three fresh samples collected during each test period. The following tests shall be performed as prescribed in Part 1 of the NPDES discharge permit in accordance with the appropriate test protocols described below. (Note: the permittee and testing laboratory should review the applicable permit to determine whether testing of one or both species is required).

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**
- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

Chronic toxicity data shall be reported as outlined in Section VIII.

II. METHODS

Methods to follow are those recommended by EPA in: Short Term Methods For Estimating The Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition. October 2002. United States Environmental Protection Agency. Office of Water, Washington, D.C., EPA 821-R-02-013. The methods are available on-line at http://www.epa.gov/waterscience/WET/ . Exceptions and clarification are stated herein.

III. SAMPLE COLLECTION AND USE

A total of three fresh samples of effluent and receiving water are required for initiation and subsequent renewals of a freshwater, chronic, toxicity test. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. Fresh samples are recommended for use on test days 1, 3, and 5. However, provided a total of three samples are used for testing over the test period, an alternate sampling schedule is acceptable. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any hold time extension. All test samples collected may be used for 24, 48 and 72 hour renewals after initial use. All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol.

Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to sample use for toxicity testing.

If any of the renewal samples are of sufficient potency to cause lethality to 50 percent or more of the test organisms in any of the test treatments for either species or, if the test fails to meet its permit limits, then chemical analysis for total metals (originally required for the initial sample only in Section VI) will be required on the renewal sample(s) as well.

IV. DILUTION WATER

Samples of receiving water must be collected from a location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2,Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of an alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable an ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcementandassistance/dmr.html for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

Method specific test conditions and TAC are to be followed and adhered to as specified in the method guidance document, EPA 821-R-02-013. If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.1. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

If reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.1.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25 values and ≥ two concentration intervals for NOECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

V.2. For the *C. dubia* test, the determination of TAC and formal statistical analyses must be performed using only the first three broods produced.

V.3. Test treatments must include 5 effluent concentrations and a dilution water control. An additional test treatment, at the permitted effluent concentration (% effluent), is required if it is not included in the dilution series.

VI. CHEMICAL ANALYSIS

As part of each toxicity test's daily renewal procedure, pH, specific conductance, dissolved oxygen (DO) and temperature must be measured at the beginning and end of each 24-hour period in each test treatment and the control(s).

The additional analysis that must be performed under this protocol is as specified and noted in the table below.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1, 4]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3, 4]	x		0.02
Alkalinity[4]	x	x	2.0
pH[4]	x	x	--
Specific Conductance[4]	x	x	--
Total Solids[6]	x		--
Total Dissolved Solids[6]	x		--
Ammonia[4]	x	x	0.1
Total Organic Carbon[6]	x	x	0.5
Total Metals[5]			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
  -Method 2340B (hardness by calculation)
  -Method 2340C (titration)

2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.

- APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
  -Method 4500-CL E Low Level Amperometric Titration
  -Method 4500-CL G DPD Colorimetric Method
- USEPA 1983. Manual of Methods Analysis of Water and Wastes
  -Method 330.5

3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at http://water.epa.gov/scitech/methods/cwa/ . In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoints reproduction and growth as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-013.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value**,** for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for freshwater tests in Section 10.2.8.3, p. 52, Table 6 of EPA-821-R-02-013. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.

- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater that the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-013, page 43

For discussion on Hypothesis Testing, refer to EPA 821-R-02-013, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-013, Section 9.7

2. *Pimephales promelas*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-013, page 79

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 80

Refer to growth data statistical analysis flowchart, EPA 821-R-02-013, page 92

3. *Ceriodaphnia dubia*

Refer to survival data testing flowchart, EPA 821-R-02-013, page 168

Refer to reproduction data testing flowchart, EPA 821-R-02-013, page 173

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Test summary sheets (2007 DMR Attachment F) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Test sensitivity evaluation results (test PMSD for growth and reproduction)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s)
- Reference toxicity test control charts
- All sample chemical/physical data generated, including minimum limits (MLs) and analytical methods used
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis
- A discussion of any deviations from test conditions
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint

ATTACHMENT C

EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

Under 40 CFR §122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR §403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

Please read direction below before filling out form.

ITEM I.

* In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.

* In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.

* In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ration and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

  The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."

* In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.

* In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

ITEM II.

* List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

ITEM III.

* Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

ITEM IV.

* Since your existing TBLLs were calculated, identify the following in detail:

  (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.

  (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

ITEM V.

* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

  All influent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

* Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

Item VI.

* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

(Item VI. continued)

All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

* List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

  List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

ITEM VII.

* In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

ITEM VIII.

* Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

  All biosolids data collected and analyzed must be in accordance with 40 CFR §136.

  In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.

REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS (TBLLs)

POTW Name & Address : _____

NPDES PERMIT # : _____

Date EPA approved current TBLLs : _____

Date EPA approved current Sewer Use Ordinance : _____

ITEM I.

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.		
	Column (1) EXISTING TBLLs	Column (2) PRESENT CONDITIONS
POTW Flow (MGD)		
Dilution Ratio or 7Q10 (from NPDES Permit)		
SIU Flow (MGD)		
Safety Factor		N/A
Biosolids Disposal Method(s)		

ITEM II.

EXISTING TBLLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

ITEM III.

Note how your existing TBLLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. uniform concentration, contributory flow, mass proportioning, other. Please specify by circling.

ITEM IV.

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLLs were calculated?
If yes, explain.

_____

_____

Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If yes, explain.

_____

_____

ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.				
Pollutant	Column (1) Influent Data Analyses Maximum (lb/day)	Average (lb/day)	Column (2) MAHL Values (lb/day)	Criteria
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				

ITEM VI.

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1) Effluent Data Analyses		Columns (2A) (2B) Water Quality Criteria (Gold Book) From TBLLs Today	
	Maximum (ug/l)	Average (ug/l)	(ug/l)	(ug/l)
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

*Hardness Dependent (mg/l - $CaCO_3$)

ITEM VII.

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.			
Column (1) NEW PERMIT Pollutants Limitations (ug/l)		Column (2) OLD PERMIT Pollutants	Limitations (ug/l)

ITEM VIII.

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Pollutant	Column (1) Biosolids Data Analyses Average (mg/kg)	Columns (2A) (2B) Biosolids Criteria From TBLLs New (mg/kg)	(mg/kg)
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

ATTACHMENT D

NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
   - baseline monitoring reporting requirements for newly promulgated industries
   - compliance status reporting requirements for newly promulgated industries
   - periodic (semi-annual) monitoring reporting requirements,
   - categorical standards, and
   - local limits;

2. A summary of compliance and enforcement activities during the preceding year, including the number of:
   - significant industrial users inspected by POTW (include inspection dates for each industrial user),
   - significant industrial users sampled by POTW (include sampling dates for each industrial user),
   - compliance schedules issued (include list of subject users),
   - written notices of violations issued (include list of subject users),
   - administrative orders issued (include list of subject users),
   - criminal or civil suits filed (include list of subject users) and,
   - penalties obtained (include list of subject users and penalty amounts);

3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);

4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;

5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

a.) Total Cadmium	f.) Total Nickel
b.) Total Chromium	g.) Total Silver
c.) Total Copper	h.) Total Zinc
d.) Total Lead	i.) Total Cyanide
e.) Total Mercury	j.) Total Arsenic

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;

7. A thorough description of all investigations into interference and pass-through during the past year;

8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;

9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,

10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)[1]

TABLE OF CONTENTS

[1] Updated July 17, 2018 to fix typographical errors.

A. GENERAL REQUIREMENTS

1. Duty to Comply

The Permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA or Act) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit

condition.

3. Duty to Provide Information

The Permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

4. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from responsibilities, liabilities or penalties to which the Permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

5. Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

6. Confidentiality of Information

a. In accordance with 40 C.F.R. Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 C.F.R. Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or Permittee;
(2) Permit applications, permits, and effluent data.

c. Information required by NPDES application forms provided by the Director under 40 C.F.R. § 122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

7. Duty to Reapply

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee must apply for and obtain a new permit. The Permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

3. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

b. *Bypass not exceeding limitations.* The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this Section.

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

a. *Definition*. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
(4) The Permittee complied with any remedial measures required under B.3. above.

d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. *Planned Changes*. The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

(3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

d. *Monitoring reports*. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

(2) The following shall be included as information which must be reported within 24 hours under this paragraph.

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any

relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under paragraph A.6. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Director. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and federal standards and limitations to which a "discharge," a "sewage sludge use or disposal practice," or a related activity is subject under the CWA, including "effluent limitations," water quality standards, standards of performance, toxic effluent standards or prohibitions, "best management practices," pretreatment standards, and "standards for sewage sludge use or disposal" under Sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in

"approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

Average monthly discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month.

Average weekly discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week.

Best Management Practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

Continuous discharge means a "discharge" which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any

other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by Permittees. DMRs must be used by "approved States" as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Director on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States," the waters of the "contiguous zone," or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under section 304(b) of CWA to adopt or revise "effluent limitations."

Environmental Protection Agency ("EPA") means the United States Environmental Protection

Agency.

Grab Sample means an individual sample collected in a period of less than 15 minutes.

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for agricultural purposes or for treatment and disposal.

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be

publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

(b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program."

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants;"

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source;" and

(d) Which has never received a finally effective NPDES permit for discharges at that "site."

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Director in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Director shall consider the factors specified in 40 C.F.R. §§ 125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

New source means any building, structure, facility, or installation from which there is or may be a "discharge of pollutants," the construction of which commenced:

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

(b) After proposal of standards of performance in accordance with Section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

NPDES means "National Pollutant Discharge Elimination System."

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge (see definition above) which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). "Permit" does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials

(except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 (D.D.C. 1976), *modified* 12 E.R.C. 1833 (D.D.C. 1979)); also listed in Appendix A of 40 C.F.R. Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary industry category means any industry which is not a "primary industry category."

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does

not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 C.F.R. § 122.2.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substance designated under Section 101(14) of CERCLA; any chemical the facility is required to report pursuant to Section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the CWA.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or waste water treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and waste water from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Director may designate any person subject to the standards for sewage sludge use and

disposal in 40 C.F.R. Part 503 as a "treatment works treating domestic sewage," where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Waste pile or *pile* means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States or waters of the U.S. means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(b) All interstate waters, including interstate "wetlands;"

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

    (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

    (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

    (3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland.

Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0101524

PUBLIC NOTICE START AND END DATES: June 21, 2019 – July 22, 2019

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Great Barrington
Department of Public Works
334 Main Street
Great Barrington, MA 01230

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Town of Great Barrington Wastewater Treatment Facility
100 Bentley Road
Great Barrington, MA 01230

RECEIVING WATER AND CLASSIFICATION:

Housatonic River (MA21-20)
Housatonic River Watershed - USGS Code: 01100005
Class B (Warm Water Fisheries)

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APPENDICES

1 Proposed Action

The above-named applicant (the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Treatment Plant (the "Facility") into the designated receiving water.

The permit currently in effect was issued on March 13, 2007 with an effective date of June 1, 2007 and expired on June 2012 (the "2007 Permit"). The Permittee filed an application for permit reissuance with EPA dated November 7, 2011, as required by 40 Code of Federal Regulations (C.F.R.) § 122.6. Since the permit application was deemed timely and complete by EPA on February 8, 2012, the Facility's 2007 Permit has been administratively continued pursuant to 40 C.F.R. § 122.6 and § 122.21(d). EPA and the State conducted a site visit on July 31, 2018.

This NPDES Permit is issued jointly by EPA and MassDEP under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the Director of the Division of Watershed Management pursuant to M.G.L. Chap. 21, § 43.

2 Statutory and Regulatory Authority

Congress enacted the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." *See* CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 303(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. *See* CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 C.F.R. §§ 122, 124, 125, and 136.

Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, 304(d); 40 C.F.R. §§ 122, 125, and 131.

2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH. *See* 40 C.F.R. § 133.

Under § 301(b)(1) of the CWA, POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1977. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 C.F.R. § 125.3(a)(1).

2.2 Water-Quality Based Requirements

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* § 301(b)(1)(C) of the CWA and 40 C.F.R. §§ 122.44(d)(1) and 122.44(d)(5).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 C.F.R. § 131.10-12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses for a water-body or a segment of a water-body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National resource waters. *See* CWA § 303(c)(2)(A) and 40 C.F.R. § 131.12. The applicable State WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

Receiving water requirements are established according to numerical and narrative standards in WQSs adopted under State law for each water body classification. When using chemical-specific numeric criteria to develop permit limits, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and are therefore typically applicable to monthly average limits.

When permit effluent limits are necessary for a pollutant to meet narrative water quality criteria, the permitting authority must establish effluent limits in one of three ways: based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an indicator parameter. *See* 40 C.F.R. § 122.44(d)(1)(vi)(A-C).

2.2.2 Anti-degradation

Federal regulations found at 40 C.F.R. § 131.12 require states to develop and adopt a statewide anti-degradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the anti-degradation policy

ensures that high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and support recreation in and on the water, are maintained unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide anti-degradation policy, entitled "Antidegradation Provisions", is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedure for the Anti-degradation Provisions of the State Water Quality Standards", dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the anti-degradation policy, and all existing in-stream uses and the level of water quality necessary to protect the existing uses of a receiving water must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to protect the existing uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads.

