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"),

Westborough Wastewater Treatment Plan Board ("Permittee")

is authorized to discharge from the facility located at

Westborough Wastewater Treatment Plant
238 Turnpike Road
Westborough, MA 01581

to receiving water named

Assabet River (MA82B-02)
SuAsCo Watershed – USGS Code: 01070005
Class B – Warm Water Fishery

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

The towns of Westborough, Shrewsbury, and Hopkinton are Co-permittees for Part B, Unauthorized Discharges; Part C, Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collections systems owned and operated by the Towns; and Part D, Alternate Power Source.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Part B, Part C and Part D of this permit. The Permittee and each Co-permittees are severally liable under Part B, Part C and Part D for their own activities and required reporting with respect to the portions of the collection system that they own or operate. They are not liable for violations of Part B, Part C and Part D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting that is required of other Permittees under Part B, Part C and Part D. The responsible Town departments are:

Town of Westborough Department of Public Works 131 Oak Street Westborough, MA 01581	Town of Shrewsbury Department of Public Works 100 Maple Avenue 2nd Floor Shrewsbury, MA 01545	Town of Hopkinton Department of Public Works 83 Wood Street Hopkinton, MA 01748

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 May 26, 2005.

[1] Procedures for appealing EPA's Final Permit decision may be found at 40 C.F.R. § 124.19.

This permit consists of **Part I** including the cover page(s), **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

KENNETH MORAFF Digitally signed by KENNETH MORAFF Date: 2022.02.08 09:30:50 -05'00'

_____

Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

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 Assabet 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	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow[5]	7.68 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5 (April 1 - October 31)	10 mg/L 640 lb/day	10 mg/L 640 lb/day	15 mg/L ---	3/Week	Composite
$CBOD_5$ (November 1 - March 31)	25 mg/L 1,600 lb/day	40 mg/L 2,560 lb/day	Report mg/L	3/Week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	Calculation
TSS (April 1 - October 31)	15 mg/L 960 lb/day	15 mg/L 960 lb/day	25 mg/L	3/Week	Composite
TSS (November 1 - March 31)	30 mg/L 1,920 lb/day	45 mg/L 2,880 lb/day	Report mg/L	3/Week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range[6]	6.5 - 8.3 S.U.			3/Day	Grab
Escherichia coli [7,8]	126 cfu/100 mL	---	409 cfu/100 mL	3/Week	Grab
Total Residual Chlorine[7,8]	0.011 mg/L	---	0.019 mg/L	2/Day	Grab
Total Copper	0.016 mg/L	---	0.016 mg/L	1/Month	Composite
Interim Limit Total Aluminum[9]	Report mg/L	---	Report mg/L	1/Month	Composite
Total Aluminum	0.087 mg/L	---	Report mg/L	1/Month	Composite
Dissolved Oxygen	≥ 6.0 mg/L			1/Day	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
(April 1 – October 31)					
Total Phosphorus (April 1 – October 31)	0.1 mg/L Report lb/day	---	Report mg/L Report lb/day	3/Week	Composite
Interim Limit Total Phosphorus[10] (November 1 – March 31)	1 mg/L Report lb/day	---	Report mg/L Report lb/day	1/Week	Composite
Total Phosphorus (November 1 – March 31)	0.2 mg/L Report lb/day	---	Report mg/L Report lb/day	1/Week	Composite
Ammonia Nitrogen (April 1 – May 31)	2.6 mg/L Report lb/day	---	Report mg/L	2/Week	Composite
Ammonia Nitrogen (June 1