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, the EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired of threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) Impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL is essentially a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum load of the pollutant that can be discharged to a specific water body while maintaining WQSs for designated uses, and allocates that load to the various pollutant sources, including point source discharges, subject to NPDES permits. *See* 40 C.F.R. § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation for a NPDES permitted discharge, the effluent limit in the permit may not exceed the waste load allocation. *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to 40 C.F.R. § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs necessary to achieve water quality standards established under § 303 of the CWA. In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the Director determines are or may be discharged at a level which

will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality". *See* 40 C.F.R. § 122.44(d)(1)(i). There is reasonable potential to cause or contribute to an excursion if the projected or actual in-stream concentration exceeds the applicable criterion. If the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to such an excursion, the permit must contain WQBELs for the pollutant. *See* 40 C.F.R. 122.44(d)(1)(iii).

In determining reasonable potential, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent in the receiving water. EPA typically considers the statistical approach outlined in *Technical Support Document for Water Quality-based Toxics Control (TSD)*[1] to determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS. *See* 40 C.F.R. § 122.44(d). EPA's quantitative approach statistically projects effluent concentrations based on available effluent data, which are then compared to the applicable WQS.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs or it is deemed that the state has waived its right to certify. Regulations governing state certification are set forth in 40 C.F.R. § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 C.F.R. § 124.53 and expects that the Draft Permit will be certified.

If the State believes that any conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either the CWA §§ 208(e), 301, 302, 303, 306 and 307 or the appropriate requirements of State law, the State should include such conditions and, in each case, cite the CWA or State law reference upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. The only exception to this is that the sludge conditions/requirements implementing § 405(d) of the CWA are not subject to the § 401 State Certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through the applicable procedures of 40 C.F.R. § 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of state law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by

[1] March 1991, EPA/505/2-90-001

state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." *See* 40 C.F.R. § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 C.F.R. § 122.4 (d) and 40 C.F.R. § 122.44(d).

2.3 Effluent Flow Requirements

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, *inter alia*, "municipal...waste" and "sewage…discharged into water." 33 U.S.C. § 1362(6).

EPA may use design flow of wastewater effluent both to determine the necessity for effluent limitations in the permit that comply with the Act, and to calculate the limits themselves. EPA practice is to use design flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the wastewater effluent flow exceed the flow assumed in these calculations, the instream dilution would decrease and the calculated effluent limits may not be protective of WQSs. Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower wastewater discharge flow may have reasonable potential at a higher flow due to the decreased dilution. To ensure that the assumptions underlying the Region's reasonable potential analyses and derivation of permit effluent limitations remain sound for the duration of the permit, the Region may ensure its "worst-case" wastewater effluent flow assumption through imposition of permit conditions for wastewater effluent flow. Thus, the wastewater effluent flow limit is a component of WQBELs because the WQBELs are premised on a maximum level of flow. In addition, the wastewater effluent flow limit is necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

Using a facility's design flow in the derivation of pollutant effluent limitations, including conditions to limit wastewater effluent flow, is consistent with, and anticipated by NPDES permit regulations. Regarding the calculation of effluent limitations for POTWs, 40 C.F.R. § 122.45(b)(1) provides, "permit effluent limitations…shall be calculated based on design flow." POTW permit applications are required to include the design flow of the treatment facility. *Id.* § 122.21(j)(1)(vi).

Similarly, EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," 40 C.F.R. § 122.44(d)(1)(ii), which is a function of *both* the wastewater effluent flow and receiving water flow. EPA guidance directs that this "reasonable potential" analysis be based on "worst-case" conditions. EPA accordingly is authorized to carry out its reasonable potential calculations by presuming that a plant is operating at its design flow when assessing reasonable potential.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit in order to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 C.F.R. §§ 122.4(a) and (d); 122.43 and 122.44(d). A condition on the discharge designed to protect EPA's WQBEL and reasonable potential calculations is encompassed by the references to "condition" and "limitations" in 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including anti-degradation.

Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 C.F.R. § 122.41(e), the permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design wastewater effluent flow. Thus, the permit's wastewater effluent flow limitation is necessary to ensure proper facility operation, which in turn is a requirement applicable to all NPDES permits. *See* 40 C.F.R. § 122.41.

EPA has also included the wastewater effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system that enters the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems. Consequently, the effluent flow limit is a permit condition that relates to the permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 C.F.R. §§ 122.41(d) and (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

EPA has the authority in accordance with several statutory and regulatory requirements established pursuant to the CWA, 33 USC § 1251 et seq., the NPDES program (*See* § 402 and the implementing regulations generally found at 40 C.F.R. §§ 122, 124, 125, and 136), CWA § 308(a), 33 USC § 1318(a), and applicable state regulations to include requirements such as monitoring and reporting in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the discharges under the authority of §§ 308(a) and 402(a)(2) of the CWA, and consistent with 40 C.F.R. §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The monitoring requirements included in this permit specify routine sampling and analysis, which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The monitoring program is needed to assess effluent characteristics, evaluate permit compliance, and determine if additional permit conditions are necessary to ensure compliance with technology-based and water quality-based requirements, including WQSs. EPA and/or the state may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to § 304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical

effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 C.F.R. § 122. Therefore, the monitoring requirements in this permit are included for specific regulatory use in carrying out the CWA.

NPDES permits require that the approved analytical procedures found in 40 C.F.R. § 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[2] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 C.F.R. § 122.21(e)(3) (completeness), 40 C.F.R. § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 C.F.R. § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

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

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to electronically report monitoring results obtained during each calendar month as a Discharge Monitoring Report (DMR) to EPA and the State using NetDMR no later than the 15th day of the month following the completed reporting period. Although this is a new permit requirement since the 2007 Permit, the Town has been submitting their DMRs using NetDMR for approximately five years.

NetDMR is a national web-based tool for regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has allowed participants to discontinue mailing in hard copy forms to EPA under 40 C.F.R. §§ 122.41 and 403.12. NetDMR is accessed from the following website:

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

[3] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Federal Register, Vol. 79, No. 160, Tuesday, August 19, 2014; FR Doc. 2014–19557.

https://netdmr.zendesk.com/hc/en-us. Further information about NetDMR can be found on the EPA Region 1 NetDMR website.[4]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit, such as for providing written notifications required under the Part II Standard Conditions.

2.5 Anti-backsliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in a previous permit unless in compliance with the anti-backsliding requirements of the CWA. See §§ 402(o) and 303(d)(4) of the CWA and 40 C.F.R. § 122.44(l)(1 and 2). Anti-backsliding provisions apply to effluent limits based on technology, water quality, best professional judgement (BPJ) and state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2007 Permit unless specific conditions exist to justify one of the exceptions listed in 40 C.F.R. § 122.44(l)(2)(i) and/or in accordance with § 303(d)(4). Discussion of any applicable exceptions are discussed in sections that follow. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

3 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and the outfall 001 to Housatonic River are shown in Figure 1. The location of the outfall is Latitude 42° 11'22" N, Longitude -73° 21'31" W.

The Great Barrington Wastewater Treatment Facility (WWTF) is a secondary wastewater treatment facility that is engaged in the collection and treatment of municipal wastewater. The Facility has a centralized wastewater system that primarily serves the developed areas in the three villages of Housatonic, Risingdale, and Great Barrington Proper along the Housatonic River Valley. Currently, the Facility serves approximately 3,500 connections in the Town of Great Barrington.

The Facility has a design flow of 3.65 MGD, the annual average daily flow reported in the 2011 application was 1.2 MGD and the average for the last 5 years has been 0.996 MGD. The Town increased the flow capacity of the plant from 3.2 MGD to 3.65 MGD by constructing an additional secondary clarifier. The Town has requested that its authorized discharge flow remain at 3.2 MGD because the population of the Town is not expected to grow in the near future and the additional capacity will not be utilized. The Draft Permit is therefore based on a design flow of 3.2 MGD and the Draft Permit includes a flow limitation of 3.2 MGD. Any future increase in the flow limit can only be modified through a permit modification and would be subject to the

[4] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information.

State's Antidegradation Policy. If approved, this permit action would also likely include more stringent discharge permit limitations.

The Permittee does not have any major industries contributing industrial wastewater to the WWTF, and thus, is not required to have a pretreatment program. However, the Permittee has requested EPA to continue including pretreatment requirements in its Permit in order to streamline the approval process for accepting flow from major industries during the life of its Permit. Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from January 2014 through December 2018 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Great Barrington Wastewater Treatment Facility (WWTF) is an activated sludge treatment plant. Influent enters the Facility and flows through a mechanical screen and then through a primary grit separation chamber. The flow is split into two primary clarifiers, flows into two aeration tanks, and through a flow distribution structure into three secondary clarifiers. One of the three secondary clarifiers was previously a clariflocculator that was used to treat wastewater from a now-shuttered industry. Ferric chloride is added to the wastewater just prior to the clarifiers for phosphorus removal. The effluent is disinfected in a chlorine contact tank, then dechlorinated before flowing through a parshall flume for measurement, then through a single pipe into Housatonic River. A flow diagram of the Treatment Facility is shown in Figure 2.

Waste sludge is pumped from the primary and secondary clarifiers and treated in a sludge mixing tank, then gravity sludge thickeners, and a belt filter press. The sludge is dewatered to about 30% solids and transported by a licensed hauler to the Synagro incineration facility in Waterbury, Connecticut. The average mass of sludge shipped for incineration in 2011 was 456 dry metric tons.

3.1.2 Collection System Description

The Great Barrington WWTF is served by a separate sewer system with no combined sewers. A separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. It is part of a "two pipe system" consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to local water bodies. Excessive infiltration and inflow of groundwater was reported in the Facility's 2011 Comprehensive Wastewater Management Plan. The Permittee's 2011 permit application indicates a large amount of inflow during rain events. The steps taken so far include pipe lining and removing direct inflow sources such as catch basins tied to sanitary lines.

4 Description of Receiving Water and Dilution

The Great Barrington WWTF discharges through outfall 001 into the Housatonic River, Segment MA21-20. This segment is 23 miles in length and travels from Risingdale Impoundment Dam in

Great Barrington to the Connecticut state line. The Housatonic River flows into Long Island Sound near Stratford, Connecticut.

Housatonic River has been classified as a Class B warm water fishery in the Massachusetts WQSs, 314 CMR 4.05(4)(a). The MA WQS at 314 CMR 4.05(3)(b) state that Class B "*waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

A summary of the ambient data collected in the receiving water upstream of the outfall can be found in Appendix B of this Fact Sheet.

The MassDEP's Massachusetts Year 2014 Integrated List of Waters (2014 Integrated List), the 303(d) list, includes the Housatonic River as a Massachusetts Category 5 Water and in need of a total maximum daily load (TMDL) assessment due to aquatic macroinvertebrate bioassessments, Escherichia coli, taste and odor and whole effluent toxicity (WET). This assessment is based on the sampling results of the 2007 Housatonic River Survey conducted by MassDEP. To date no TMDL has been developed for this segment for any of the listed impairments.

In 1981, the Massachusetts Department of Environmental Quality Engineering (DEQE) published the Small River Basin Water Quality Management Plan, which included a wasteload allocation (WLA) for the Great Barrington WWTF. Given the limited assimilative capacity of the receiving waters, limits more stringent than secondary treatment requirements were required for the parameters in Table 1.

Table 1: Limits in 1981 MA DEQE Wasteload Allocation

Flow (MGD)	BOD_5 (lb/d)	Suspended solids (lb/d)	Settleable solids (ml/L)	Fecal coliform (#/100 mL)	Total coliform (#/100 mL)
3.2	801	801	1.0	200	1000

EPA has proposed effluent limits in the Draft Permit that ensure that the increased discharge results in no more than an insignificant degradation of water quality in the Housatonic River and the downstream waters.

4.1 Available Dilution

7-Day, 10-Year Low Flow

To ensure that discharges do not cause or contribute to violations of WQS under all expected circumstances, WQBELs are derived assuming critical conditions for the receiving water (*See* EPA Permit Writer's Manual, Section 6.2.4). For most pollutants and criteria, the critical flow in rivers and streams is some measure of the low flow of that river or stream. Massachusetts water quality regulations require that the available effluent dilution be based on the 7-day, 10-year low flow (7Q10 flow) of the receiving water (314 CMR 4.03(3)(1)). The 7Q10 low flow is the mean low flow over 7 consecutive days, recurring every 10 years.

The 7Q10 flow used in the Draft Permit has been extrapolated from flow data from the most recent 30 years (1998 – 2018) at a U.S. Geological Survey gage station (USGS 01197500 - Housatonic River at Great Barrington, Massachusetts) on the Housatonic River. The discharge is located on the Housatonic River about 3.9 river miles downstream of the confluence with the Williams River in Great Barrington (or 2.63 miles as the crow flies). The total drainage area for the Housatonic River watershed is about 1,948 square miles; the drainage area upstream of the discharge is about 335 square miles.

7Q10 at USGS 01197500 – Housatonic River at Great Barrington, Massachusetts
April 1, 1988-April 1, 2018

= 66.4 cubic feet per second (cfs)

Drainage Area of USGS 01197500 = 282 square miles

$$Flow\ factor\ for\ USGS\ 01197500 = \frac{66.4\ cfs}{282\ square\ miles} = 0.2355\ cfs/sq.mi.$$

Using a low-flow factor of 0.2355 cfs per square mile and the drainage area at the facility outfall of 335 square miles yields a receiving water 7Q10 flow of about 78.9 cfs or 51.0 million gallons per day (MGD).

The dilution factor (DF) at the 7Q10 flow of 50.96 MGD in the receiving water upstream of the discharge, Q_s, and the Facility's design flow of 3.2 MGD, Q_d, was calculated as shown below:

$$DF = (Q_s + Q_d)/Q_d = (50.96\ MGD + 3.2\ MGD)/3.2\ MGD = 16.9$$

5 Effluent Limitations and Conditions

The proposed limitations and conditions, the bases of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit. EPA determined the pollutants of concern based on EPA's technology based effluent requirements, pollutants believed present in the permit application, and other information.

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the permittee in their permit application as well as in monthly discharge monitoring reports (DMRs) and in WET test reports from January 2014 to December 2018 (the "review period") were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* **Appendices A and B)**.

5.1.1 Wastewater Effluent Flow

The effluent flow limit in the 2007 Permit is 3.2 MGD, as a rolling annual average flow, based on the Facility's design flow. The DMR data during the review period shows that there have been no violations of the flow limit.

The Draft Permit continues the 3.2 MGD flow limit from the 2007 Permit. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months.

5.1.2 Biochemical Oxygen Demand (BOD_5)

5.1.2.1 BOD_5 Concentration Limits

The BOD_5 limits in the 2007 Permit were based on the secondary treatment standards in 40 C.F.R. § 133.102; the average monthly limit is 30 mg/L and the average weekly limit is 45 mg/L.

The DMR data during the review period (summarized in Appendix A) shows that there have been no violations of BOD_5 concentration limits.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2007 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains 3 times per week.

5.1.2.2 BOD_5 Mass Limits

The summer mass-based BOD_5 limits in the 2007 Permit of 800 lb/day (monthly average) and 1200 lb/day (weekly average) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data from the review period, summarized in Appendix A, shows that there have been no violations of BOD_5 mass limits.

BOD Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly BOD_5 are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are average monthly and average weekly)
Q_d = Annual average design flow of Facility
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Limits:

Monthly Average: 30 mg/L * 3.2 MGD * 8.34 = 800 lb/day
Weekly Average: 45 mg/L * 3.2 MGD * 8.34 = 1200 lb/day

The limits are well above the level of BOD_5 currently being discharged and therefore EPA expects that the Facility will continue to meet their BOD_5 limits without any further adjustments to their treatment process.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The TSS limits in the 2007 Permit were based on the secondary treatment standards in 40 C.F.R. § 133.102; the average monthly limit is 30 mg/L and the average weekly limit is 45 mg/L.

The DMR data during the review period, summarized in Appendix A, shows that there have been no violations of TSS concentration limits.

The Draft Permit proposes the same TSS concentration limits as in the 2007 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains 3 times per week.

5.1.3.2 TSS Mass Limits

The mass-based TSS limits in the 2007 Permit of 800 lb/day (monthly average) and 1200 lb/day (weekly average) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data during the review period, summarized in Appendix A, shows that there have been no violations of TSS mass limits.

TSS Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly and average weekly TSS are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day
C_d = Maximum allowable effluent concentration for reporting period in mg/L (reporting periods are average monthly and average weekly)
Q_d = Annual average design flow of Facility
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Limits:

Monthly Average: 30 mg/L * 3.2 MGD * 8.34 = 800 lb/day
Weekly Average: 45 mg/L * 3.2 MGD * 8.34 = 1200 lb/day

The limits are well above the level of TSS currently being discharged and therefore EPA expects that the Facility will continue to meet their TSS limits without any further adjustments to their treatment process.

5.1.4 Eighty-Five Percent (85%) BOD_5 and TSS Removal Requirement

In accordance with the provisions of 40 C.F.R. § 133.102(a)(3), (4) and (b)(3), the 2007 Permit requires that the 30-day average percent removal for BOD_5 and TSS be not less than 85%. The DMR data during the review period, summarized in Appendix A, shows that BOD_5 and TSS removal percentages averaged 95% and 98%, respectively. There were no violations of the 85% removal requirement for BOD_5 or TSS during that period.

The requirement to achieve 85% BOD_5 and TSS removal has been carried forward into the Draft Permit.

5.1.5 pH

Consistent with the requirements of Massachusetts WQS at 314 CMR 4.05(3)(b)(3), the Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.3 standard units at any time. The monitoring frequency is once per day. The DMR data during the review period, summarized in Appendix A, show that there have been no violations of the pH limitations.

The pH requirements in the 2007 Permit are carried forward into the Draft Permit as there has been no change in the WQS with regards to pH.

5.1.6 Bacteria

The 2007 Permit included effluent limitations for bacteria using fecal coliform bacteria as the indicator bacteria to protect seasonal recreational uses in the receiving water from April 1st through October 31st with twice weekly monitoring.

During the five-year period of January 2014 through December of 2018, the permittee reported no limit exceedances for both the average monthly and maximum daily fecal coliform limits of the 2007 permit (200 cfu/100 ml and 400 cfu/100 ml, respectively). See the DMR Summary in Appendix A.

The 2007 permit also included reporting only requirements for Escherichia coli (E. coli) since Massachusetts was, at that time, anticipating EPA approval of newly adopted recreational criteria based on E. coli rather than fecal coliform.

Consistent with Massachusetts' new bacteria criteria, which were approved by EPA on September 19, 2007, the bacteria limits proposed in the draft permit for Outfall 001 are 126 colony forming units (cfu) of E. coli per 100 milliliters (ml) as a geometric mean and 409 cfu of E. coli per 100 ml maximum daily value (this is the 90% distribution of the geometric mean of 126 cfu/100 ml). The proposed monitoring frequency is twice per week which is the same as in the 2007 Permit. As in the 2007 Permit, the bacteria limits apply from April 1st through October 31st. Due to the change in the Massachusetts bacteria criteria, there are no effluent limit or monitoring requirements for fecal coliform in the Draft Permit.

5.1.7 Total Residual Chlorine

The 2007 Permit includes water quality based effluent limits for TRC of 0.130 mg/L monthly average and maximum daily 0.224 mg/L with a daily monitoring requirement. As can been seen from the DMR summary in Appendix A, the permittee reported no TRC limit exceedances

during the five-year period of January 2014 through December of 2018,

The TRC permit limits are based on the instream chlorine criteria defined in National Recommended Water Quality Criteria: 2002, EPA 822R-02-047 (November 2002), as adopted by the MassDEP into the state water quality standards at 314 CMR 4.05(5)(e). The freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). EPA calculated TRC limits based on the updated dilution factor of 16.9. Because the upstream chlorine is assumed to be zero in this case, the updated water quality-based chlorine limits are calculated using the criteria and the dilution factor, as follows:

Chronic criteria * dilution factor = Chronic limit

11 µg/L * 16.9 = 186 µg/L (average monthly)

Acute criteria * dilution factor = Acute limit

19 µg/L * 16.9 = 321 µg/L (maximum daily)

The Draft Permit retains the 0.130 mg/L monthly average and maximum daily 0.224 mg/L TRC limits from the 2007 permit based on anti-backsliding provisions found in CWA section 402(o)(1) (see Section 2.5 of this Fact Sheet for more information about anti-backsliding). The Draft Permit expresses the TRC limits in micrograms per liter instead of milligrams per liter consistent with current practice and continues the once-per-day monitoring requirement.

5.1.8 Ammonia

In addition to being a nutrient as a component of total nitrogen, nitrogen in the form of ammonia can reduce the receiving stream's dissolved oxygen concentration through nitrification and can be toxic to aquatic life, particularly at elevated temperatures. The toxicity level of ammonia depends on the temperature and pH of the receiving water (USEPA 1999).

The 2007 Permit includes a weekly ammonia monitoring requirement.

Summer Ammonia Limits (April 1 through October 31)
The applicable ammonia water quality criteria are pH and, for the chronic criteria, temperature dependent and can be derived using EPA-recommended ammonia criteria from the document: *Update of Ammonia Water Quality Criteria for Ammonia,* 1999 (EPA 822-R-99-014). These are the freshwater ammonia criteria in EPA's *National Recommended Water Quality Criteria,* 2002 (EPA 822-R-02-047) document, which are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). At pH of 7.0, average summer temperature of 20°C, and assuming salmonids present, the acute criteria is 24.1 mg/L and the chronic criteria is 4.15 mg/L.

The DMR data during the summer months from 2014 through 2018 shows one sample of 4.8 mg/L, and the rest were ranged from 0.22 to 2.74 mg/L.

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for ammonia, the following mass-balance is used to project the in-stream concentration downstream from the discharge.

Downstream Ammonia Concentration
(April 1 – October 30)

$$Q_R C_R = Q_D C_D + Q_S C_S$$

Where
Q_R = Streamflow below outfall = 83.84 cfs ($Q_D + Q_S$)
Q_D = Discharge flow = 4.95 cfs
C_D = Discharge concentration = 2.86 mg/L (95% daily max estimate)
Q_S = Upstream flow = 78.9 cfs (7Q10)
C_S = Upstream concentration = 0.1 mg/L (median of ambient upstream ammonia data is <0.1 mg/L, see Appendix B)
C_R = Concentration below outfall

Solving for downstream concentration,

$$C_R = (Q_D C_D + Q_S C_S) / Q_R$$

$$C_R = \frac{(4.95 \text{ cfs} \times 2.86 \text{ mg/L}) + (78.9 \text{ cfs} \times 0.1 \text{ mg/L})}{83.84 \text{ cfs}}$$

C_R = 0.26 mg/L, which is less than 4.15 mg/L.

Analysis shows there is not Reasonable Potential to violate the acute or chronic ammonia limits. Therefore, the monitoring requirement for ammonia-nitrogen is reduced to once per month.

Winter Ammonia Limits (November 1 through March 31)

At pH of 7.0, average winter temperature of 5°C, and assuming salmonids present, the acute and chronic ammonia criteria are 24.1 mg/L and 5.91 mg/L, respectively.

The DMR data from the review period shows that there have been no violations of the cold weather ammonia criteria, and the highest recorded sample was 12.8 mg/L, another was 12.1 mg/L, and the rest were below 2 mg/L.

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for ammonia, the following mass-balance is used to project the in-stream concentration downstream from the discharge.

Downstream Ammonia Concentration
(November 1 – March 30)

$$Q_R C_R = Q_D C_D + Q_S C_S$$

Where
Q_R = Streamflow below outfall = 83.84 cfs ($Q_D + Q_S$)
Q_D = Discharge flow = 4.95 cfs
C_D = Discharge concentration = 3.08 mg/L (95% daily max estimate)
Q_S = Upstream flow = 78.9 cfs (7Q10)
C_S = Upstream concentration = 0.1 mg/L (median of ambient upstream ammonia data is <0.1 mg/L, see Appendix B)
C_R = Concentration below outfall

Solving for downstream concentration,

$$C_R = (Q_D C_D + Q_S C_S) / Q_R$$

$$C_R = \frac{(4.95 \text{ cfs} \times 3.08 \text{ mg/L}) + (78.9 \text{ cfs} \times 0.1 \text{ mg/L})}{83.84 \text{ cfs}}$$

C_R = 0.28 mg/L, which is less than 5.91 mg/L.

Analysis shows there is not Reasonable Potential to violate the acute or chronic ammonia limits. Therefore, the monitoring requirement for ammonia-nitrogen is reduced to once per month.

5.1.9 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems. However, typically phosphorus is the limiting nutrient triggering eutrophication in fresh water ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for this receiving water, this permit, phosphorus [or nitrogen or both] is the nutrient of concern evaluated for effluent limitations in the discussion below.

5.1.9.1 Total Nitrogen

The Great Barrington WWTF discharges to the Housatonic River, which drains to Long Island Sound (LIS). In December 2000, the Connecticut Department of Energy and Environmental Protection (CT DEEP) and New York State Department of Environmental Conservation (NYSDEC) completed a Total Maximum Daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in LIS. The TMDL included a Waste Load Allocation (WLA) for point sources and a Load Allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont point sources discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The 1998 baseline out-of-basin total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lb/day, 3,286 lb/day, and 1,253 lb/day respectively (See Table 2: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds below) including those from publicly and privately owned treatment works, or wastewater treatment plants (WWTPs), and industrial dischargers. Recent estimated point source maximum annual average total nitrogen loadings for the Connecticut, Housatonic, and Thames, Rivers, respectively are 14,395 lb/day, 1,628 lb/day, and 666 lb/day, based on 2013 through 2017 information and including all non-stormwater permitted dischargers in the watershed.

Table 2: Estimated Out-of-Basin Point Source Nitrogen Loadings to the Connecticut, Housatonic and Thames Rivers Watersheds

Basin	1998 Baseline Loading[1] (lb/day)	TMDL WLA[2] (lb/day)	Maximum Loading 2013 to 2017 (lb/day)[3]
Connecticut River	21,672	16,254	14,395[4]
Housatonic River	3,286	2,464	1,628[5]
Thames River	1,253	939	666[6]
Totals	**26,211**	**19,657**	**16,689**

[1] Estimated loading from TMDL, (see Appendix 3 to CT DEEP "Report on Nitrogen Loads to Long Island Sound," April 1998)
[2] Reduction of 25% from baseline loading
[3] Estimated loading from 2013-2017 Discharge Monitoring Report data
[4]Highest load from the Connecticut River occurred in 2013
[5]Highest load from the Housatonic River occurred in 2014
[6]Highest load from the Thames River occurred in 2015

As can be seen in Table 2, the TMDL target of a 25% aggregate reduction from the 1998 baseline loadings is currently being met, and the overall loading from MA, NH and VT wastewater treatment plants discharging to the Housatonic River watershed is about 34% below the TMDL wasteload allocation. Overall the loadings from MA, NH, and VT are about 15% below the TMDL wasteload allocation.

The 2007 Permit required monthly monitoring for total Kjeldahl nitrogen, nitrate and nitrite, the sum of which provide the total nitrogen (TN) concentration. Using the concentration and monthly average flow data, the calculated[5] annual average[6] total nitrogen loading from the Great Barrington facility ranged from 99.6 to 124 lb/day from 2014 to 2018 and averaged 113.3 lb/day.

While substantial TN out-of-basin load reductions have occurred at some facilities by means of optimization requirements alone, concerns raised in recent public comments by the downstream state (Connecticut) and concerned citizens[7] have highlighted the need for clearly enforceable, numeric, loading-based effluent limits to ensure that the annual aggregate nitrogen loading from

[5] Monthly Average TN (mg/L) * Monthly Average Flow * 8.34 = Monthly Average TN (lb/day)
[6] Sum of Monthly Average TN (lb/day) in a year ÷12 months = Annual Average
[7] Connecticut Department of Energy and Environmental Protection letters to EPA dated February 7, 2018 and April 27, 2018; Connecticut Fund for the Environment letter to EPA dated February 7, 2018; and Connecticut River Conservancy letter to EPA dated February 18, 2018.

out-of-basin point sources are consistent with the TMDL WLA of 19,657 lb/day and to ensure that current reductions in loading do not increase, given the continued impairment status of LIS.

After further review of the federal and state requirements, EPA agrees with the concerns raised by the downstream state and the public. As discussed in Section 2 of this Fact Sheet, statutory and regulatory requirements regarding the development of water quality-based effluent limits include provisions to ensure implementation of any available WLAs[8], provisions to prevent further degradation of receiving waters that are already impaired[9] and consideration of applicable water quality requirements of downstream states[10].

The optimization requirements included, in many out-of-basin permits issued in the LIS watershed since 2007, have resulted in nitrogen reductions by means of utilizing the available equipment to minimize discharges of nitrogen. However, these requirements, by themselves, are not enforceable effluent limits that would prevent further increases in nitrogen due to population growth or new industrial dischargers. Enforceable effluent limits will ensure that as communities experience new residential, commercial and industrial growth, the nitrogen load from their POTWs do not cause or contribute to further degradation of LIS.

Therefore, EPA intends to include a total nitrogen rolling annual average mass-based loading limit (in lb/day) and a requirement to optimize current treatment systems to minimize the effluent nitrogen in all permits issued to wastewater treatment plants with design flow greater than or equal to one (1) MGD that discharge to the LIS watershed in Massachusetts. Table 3 summarizes the approach to update TN requirements for this and future permits in the LIS watershed in Massachusetts. EPA is also working with the States of New Hampshire and Vermont to ensure that comparable requirements are included in NPDES permits issued in those states.

Table 3: Annual Average Total Nitrogen Limits for Massachusetts WWTP Dischargers to the Long Island Sound Watershed

Facility Design Flow, Q_D (MGD)	Number of Facilities	Annual Average TN Limit (lb/day)
$Q_D \geq 50$	1	Q_D (MGD) * 5 mg/L * 8.34 + optimize
$10 \leq Q_D < 50$	3	Q_D (MGD) * 5 mg/L * 8.34 + optimize
$5 \leq Q_D < 10$	6	Q_D (MGD) * 8 mg/L * 8.34 + optimize
$1 \leq Q_D < 5$	19	Q_D (MGD) * 10 mg/L * 8.34 + optimize
$0.1 \leq Q_D < 1$	17	Optimize
$Q_D < 0.1$	8	TN monitoring only

The optimization condition in the Draft Permit requires the permittee to evaluate alternative methods of operating their treatment plant to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Facilities not currently engaged in optimization efforts will also be required to implement optimization measures, so that the aggregate 25% reduction is maintained or increased.

[8] *See* 40 C.F.R. §122.44(d)(1)(vii)(B)
[9] *See* 40 C.F.R. § 122.44(d)(1)(vii)(B), 40 C.F.R. § 131.12(a)(1), and 314 CMR 4.04(1)
[10] *See* 40 C.F.R § 122.44(d)(4) and CWA section 401(a)(2)

Specifically, the draft permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year-round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit also requires implementation of optimization methods to ensure that the facility is operated in such a way that discharges of total nitrogen are minimized. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years.

In addition to the rolling annual average total nitrogen effluent limit and optimization requirements, the draft permit includes maximum daily and average monthly reporting requirements for total nitrogen (TN), total Kjeldahl nitrogen (TKN), and total nitrite/nitrate nitrogen (NO_2/NO_3).

Since the design flow for the facility is between 1 and 5 MGD (3.2 MGD), the annual loading TN limit calculated for the Draft Permit is:

3.2 MGD * 10 mg/L * 8.34 = 267 lb/day.

The effluent limit is a rolling annual average based on the average of the current monthly average and the monthly average of the previous 11 months.

Future Nitrogen Limits

The new nitrogen annual loading limit in this draft permit is intended to meet the requirements of the 2001 LIS TMDL which was developed to address hypoxic conditions in the bottom waters of LIS[11]. In December 2015, EPA signed a letter detailing a post-TMDL EPA nitrogen reduction strategy for waters in the LIS watershed. The strategy recognizes that more work may need to be done to reduce nitrogen levels, further improve DO conditions, and attain other related water quality standards in LIS, particularly in coastal embayments and the estuarine portions of rivers that flow into the Sound. EPA is working to establish nitrogen thresholds for Western LIS and several coastal embayments, including the mouth of the Housatonic River. Documents regarding the EPA Nitrogen Reduction Strategy are available for public review on EPA's Long Island Sound website (http://longislandsoundstudy.net/issues-actions/water-quality/nitrogen-strategy/). Upon completion of establishing thresholds and assessing the water quality conditions of the estuarine waters of the Housatonic River, allocations of total nitrogen loadings may be lowered if further reductions are necessary. If reductions are needed for the Great Barrington discharge, a lower water quality-based effluent limit will be added in a future permit action. If so, EPA anticipates exploring possible trading approaches for nitrogen loading in the Massachusetts portion of the Housatonic River watershed.

Although not a permit requirement, it is recommended that any facilities planning that might be conducted for this facility consider alternatives for further enhancing nitrogen reduction beyond

[11] For more information see http://longislandsoundstudy.net/about/our-mission/management-plan/hypoxia/

the optimization activities required in this permit.

5.1.9.2 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter; 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (i.e. anthropogenic) sources of nutrients in surface waters.

The 2007 Permit includes a year-round average effluent limit of 1.0 mg/L, and a "Report" requirement for average monthly ortho-phosphorus from November 1 – March 31. Review of the weekly monitoring data in the DMRs from January 2014 to December 2018, provided in Appendix A, shows that the monthly average total phosphorus in the effluent averaged 0.53 mg/L (range 0.30 to 0.86 mg/L).

The MA WQS under 314 CMR 4.05(5)(c) requires that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria develop in a TMDL. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication.

In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus. EPA has published national guidance documents that contain recommended total phosphorus criteria and other indicators of eutrophication. The following summarizes available guidance:

- EPA's 1986 *Quality Criteria for Water* (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 0.05 mg/L in any stream entering a lake or reservoir. 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within a lake or reservoir. For this segment of Housatonic River, the 0.1 mg/L would apply downstream of the discharge.
- As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophication response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. In this case, EPA is not aware of any evidence that Housatonic River is unusually susceptible to eutrophication impacts, so that the 100 µg/L threshold appears sufficient in this receiving water. EPA is not aware of evidence of factors that are reducing eutrophic response in Housatonic River downstream of the discharge.

- In 2001, EPA has released recommended Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published criteria represent conditions in waters within ecoregions that are minimally impacted by human activities, and thus free from the effects of cultural eutrophication. Great Barrington is located within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. The recommended total phosphorus criteria for this ecoregion, found in Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII (EPA December 2001) is 10 µg/L (0.01 mg/L).
- Elevated concentration of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment (Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002]).

EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams.

The effectiveness of the current average monthly total phosphorus limit of 1.0 mg/L in protecting the quality of the receiving water was evaluated by estimating the instream phosphorus concentration downstream of the discharge under critical flow conditions.
The following mass balance is used to project in-stream total phosphorus concentrations downstream from the discharge.

$$Q_d C_d + Q_s C_s = Q_r C_r$$

Where:

Q_s = 7Q10 flow upstream of Facility
Q_d = Effluent flow
Q_r = combined stream flow (7Q10 + effluent flow)
C_s = median upstream total phosphorus concentration
C_d = effluent total phosphorus concentration

Sampling data from 2007[12], summarized in Table 4, reported five summer in-stream phosphorus concentrations collected at Station 20A (Unique ID W1100) located upstream of the Great Barrington WWTF at Division Street at USGS flow gauging station #01197500.

[12] Carr, Jamie, and Mitchell, Peter, MassDEP, Division of Watershed Management, 2013, "Technical Memorandum: Housatonic River Watershed 2007 DWM Water Quality Monitoring Data," DWM Control Number CN 289.1.

Table 4: Instream total phosphorus concentrations (mg/L)

	20A (W-1100) Upstream of Great Barrington WWTF
5/8/2007	0.031
6/12/2007	0.061
7/17/2007	0.056
8/21/2007	0.042
9/25/2007	0.055

This data, which is the most recent upstream total phosphorus available, provides a median background concentration (Cs) of 0.055 mg/L. The expected concentration of total phosphorus downstream of Great Barrington under critical conditions, C_r, if the effluent limit remains at 1.0 mg/L mg/L can be calculated as follows:

$$C_r(\text{downstream of Great Barrington}) = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

Where:

Q_s = 7Q10 flow upstream of Great Barrington, 78.9 cfs
Q_d = 4.95 cfs, based on the Great Barrington design flow of 3.2 MGD
Q_r = Qs + Qd = 83.84 cfs
C_s = 0.055 mg/L
C_d = 1.0 mg/L

This calculation yields an estimated 0.11 mg/L total phosphorus in the Housatonic River downstream of the Great Barrington WWTP under critical conditions. This is higher than the Gold Book Criteria of 0.10 mg/L.

However, EPA anticipates that new total phosphorus effluent limits at the three wastewater treatment plants upstream of Great Barrington are likely to continue to reduce the upstream concentration of phosphorus substantially. Setting the downstream concentration to the Gold Book criteria of 0.1 mg/L, the mass balance equation can be solved for the upstream phosphorus concentration, C_s, to see if this is a reasonable expectation, as follows:

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

Where:

Q_s = 7Q10 flow upstream of Great Barrington, 78.9 cfs
Q_d = 4.95 cfs, based on the Lee design flow of 3.2 MGD
Q_r = Qs + Qd = 83.84 cfs
C_r = 0.10 mg/L
C_d = 1.0 mg/L

This calculation shows the Great Barrington's current effluent limit would be sufficient if the upstream concentration were 0.044 mg/L. This would represent a 20% reduction in upstream phosphorus loading. Based on current effluent flows and total phosphorus effluent concentrations, Table 5 summarizes current and anticipated reductions in total phosphorus loading expected, including new 0.2 effluent limit that went into effect in Lee in 2008, the implementation of the 0.10 mg/L total phosphorus effluent limits at Pittsfield and a proposed

0.22 mg/L effluent limit at Lenox[13]. As can be seen from Table 5, the combined upstream WWTP effluent load is expected to be reduced by 90%. Therefore, EPA expects that the current Great Barrington effluent limit of 1.0 mg/L will be sufficient to prevent exceedance

Table 5: Summary of 2007 and Expected Upstream WWTP Total Phosphorus Loadings

	Lee	Lenox	Pittsfield	Total
September 2007 Effluent Concentrations (mg/L)[1]	0.71	0.49	0.84	
September 2007 Effluent Flow (MGD)	0.74	0.748	11.4	
Total Phosphorus Loading (lb/day) 2007[2]	4.4	3.1	79.9	**87.3**
Median of August Effluent Flow 2014-2018 (MGD)	0.59	0.49	8.5	
New Effluent Limits taking effect 2008-2022	0.20	0.22	0.10	
Total Phosphorus Loading (lb/day) by 2022[2]	1.0	0.9	7.1	**9.0**

[1] September 2007 corresponds to the month the median upstream total phosphorus sample was collected

[2] Loading = Flow (MGD) x Concentration (mg/L) x 8.34 (unit conversion factor)

Based on this analysis as well as the analyses included as the basis for the total phosphorus effluent limits in the 2007 Fact Sheet for the 2007 Permit, the draft permit proposes to continue the year-round total phosphorus effluent limit and monitoring requirements from the 2007 Permit. In addition, the draft permit proposes seasonal monitoring of upstream phosphorus concentrations to ensure that sufficient information is available to reevaluate the effluent limits when the permit is next reissued.

5.1.10 Metals

Dissolved fractions of certain metals in water can be toxic to aquatic life. Therefore, there is a need to limit toxic metal concentrations in the effluent where aquatic life may be impacted. For the development of the Draft Permit, analyses were completed to evaluate whether there is reasonable potential for effluent discharges to cause or contribute to exceedances of the water quality criteria for aluminum, cadmium, copper, lead, nickel and zinc and/or to evaluate whether any existing limits in the 2007 Permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water. The 2007 Permit included no metals. A summary of recent metals monitoring results is provided in Appendix A.

5.1.10.1 Applicable Metals Criteria

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007]). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge

[13] Although not finalized, the Lenox Draft Permit, currently published for public comment includes a 0.22 mg/L total phosphorus effluent limit.

may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 C.F.R. § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

Additionally, the criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations in EPA's National Recommended Water Quality Criteria: 2002, which are incorporated into the Massachusetts WQS by reference. The estimated hardness of Housatonic River downstream of the treatment plant during critical low flow periods and design discharge flow was calculated based on median ambient and effluent hardness data as reported in the Facility's whole effluent toxicity tests during the review period (See Appendices A and B), using the mass balance equation discussed in the next section (substituting hardness for metal concentration). The resulting downstream hardness is 134.2 mg/L and the corresponding criteria are presented in Appendix B.

Massachusetts aluminum criteria are not hardness-dependent and are expressed as total recoverable aluminum.

5.1.10.2 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, the following mass balance is used to project in-stream metal concentrations downstream from the discharge.

$$Q_d C_d + Q_s C_s = Q_r C_r$$

Solving for the receiving water metal concentration downstream of the discharge (C_r) yields:

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

Where:

Q_s = 7Q10 flow upstream of Facility
Q_d = design flow of Facility
Q_r = combined stream flow (7Q10 + design flow)
C_s = median upstream metal concentration
C_d = effluent metals concentration (95th percentile[14])

Reasonable potential is then determined by comparing this resultant in-stream concentration (for both acute and chronic conditions) with the criteria for each metal. In EPA's Technical Support Document for Water Quality Based Toxics Control, EPA/505/2-90-001, March 1991, commonly known as the "TSD", box 3-2 describes the statistical approach in determining if there is reasonable potential for an excursion above the maximum allowable concentration. If there is reasonable potential (for either acute or chronic conditions), the appropriate limit is then calculated by rearranging the above mass balance to solve for the effluent concentration (C_d) using the criterion as the resultant in-stream concentration (C_r).

[14] The Facility's effluent concentrations (from Appendix A) were characterized assuming a lognormal distribution to determine the estimated 95th percentile of the daily maximum (*See* Appendix E).x

For metals with an existing limit in the 2007 Permit, a reasonable potential determination is not applicable so the table indicates "N/A" for reasonable potential. In such cases, the same mass balance equation is used to determine if a more stringent limit would be required to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

Alternately, if the mass balance indicates that a less stringent effluent concentration (C_d) would meet WQS under current conditions, a case-by-case analysis must be done to determine if backsliding is allowable based on the exceptions found at 40 CFR § 122.44(l)(2)(i).

The results of this analysis for each metal are presented in Appendix C. As shown in Appendix C, the Draft Permit does not require limits for Aluminum, Cadmium, Copper, Lead, Nickel, or Zinc.

5.1.11 Whole Effluent Toxicity

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would affect aquatic life or human health.

In addition, under § 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on WQSs. Under certain narrative State WQSs, and §§ 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limitations to implement the narrative "no toxics in toxic amounts". The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "*All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife."*

National studies conducted by the EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, EPA assumes that there is a reasonable potential for this discharge to cause or contribute to an exceedance of the "no toxics in toxic amounts" narrative water quality standard.

Further, EPA Region 1 and MassDEP[15] current toxic policies require toxicity testing for all dischargers such as the Great Barrington WWTF. In accordance with these policies, whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism,

[15] Implementation Policy for the Control of Toxic Pollutants in Surface Waters, MassDEP 1990

known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the LC_{50}. According to this policy dischargers having a dilution factor between 10 and 20 are required to conduct acute and chronic toxicity testing four times per year for two species, and the LC_{50} limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2007 Permit are C-NOEC greater than or equal to 8.5% and LC_{50} greater than or equal to 100%, respectively, using the daphnid, *Ceriodaphnia dubia (C. dubia)*, as the test species. From 2014 – 2018, the Facility violated the LC_{50} limit once in January 2014, when the reported LC_{50} was 89.1%. A summary of WET monitoring results is provided in Appendix A. It is noted that as part of the 2007 permit issuance, EPA eliminated the required testing for the fathead minnow (*Pimephales promelas*) based on WET Testing results as *Ceriodaphnia dubia* was found to be the more sensitive species.

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 16.9, anti-backsliding requirements, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the Draft Permit continues the effluent limits from the 2007 Permit including the test organism and the testing frequency. Toxicity testing must be performed in accordance with the updated EPA Region 1 test WET test procedures and protocols specified in Attachments A and B of the Draft Permit (USEPA Region 1 Freshwater Acute Toxicity Test Procedure and Protocol, February 2011 and USEPA Region 1 Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013).

5.2 Industrial Pretreatment Program

The permittee has requested permission from EPA to continue including its Industrial Pretreatment Program requirements in its NPDES permit, in case there is an opportunity to accept flow from a Significant Industrial User during the life of this permit. Therefore, the permittee is required to administer a pretreatment program based on the authority granted under 40 C.F.R. 122.44(j), 40 C.F.R. Part 403 and Section 307 of the Act. The permittee's pretreatment program received EPA approval on December 9, 1998 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit, which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 C.F.R. Part 403 were amended in October 1988, in July 1990, and again in October 2005. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. Those activities that the permittee must address include, but are not limited to, the following: 1) develop and enforce EPA approved specific effluent limits (technically-based local limits); 2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; 3) develop an enforcement response plan; 4) implement a slug control evaluation program; 5) track significant noncompliance for industrial users; and 6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

In addition to the requirements described above, the Draft Permit requires the permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft Permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually by **October 31st**, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

5.3 Sludge Conditions

Section 405(d) of the Clean Water Act requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

5.4 Infiltration/Inflow (I/I)

Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The Draft Permit includes a requirement for the permittee to control infiltration and inflow (I/I) within the sewer collections system it owns and operates. The permittee shall develop an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

5.5 Operation and Maintenance of the Sewer System

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 C.F.R. § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. The requirements at 40 C.F.R. § 122.41(d) impose a 'duty to mitigate' upon the permittee, which requires that "all reasonable steps be taken to minimize or prevent any discharge violation of the permit that has a reasonable likelihood of adversity affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 C.F.R. § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems

(combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Wastewater Treatment Facility and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the Draft Permit are not included in the 2007 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the Draft Permit.

5.6 Standard Conditions

The standard conditions of the permit are based on 40 C.F.R. §122, Subparts A, C, and D and 40 C.F.R. § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits. Federal Permitting Requirements.

6 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and habitat of such species that has been designated as critical (a "critical habitat").

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Facility. The Draft Permit is intended to replace the 2007 Permit in governing the Facility. Specifically, the Draft Permit proposes to regulate the discharge from Outfall 001, located at Latitude 42° 11'22" N, Longitude -73° 21'31" W, on the east bank of the Housatonic River in Great Barrington, Massachusetts.

As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under § 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area to determine if EPA's proposed NPDES permit could potentially impact any such listed species. One species under the jurisdiction of the USFWS was identified, namely

the federally listed northern long-eared bat (*Myotis septentrionalis*). This terrestrial animal species is classified as threatened.[16] According to the USFWS, the northern long-eared bat is found in "winter - mines and caves, summer - wide variety of forested habitats." This species is not aquatic, so the discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.

In addition, two anadromous fish species under the jurisdiction of NMFS occur in Massachusetts waters, the shortnose sturgeon (*Acipenser brevirostrom*) and Atlantic sturgeon (*Acipenser oxyrinchus*), classified as threatened and/or endangered.[17] In general, these fish are not expected to be present upstream of the Derby Dam in Derby, Connecticut. The action area is approximately 87 river miles upstream of this dam. Based on the expected normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge and the action area of the outfall. Therefore, the proposed permit action will have no impact on these listed anadromous fish species.

Based on the above review, EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or their designated critical habitat. Therefore, consultation with NMFS or USFWS under Section 7 of the ESA is not required.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 et seq., 1998), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. §1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Housatonic River is not covered by any EFH designation for riverine systems and thus EPA has determined that consultation with NMFS Habitat Conservation Division is not required.

[16] See Section7 resources for USFWS at https://ecos.fws.gov/ipac/
[17] See Section7 resources for NMFS at https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html

7 Public Comments, Hearing Requests and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to:

Janet Deshais, EPA New England, Region1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912, or via email to deshais.janet@epa.gov

and

Jennifer Wood, Surface Water Discharge Program, MassDEP, One Winter Street, 5th Floor, Boston, MA 02108, or via email to jennifer.wood@mass.gov

Any person, prior to the close of the public comment period, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19 and/or submit a request for an adjudicatory hearing to MassDEP's Office of Appeals and Dispute Resolution consistent with 310 CMR 1.00.

8 EPA Contact

The administrative record on which this Draft Permit is based may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Janet Deshais
EPA New England, Region1
5 Post Office Square, Suite-100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1667, FAX: (617) 918-0667
Email: deshais.janet@epa.gov

June 2019

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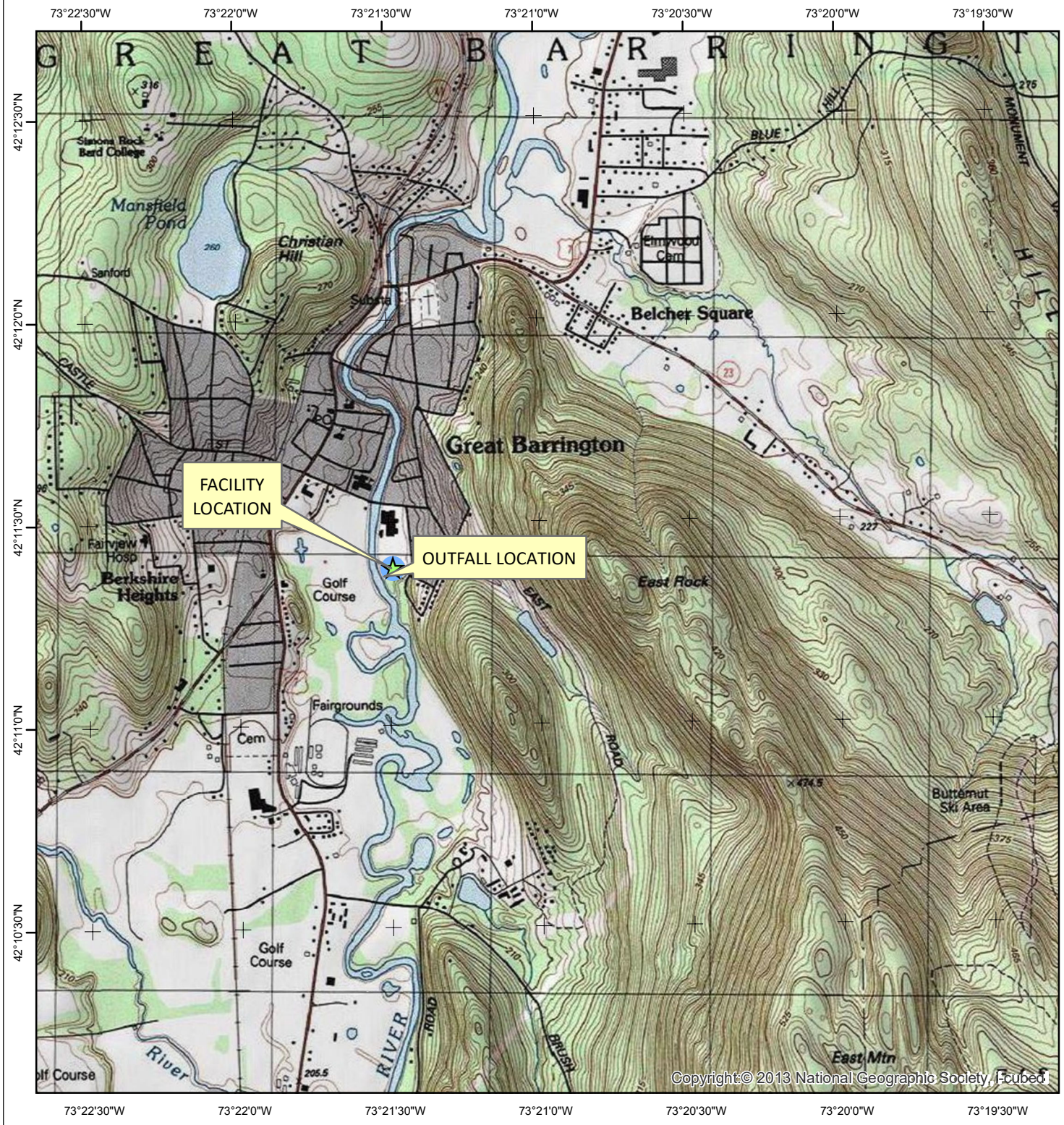
Date

_____
Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency



Scale 1 : 25,000

0 500 1,000 Meters

0 1,000 2,000 3,000 Feet

Regulated Facilities: EPA

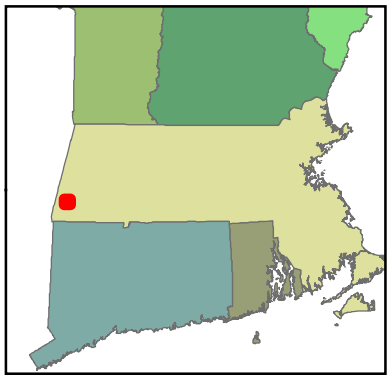


FIGURE 1
Great Barrington WWTP
Location Map

Great Barrington, Massachusetts

EPA

4/12/2019

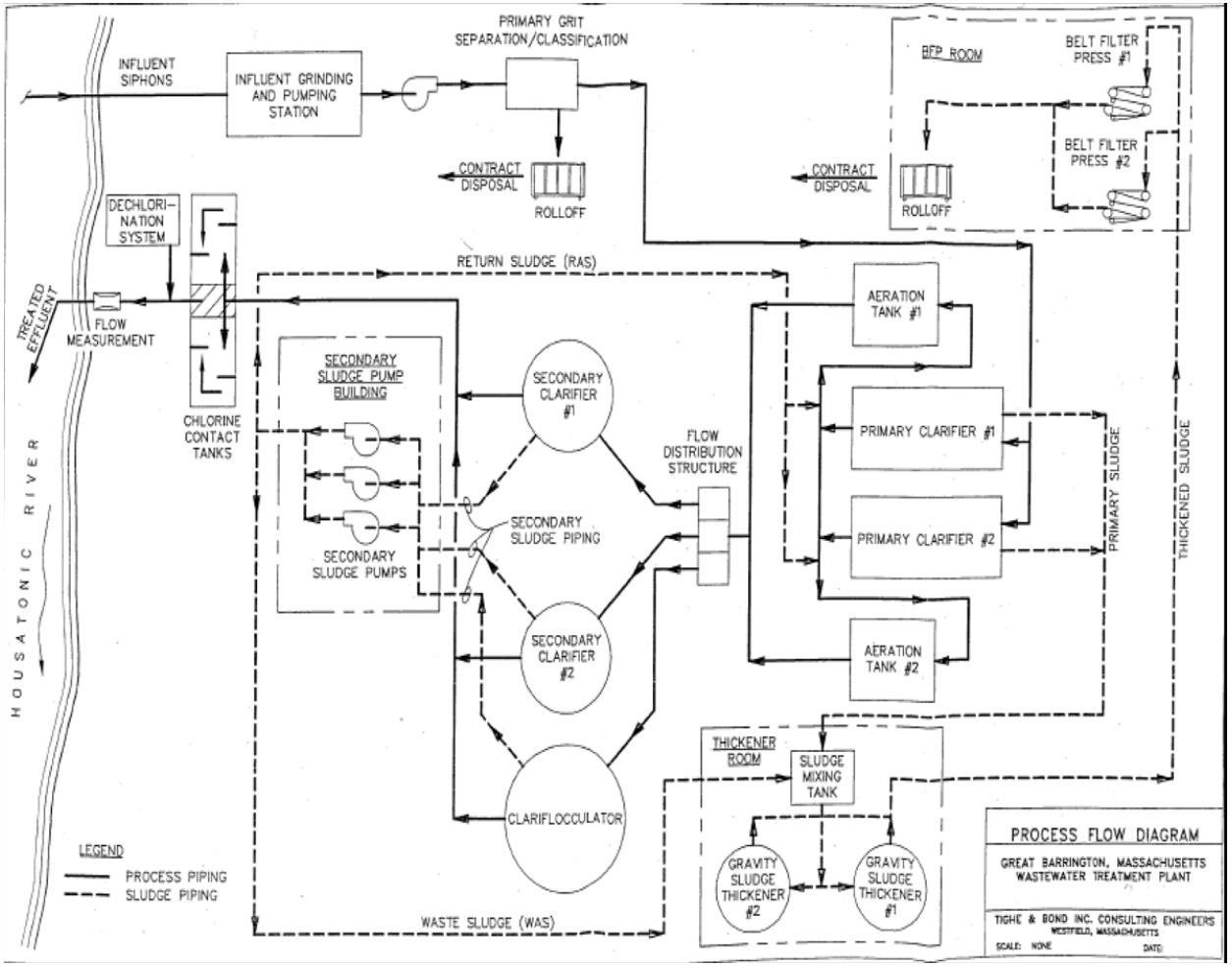


Figure 2. Flow diagram.

Parameter	Flow, total	Flow	Flow	BOD_5	BOD_5	BOD_5	BOD_5	BOD_5	BOD_5
	Annual Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave
Units	**MGD**	**MGD**	**MGD**	**lb/d**	**mg/L**	**lb/d**	**mg/L**	**mg/L**	**% Removal**
Effluent Limit	**3.2**	**Report**	**Report**	**800**	**30**	**1200**	**45**	**Report**	**85**
Minimum	**0.752**	**0.476**	**0.62**	**13**	**2.7**	**14**	**2.9**	**4**	**0.752**
Maximum	**1.315**	**2.061**	**3.048**	**166.6**	**17.4**	**350.4**	**36.6**	**109**	**1.315**
Average	**0.943**	**0.996**	**1.58**	**56.1**	**6.64**	**76.1**	**9.28**	**14.5**	**0.943**
No. of Violations	**0**	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**	**60**
1/31/2014	0.883	1.276	1.918	83	7.8	98.9	9.3	11.1	93.5
2/28/2014	0.89	0.864	1.52	58.4	8.1	72.8	10.1	13	95
3/31/2014	0.907	1.199	3.048	97	9.7	116	11.6	12.6	93.9
4/30/2014	0.988	1.786	2.436	110.2	7.4	140	9.4	12	93.1
5/31/2014	1.03	1.293	2.429	86.3	8	115.4	10.7	13.2	94.8
6/30/2014	0.996	0.902	1.125	47.4	6.3	59.4	7.9	9.1	97.2
7/31/2014	1.04	1.425	2.437	82	6.9	123.6	10.4	13.5	94.5
8/31/2014	1.065	1.019	1.792	33.1	3.9	41.6	4.9	5	97.7
9/30/2014	1.045	0.58	0.724	13	2.7	14	2.9	4	98.7
10/31/2014	1.047	0.661	1.412	27	4.9	33	6	8.3	98
11/30/2014	1.057	0.764	1.043	45.9	7.2	64.4	10.1	101.4	96.6
12/31/2014	1.104	1.473	2.289	119.2	9.7	157.2	12.8	16.4	92.4
1/31/2015	1.093	1.148	1.695	166.6	17.4	350.4	36.6	41.4	87.7
2/28/2015	1.089	0.82	0.913	104.6	15.3	137.5	20.1	20.6	92.6
3/31/2015	1.08	1.086	1.842	135	14.9	31	31	39.5	91.8
4/30/2015	1.073	1.702	2.36	105	7.4	160.4	11.3	13	93.4
5/31/2015	1.033	0.81	1.188	28.4	4.2	33.8	5	6.1	97.9
6/30/2015	1.045	1.05	1.653	51.7	5.9	63.9	7.3	9.6	96.7
7/31/2015	1.006	0.957	1.649	50.3	6.3	75	9.4	10	97
8/31/2015	0.977	0.672	1.161	20.2	3.6	26.9	4.8	7.3	98.5
9/30/2015	0.976	0.563	1.025	13.6	2.9	18.3	3.9	4.2	98.7
10/31/2015	0.966	0.55	0.766	17.4	3.8	21.1	4.6	5.8	98.5
11/30/2015	0.954	0.62	0.762	26.4	5.1	31	6	6.9	97.6
12/31/2015	0.894	0.751	1.176	44.5	7.1	60.1	9.6	9.7	96.3
1/31/2016	0.871	0.867	1.164	38.3	5.3	49.9	6.9	7.8	96.7
2/29/2016	0.894	1.101	2.512	62.4	6.8	74.4	8.1	10.8	95.4
3/31/2016	0.897	1.126	1.635	82.6	8.8	94	10	12.2	93.2
4/30/2016	0.843	1.048	1.939	63.8	7.3	65.6	7.5	9	94.6
5/31/2016	0.842	0.799	0.973	43.3	6.5	72.6	10.9	12.8	96.2
6/30/2016	0.81	0.666	1.47	33.9	6.1	41.1	7.4	8.6	97.2
7/31/2016	0.777	0.555	0.798	26.8	5.8	35.1	7.6	7.9	97.1
8/31/2016	0.762	0.501	0.62	16.7	4	20	4.8	6.7	98.4
9/30/2016	0.755	0.476	0.717	16.3	4.1	18.7	4.7	5.6	98.2
10/31/2016	0.752	0.509	0.751	31	7.3	43.3	10.2	13.7	96.6
11/30/2016	0.752	0.627	1.163	43.4	8.3	55.4	10.6	15.7	96.4
12/31/2016	0.773	1.005	1.901	68.7	8.2	78	9.3	10.2	94.9
1/31/2017	0.79	1.063	1.26	55	6.2	62.9	7.1	9.7	95.7

Parameter	Flow, total	Flow	Flow	BOD_5	BOD_5	BOD_5	BOD_5	BOD_5	BOD_5
	Annual Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave
Units	**MGD**	**MGD**	**MGD**	**lb/d**	**mg/L**	**lb/d**	**mg/L**	**mg/L**	**% Removal**
Effluent Limit	**3.2**	**Report**	**Report**	**800**	**30**	**1200**	**45**	**Report**	**85**
Minimum	**0.752**	**0.476**	**0.62**	**13**	**2.7**	**14**	**2.9**	**4**	**0.752**
Maximum	**1.315**	**2.061**	**3.048**	**166.6**	**17.4**	**350.4**	**36.6**	**109**	**1.315**
Average	**0.943**	**0.996**	**1.58**	**56.1**	**6.64**	**76.1**	**9.28**	**14.5**	**0.943**
No. of Violations	**0**	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**	**60**
2/28/2017	0.784	1.031	1.6334	98	11.4	237.3	27.6	45.9	91.5
3/31/2017	0.785	1.144	2.038	56.3	5.9	63.9	6.7	6.9	95.4
4/30/2017	0.823	1.503	2.391	81.5	6.5	87.7	7	9.1	93.8
5/31/2017	0.869	1.353	2.005	49.6	4.4	67.7	6	6.9	96.3
6/30/2017	0.893	0.948	1.448	46.6	5.9	56.1	7.1	7.7	96.3
7/31/2017	0.906	0.717	0.89	46	7.7	69.7	11.6	14.1	96.7
8/31/2017	0.914	0.594	0.814	21.3	4.3	29.7	6	6.2	98.2
9/30/2017	0.921	0.556	0.725	26.9	5.8	34.8	7.5	8.8	97.4
10/31/2017	0.924	0.543	1.159	22.2	4.9	25	5.5	10.6	97.6
11/30/2017	0.924	0.626	0.76	41.7	8	54.8	10.5	109	95.5
12/31/2017	0.892	0.62	0.768	45.5	8.8	56.9	11	11.8	95.8
1/31/2018	0.896	1.113	2.312	106.7	11.5	220.9	23.8	28.4	91.6
2/28/2018	0.933	1.475	2.059	63	5.1	67	5	6	95
3/31/2018	0.971	1.606	2.162	67	5	74.4	6.4	7	93.9
4/30/2018	0.97	1.486	1.95	86	6.9	112	8.4	9.3	92.7
5/31/2018	0.95	1.11	1.433	39.8	4.3	67.8	7	8.7	93.3
6/30/2018	0.931	0.725	1.091	31.4	5.2	46.1	6.9	8.3	97.3
7/31/2018	0.924	0.631	0.971	24	4.5	31	5.1	5.8	97.9
8/31/2018	0.973	1.183	1.81	45.4	4.6	67.5	5.9	7	97
9/30/2018	1.017	1.083	2.605	37	4.1	91	5.9	9.3	97.3
10/31/2018	1.102	1.564	2.759	53	4.1	67	5	5.8	96
11/30/2018	1.221	2.061	3.009	67	3.9	96	4.6	5.3	94
12/31/2018	1.315	1.747	2.706	61.2	4.2	82.2	5.2	6	95.3

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	pH	pH
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave	Minimum	Maximum
Units	lb/d	mg/L	lb/d	mg/L	mg/L	% Removal	SU	SU
Effluent Limit	800	30	1200	45	Report	85	6.5	8.3
Minimum	**9.8**	**1.5**	**12.4**	**1.6**	**1.8**	**0.476**	**6.9**	**7.2**
Maximum	**99.6**	**10.4**	**256.6**	**26.8**	**95.6**	**2.061**	**7.4**	**7.9**
Average	**31.5**	**3.97**	**49.4**	**5.88**	**8.98**	**0.996**	**7.18**	**7.55**
No. of Violations	**0**	**0**	**0**	**0**	**N/A**	**60**	**0**	**0**
1/31/2014	33	3.1	40.4	3.8	4	97.5	7.1	7.7
2/28/2014	19.4	2.7	23.8	3.3	3.4	98	7	7.5
3/31/2014	40	4	45	4.5	4.6	97.1	7.1	7.7
4/30/2014	26.9	4.1	79	5.3	6	96.2	7.4	7.6
5/31/2014	53.9	5	83.1	7.7	9.1	96.9	7.1	7.8
6/30/2014	29.3	3.9	37.6	5	6.8	98.4	7.3	7.6
7/31/2014	59.4	5	117.7	9.9	12.2	96.8	7.3	7.7
8/31/2014	23	2.7	24.6	2.9	3.6	98.4	7.3	7.5
9/30/2014	11.6	2.4	13	2.7	3	99.2	7.3	7.5
10/31/2014	16.5	3	21	3.8	5.9	98.9	7.2	7.5
11/30/2014	31.2	4.9	54.2	8.5	11.1	97.9	7.2	7.5
12/31/2014	60.2	4.9	90.9	7.4	11	96.2	7.4	7.5
1/31/2015	99.6	10.4	256.6	26.8	31	92	7.1	7.7
2/28/2015	57.4	8.4	91.6	13.4	15	95.3	7.2	7.6
3/31/2015	58.9	6.5	124	13.7	20.6	96.1	7.2	7.6
4/30/2015	65.3	4.6	93.7	6.6	7.6	96.7	7.2	7.6
5/31/2015	18.2	2.7	22.3	3.3	4.3	98.8	6.9	7.4
6/30/2015	32.4	3.7	40.3	4.3	6.3	98.4	7	7.4
7/31/2015	32.7	4.1	52.7	6.6	7.2	98.5	7.1	7.5
8/31/2015	12.9	2.3	15.7	2.8	4.3	99.1	7.1	7.4
9/30/2015	11.3	2.4	18.3	3.9	4	99	7	7.4
10/31/2015	10.6	2.3	15.1	3.3	3.8	99.2	7.1	7.4
11/30/2015	9.8	1.9	12.4	2.4	2.7	99.3	7.2	7.5
12/31/2015	23.8	3.8	38.2	6.1	6.2	98.4	7.2	7.6
1/31/2016	17.4	2.4	22.4	3.1	3.2	98.5	7.2	7.7
2/29/2016	24.8	2.7	33	3.6	5.2	98.2	7.2	7.6
3/31/2016	34.7	3.7	50.4	5.4	6.4	97.1	7.3	7.6
4/30/2016	36.7	4.2	49	5.5	5.8	97	7.3	7.6
5/31/2016	28.6	4.3	49.3	7.4	9	97.7	7.4	7.9
6/30/2016	32.2	5.8	40	7.2	8.8	97.7	7.2	7.5
7/31/2016	27.8	6	35.2	7.6	9	97.3	7	7.3
8/31/2016	16.7	4	21.7	5.2	95.6	98.5	7	7.2
9/30/2016	12.7	3.2	40.1	4.9	5.1	98.8	6.9	7.3
10/31/2016	26.3	6.2	31.4	7.4	10	97.8	7.1	7.6
11/30/2016	29.8	5.7	35.6	6.8	9.6	97.8	7	7.4
12/31/2016	45.2	5.4	49.5	5.9	7.6	96.8	7.1	7.5
1/31/2017	24	2.7	26.6	3	3.6	98	7.1	7.5

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	pH	pH
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave	Minimum	Maximum
Units	lb/d	mg/L	lb/d	mg/L	mg/L	% Removal	SU	SU
Effluent Limit	800	30	1200	45	Report	85	6.5	8.3
Minimum	**9.8**	**1.5**	**12.4**	**1.6**	**1.8**	**0.476**	**6.9**	**7.2**
Maximum	**99.6**	**10.4**	**256.6**	**26.8**	**95.6**	**2.061**	**7.4**	**7.9**
Average	**31.5**	**3.97**	**49.4**	**5.88**	**8.98**	**0.996**	**7.18**	**7.55**
No. of Violations	**0**	**0**	**0**	**0**	**N/A**	**60**	**0**	**0**
2/28/2017	31.8	3.7	83.4	9.7	17	97.2	7.1	7.4
3/31/2017	20	2.1	33.4	3.5	4	98.4	7.2	7.5
4/30/2017	58.9	4.7	84	6.7	6.8	95.9	7.2	7.6
5/31/2017	31.6	2.8	42.8	3.8	4.6	98	7.3	7.5
6/30/2017	41.1	5.2	66.4	8.4	9.8	97.3	7.2	7.6
7/31/2017	38.3	6.4	71.1	11.9	15.8	97.6	7.1	7.6
8/31/2017	19.8	4	28.7	5.8	7.6	98.5	7.2	7.5
9/30/2017	20	4.3	26.9	5.8	7.1	98.3	7.1	7.4
10/31/2017	17.7	3.9	18.6	4.1	5.8	98.4	7	7.5
11/30/2017	24.5	4.7	39.7	7.6	7.7	97.5	7.3	7.6
12/31/2017	25.3	4.9	31.5	6.1	6.6	97.3	7.2	7.4
1/31/2018	40.8	4.4	52.6	5.7	10.8	96.8	7	7.6
2/28/2018	18.4	1.5	21.6	1.6	1.8	98	7.3	7.7
3/31/2018	28.1	2.1	33.7	2.9	7	97.3	7.2	7.6
4/30/2018	45	3.6	59	4.4	5.2	96.6	7.2	7.5
5/31/2018	21.3	2.3	43.6	4.5	6.2	96.4	7.1	7.5
6/30/2018	25.4	4.2	35.6	5.3	6.5	98.1	7.1	7.5
7/31/2018	23	4.4	32	5.3	9	98.1	7.1	7.4
8/31/2018	28.6	2.9	23.9	3.2	3.8	98	7.3	7.6
9/30/2018	41	4.5	110	7.1	11.6	97.5	7.4	7.7
10/31/2018	34	2.6	47	3.5	5.8	98	7.4	7.8
11/30/2018	34	2	47	2.4	3.1	97.2	7.4	7.8
12/31/2018	25	1.7	35	2.2	2.5	98	7.3	7.7

Parameter	E. coli	E. coli	Fecal Coliform	Fecal Coliform	TRC	TRC	Ammonia
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	200	400	0.13	0.22	Report
Minimum	**1**	**1**	**0**	**5**	**0**	**0.02**	**0.16**
Maximum	**133.3**	**133.3**	**23.7**	**185**	**0.03**	**0.2**	**12.8**
Average	**20.1**	**20.4**	**8.69**	**34.2**	**0.0209**	**0.0617**	**1.16**
No. of Violations	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**
1/31/2014							0.5
2/28/2014							1.8
3/31/2014							0.39
4/30/2014	6.3	6.3	6.1	12.5	0.02	0.05	0.52
5/31/2014	3.1	3.1	4.4	11	0.03	0.14	0.67
6/30/2014	9.6	9.6	6.2	55.5	0.02	0.1	0.47
7/31/2014	60.9	60.9	13.6	52.5	0.02	0.03	0.36
8/31/2014	4.1	13.5	5.83	13.5	0.02	0.04	0.83
9/30/2014	9.5	9.5	2.65	5	0.02	0.04	0.26
10/31/2014	30.5	30.5	18.4	129	0.02	0.03	0.42
11/30/2014							0.33
12/31/2014							0.42
1/31/2015							1.2
2/28/2015							12.1
3/31/2015							12.8
4/30/2015	25.9	25.9	21.2	26.7	0.01	0.02	4.8
5/31/2015	5.2	5.2	4.78	9	0.02	0.03	1.56
6/30/2015	30.5	30.5	9.38	38	0.02	0.04	0.25
7/31/2015	93.3	93.3	7.01	43	0.02	0.02	2.13
8/31/2015	5.2	5.2	7.4	38.5	0.02	0.04	1.1
9/30/2015	13.4	13.4	8.7	14	0.02	0.03	0.28
10/31/2015	26.5	26.5	23.7	185	0.02	0.04	0.44
11/30/2015							0.19
12/31/2015							0.23
1/31/2016							0.36
2/29/2016							0.49
3/31/2016							0.22
4/30/2016	12.2	12.2	8.96	39.5	0.02	0.06	0.22
5/31/2016	14.5	14.5	4.68	11	0.02	0.08	0.52
6/30/2016	5.2	5.2	6.45	23	0.03	0.06	1.75
7/31/2016	4.1	4.1	4.14	15.3	0.02	0.04	2.38
8/31/2016	13	13	6.64	29.5	0.02	0.08	1.24
9/30/2016	21.8	21.8	19.3	48.5	0.02	0.03	0.76
10/31/2016	133.3	133.3	13.5	61.5	0.02	0.03	0.8
11/30/2016							0.71
12/31/2016							0.35
1/31/2017							0.46

Parameter	E. coli	E. coli	Fecal Coliform	Fecal Coliform	TRC	TRC	Ammonia
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave
Units	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	200	400	0.13	0.22	Report
Minimum	**1**	**1**	**0**	**5**	**0**	**0.02**	**0.16**
Maximum	**133.3**	**133.3**	**23.7**	**185**	**0.03**	**0.2**	**12.8**
Average	**20.1**	**20.4**	**8.69**	**34.2**	**0.0209**	**0.0617**	**1.16**
No. of Violations	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**
2/28/2017							0.22
3/31/2017							0.2
4/30/2017	43.2	43.2	6	22	0.03	0.18	0.28
5/31/2017	3	3	5.04	5.3	0.02	0.04	0.22
6/30/2017	5.2	5.2	6.73	14	0.02	0.04	0.37
7/31/2017	9.7	10	4.51	16	0.03	0.18	2.73
8/31/2017	11	11	13.5	40	0.03	0.05	2.5
9/30/2017	33.1	33.1	9.88	32	0.02	0.03	1.24
10/31/2017	2	2	3.73	21	0.03	0.05	1.04
11/30/2017							0.33
12/31/2017							0.38
1/31/2018							0.49
2/28/2018							0.2
3/31/2018							0.16
4/30/2018	9.6	9.6	5.57	13	0.03	0.2	0.22
5/31/2018	16.8	16.8	0	8.5	0.01	0.02	0.64
6/30/2018	1	1	3.82	31.5	0.02	0.03	0.29
7/31/2018	12	12	3.19	12	0.02	0.07	2.21
8/31/2018	6.3	6.3	17	38	0	0.02	0.94
9/30/2018	17.3	17.3	12.27	60	0.03	0.2	0.293
10/31/2018	6.3	6.3	9.73	21	0.01	0.02	0.221
11/30/2018							0.208
12/31/2018							0.187

Parameter	TKN	Nitrate	Nitrite	TP	Orthophosphate(as P)	Orthophosphate(as P)
	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	Report	1	Report	Report
Minimum	**0**	**2.4**	**0**	**0.057**	**1.09**	**0.16**
Maximum	**20**	**19**	**8.02**	**0.86**	**6.2**	**0.48**
Average	**2.07**	**11.8**	**0.412**	**0.532**	**2.76**	**0.305**
No. of Violations	**N/A**	**N/A**	**N/A**	**0**	**N/A**	**N/A**
1/31/2014	1.6	6.8	2.4	0.39	2.76	0.26
2/28/2014	3.6	10	0.12	0.5	2.59	0.36
3/31/2014	2.1	14	0.29	0.42	2.5	0.25
4/30/2014	0	9	0.037	0.41		
5/31/2014	1.4	10	0.017	0.63		
6/30/2014	1	13	0.028	0.51		
7/31/2014	1.2	6.7	0.026	0.51		
8/31/2014	2.3	6.1	0.49	0.55		
9/30/2014	0	14	0.026	0.057		
10/31/2014	0	15	0.014	0.47		
11/30/2014	2.5	15	0.17	0.36	1.33	0.21
12/31/2014	2	9.1	0.83	0.5	3.3	0.27
1/31/2015	0	14	0.37	0.58	2.1	0.22
2/28/2015	14	5.9	0.44	0.52	1.09	0.16
3/31/2015	20	4.5	0.13	0.43	1.72	0.19
4/30/2015	9.5	2.4	0.14	0.35		
5/31/2015	4.1	9.3	0.26	0.61		
6/30/2015	0.24	14	0.02	0.46		
7/31/2015	0	9.5	0.41	0.78		
8/31/2015	2.1	15	0.27	0.72		
9/30/2015	0.18	12	0.017	0.49		
10/31/2015	0.21	18	0.014	0.44		
11/30/2015	0.12	17	0.06	0.47	1.71	0.33
12/31/2015	4	19	0.13	0.7	3	0.48
1/31/2016	0	13	0.4	0.45	2.1	0.29
2/29/2016	0	17	1.7	0.44	2.3	0.25
3/31/2016	2	12	0.2	0.37	1.69	0.18
4/30/2016	1.8	11	0	0.43		
5/31/2016	0.14	13	0.016	0.65		
6/30/2016	2	14	0.24	0.63		
7/31/2016	0	12	0.38	0.73		
8/31/2016	4	11	0.2	0.6		
9/30/2016	0	16	0.03	0.48		
10/31/2016	0	14	0.041	0.64		
11/30/2016	2.2	19	0.42	0.6	1.78	0.34
12/31/2016	2	16	0.53	0.46	2.26	0.27
1/31/2017	0	11	2	0.46	2.75	0.31

Parameter	TKN	Nitrate	Nitrite	TP	Orthophosphate(as P)	Orthophosphate(as P)
	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	Report	1	Report	Report
Minimum	**0**	**2.4**	**0**	**0.057**	**1.09**	**0.16**
Maximum	**20**	**19**	**8.02**	**0.86**	**6.2**	**0.48**
Average	**2.07**	**11.8**	**0.412**	**0.532**	**2.76**	**0.305**
No. of Violations	**N/A**	**N/A**	**N/A**	**0**	**N/A**	**N/A**
2/28/2017	0	9.5	0.5	0.61	3.18	0.37
3/31/2017	0	11.3	0.05	0.3	3.81	0.4
4/30/2017	0	10.7	0	0.42		
5/31/2017	0	8.81	0	0.53		
6/30/2017	1	12.3	0.02	0.86		
7/31/2017	8.24	7.19	1.11	0.77		
8/31/2017	3.26	13.7	0.36	0.58		
9/30/2017	1.87	15.4	0.2	0.7		
10/31/2017	2.99	14.8	0.22	0.6		
11/30/2017	2.03	15.6	0.105	0.6	1.88	0.36
12/31/2017	1.67	18.8	0.165	0.65	2.33	0.45
1/31/2018	2.69	9.36	8.02	0.48	2.6	0.28
2/28/2018	1.21	8.27	0.0276	0.4	3.81	0.31
3/31/2018	1.02	8.58	0.0151	0.5	5.62	0.42
4/30/2018	0.506	9.33	0.0183	0.62		
5/31/2018	3.02	11.9	0.334	0.72		
6/30/2018	0.1	13.5	0.0165	0.67		
7/31/2018	4.26	11.1	0.547	0.67		
8/31/2018	1.43	11.2	0.0542	0.48		
9/30/2018	1.43	11.9	0.0393	0.64		
10/31/2018	0.5	8.72	0.0218	0.44		
11/30/2018	0.48	6.84	0.0202	0.47	6.2	0.36
12/31/2018	0.5	8.96	0.0344	0.39	4.5	0.31

Parameter	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia
	MO MIN	MO MIN
Units	%	%
Effluent Limit	100	8.5
Minimum	89.1	25
Maximum	100	100
Average	99.4	88.2
No. of Violations	1	0
1/31/2014	89.1	50
4/30/2014	100	100
7/31/2014	100	100
10/31/2014	100	100
1/31/2015	100	100
4/30/2015	100	100
7/31/2015	100	100
10/31/2015	100	100
1/31/2016	100	100
4/30/2016	100	100
7/31/2016	100	50
10/31/2016	100	100
1/31/2017	100	100
4/30/2017	100	100
7/31/2017	100	100
10/31/2017	100	100
1/31/2018	NODI: 8	NODI: 8
4/30/2018	100	100
7/31/2018	100	50
10/31/2018	100	25

EFFLUENT SAMPLING FROM WHOLE EFFLUENT TOXICITY (WET) TESTS

Date	Aluminum (mg/L)	Cadmium (mg/L)	Copper (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)	Hardness CaCo3 (mg/L)	Alkalinity CaCo3 (mg/L)	Conductivity (umhos/cm)	Tot. Org Carbon (mg/L)	Tot Diss. Solids (mg/L)	Total Solids (mg/L)
10/7/2013	0.022	<.0005	0.016	<.0005	<.002	0.021	160	130	823	4.9		500
4/7/2014	<.02	<.0005	0.01	<.0005	<.002	0.019	240	170	1175	4.76		650
10/6/2014	0.023	<.0005	0.02	<.0005	0.002	0.031	170	130	877	5.6		530
1/12/2015	<.02	<.0005	0.017	<.0005	<.002	0.029	220	150	984	5.6		500
4/6/2015	0.023	<.0005	0.014	0.0007	<.002	0.016	260	160	1306	5.9		740
7/6/2015	0.1	<.0005	0.012	<.0005	<.002	0.021	250	170	1114	5		670
10/14/2015	<.02	<.0005	0.025	<.0005	0.003	0.033	200	130	938	5.2		590
1/11/2016	<.02	<.0005	0.013	<.0005	<.002	0.036	220	140	927	5.7		530
4/11/2016	<.02	<.0005	0.017	<.0005	<.002	0.023	200	170	1016	6.1		640
7/11/2016	<.02	<.0005	0.016	<.0005	0.002	0.023	160	99	778	6.2		530
10/19/2016	<.02	<.0001	0.021	0.0004	0.003	0.036	160	120	756		440	460
1/27/2017	<.02	<.0001	0.013	0.0003	0.0014	0.031	210	120	1066	5	570	650
4/17/2017	<.02	<.0003	0.011	<.0003	0.0011	0.03	240	160	1217	4.4	670	680
7/17/2017	<.02	<.0003	0.013	0.0005	0.0023	0.024	160	100	879	5.7	540	600
10/20/2017	0.013	<.0003	0.017	0.0003	0.0026	0.03	170	95	849	7.1	500	620
1/25/2018	<.02	<.0003	0.016	0.0003	0.0024	0.034	190	100	981	8.5	540	620
4/12/2018	<.02	<.0003	0.014	<.0003	0.0012	0.03	220	140	1135	4.6	590	620
7/26/2018	0.013	<.0003	0.016	0.0003	0.0021	0.034	180	110	950	5.9	570	650
10/18/2018	<.02	<.0003	0.011	<.0003	<.001	0.02	200	210	1082	4	570	590
1/8/2019	<.02	<.0003	0.01	<.0003	<.001	0.02	210	190	930	3.8	480	540

AMBIENT UPSTREAM DATA FROM WHOLE EFFLUENT TOXICITY (WET) TESTS

Date	Aluminum (mg/L)	Cadmium (mg/L)	Calcium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Magnesium (mg/L)	Nickel (mg/L)	Lead (mg/L)	Zinc (mg/L)	Ammonia (as N) (mg/L)	pH	Hardness (mg/L)	Alkalinity (mg/L)	Conductivity (umhos/cm)	Tot. Org Carbon (mg/L)
10/7/2013	0.037	<.0005	30	<.002	0.005	14	<.002	0.0006	0.004	<.1	8.16	160		464	3.8
4/7/2014	0.2	<.0005	21	<.002	0.006	6.3	<.002	0.002	0.007	<.1	7.85	83	76	254	2.7
10/6/2014	0.047	<.0005	42	<.002	0.007	14	<.002	<.0007	0.004	<.1	8.29	170	180	491	3.3
1/12/2015	0.061	<.0005	31	<.002	0.009	9.8	<.002	0.0008	0.007	0.22	7.92	130	120	359	2.4
4/6/2015	0.23	<.0005	20	<.002	0.006	6	<.002	0.002	0.006	<.1	7.85	79	73	230	3.5
7/6/2015	0.17	<.0005	35	<.002	0.009	11	<.002	0.002	0.018	0.25	8.11	130	120	327	3.4
10/14/2015	0.034	<.0005	40	<.002	0.007	14	<.002	0.002	0.006	<.1	8.2	160	160	447	3.7
1/11/2016	0.092	<.0005	34	<.002	0.005	11	<.002	0.002	0.009	<.1	7.95	130	260	341	3.6
4/26/2016	0.092	<.0005	24	<.002	0.006	8.5	<.002	0.001	0.015	<.1	8.02	90	98	283	4
7/14/2016	0.095	<.0005	36.6	<.002	0.006	13.3	<.002	0.002	0.006	<.1	8.25	160	160	456	3.2
10/23/2016	<.02	<.0001	40.3	<.001	0.0033	16.4	<.001	0.001	0.0033	<.1	8.14	170	170	497	2.9
1/27/2017	0.04	<.0001	31.3	<.001	0.0042	10.8	<.001	0.0024	0.0052	<.1	8.05	130	100	383	3.3
4/17/2017	0.071	<.0001	21.9	<.001	0.0024	7.41	<.001	0.001	0.0036	<.1	7.76	95	88	288	3
7/17/2017	0.11	<.0001	34.3	<.001	0.0042	12.1	<.001	0.0016	0.005	<.1	8.19	130	130	412	3.3
10/24/2017	0.037	<.0001	37.8	<.001	0.0053	13	<.001	0.0012	0.0064	<.1	8.10	140	150	455	4.2
1/15/2018	0.03	<.0003	39.4	<.001	0.0048	13.8	0.0036	0.0011	0.0043	<.1	7.84	160	100	439	3.2
4/13/2018	0.064	<.0003	26.7	<.001	0.007	8.97	0.0019	0.0018	0.011	<.1	8.02	110	86	352	3
7/26/2018	0.089	<.0003	37.4	<.001	0.011	13.4	<.001	0.0019	0.028	<.1	8.23	150	150	466	3.8
10/18/2018	0.077	<.0001	28	<.001	0.0047	9.31	<.001	0.0007	0.016	<.1	8.00	99	110	318	4.5

APPENDIX C
METALS REASONABLE POTENTIAL AND LIMITS CALCULATIONS

Metal	Q_d	C_d [1]		Q_s	C_s [2]	Q_r	C_r		Criteria		Acute Reasonable Potential	Chronic Reasonable Potential	Limits	
	cfs	Acute (µg/l)	Chronic (µg/l)	cfs	µg/l	cfs	Acute (µg/l)	Chronic (µg/l)	Acute (µg/l)	Chronic (µg/l)	C_d & C_r > Criteria	C_d & C_r > Criteria	Acute (µg/l)	Chronic (µg/l)
Aluminum	4.95	0.0	0.0	78.89	71.0	83.84	66.81	66.8	750	87	N	N	N/A	N/A
Cadmium		0.0	0.0		0.0		0.00	0.00	2.88	0.34	N	N	N/A	N/A
Copper		22.0	22.0		6.0		6.94	6.94	18.46	11.99	N	N	N/A	N/A
Lead		0.5	0.5		1.6		1.54	1.54	118.66	4.62	N	N	N/A	N/A
Nickel		3.2	3.2		0.0		0.19	0.19	601.50	66.88	N	N	N/A	N/A
Zinc		39.4	39.4		6.0		7.97	8.0	153.67	153.67	N	N	N/A	N/A

[1]Values represent the 95th percentile (for n ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period (see Attachments B & F). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

[2]Median concentration for the receiving water just upstream of the facility's discharge taken from the WET testing data during the review period (see Attachment B).

Reasonable Potential Analysis
no ND, >10 data points, Lognormal distribution

cold weather data

Dilution Factor:	16.9

Date	Am (mg/L)	*Yi* lnAm (mg/L)
1/31/2014	0.5	-0.6931
2/28/2014	1.8	0.5878
3/31/2014	0.39	-0.9416
11/30/2014	0.33	-1.1087
12/31/2014	0.42	-0.8675
1/31/2015	1.2	0.1823
2/28/2015	12.1	2.4932
3/31/2015	12.8	2.5494
11/30/2015	0.19	-1.6607
12/31/2015	0.23	-1.4697
1/31/2016	0.36	-1.0217
2/29/2016	0.49	-0.7133
3/31/2016	0.22	-1.5141
11/30/2016	0.71	-0.3425
12/31/2016	0.35	-1.0498
1/31/2017	0.46	-0.7765
2/28/2017	0.22	-1.5141
3/31/2017	0.2	-1.6094
11/30/2017	0.33	-1.1087
12/31/2017	0.38	-0.9676
1/31/2018	0.49	-0.7133
2/28/2018	0.2	-1.6094
3/31/2018	0.16	-1.8326
11/30/2018	0.208	-1.5702
12/31/2018	0.187	-1.6766

Am - (Lognormal distribution, no ND)

Estimated Daily Maximum Effluent Concentration

k = number of daily samples =	25
u_y = Avg of Nat. Log of daily Discharge =	-0.75794
s_y = Std Dev. of Nat Log of daily discharge =	1.14472
σ_y^2 = estimated variance = (SUM[$(y_i - u_y)^2$]) / (k-1) =	1.310390899
cv(x)= Coefficient of Variation =	-1.510301696

99th Percentile Daily Max Estimate = exp (u_y + 2.326*s_y)

Estimated Daily Max 99th percentile =	**6.7173 mg/L**
Estimated Daily Max including Dilution Factor =	**0.3975 mg/L**

95th Percentile Daily Max Estimate = exp (u_y + 1.645*s_y)

Estimated Daily Max =	**3.0806 mg/L**
Estimated Daily Max including Dilution Factor =	**0.1823 mg/L**

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT, AS AMENDED, AND SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN WATERS ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CLEAN WATER ACT.

PUBLIC NOTICE PERIOD: June 21, 2019 – July 22, 2019

PERMIT NUMBER: **MA0101524**

PUBLIC NOTICE NUMBER: MA-011-19

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Great Barrington
Department of Public Works
334 Main Street
Great Barrington, MA 01230

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Town of Great Barrington Wastewater Treatment Facility
100 Bentley Road
Great Barrington, MA 01230

RECEIVING WATER: Housatonic River (Class B)

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a draft permit for the Great Barrington WWTF, which discharges treated domestic wastewater. Sludge from this facility is transported to Synagro Northeast of Waterbury, Connecticut, for incineration. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00, and State Surface Water Quality Standards at 314 CMR 4.00. EPA has requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit and explanatory fact sheet may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by contacting:

Janet Deshais
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-0667
deshais.janet@epa.gov

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **July 22, 2019**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and MassDEP for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

LEALDON LANGLEY, DIRECTOR
WETLANDS AND WASTEWATER
PROGRAM
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION

KEN MORAFF, DIRECTOR
WATER DIVISION
EPA-REGION 1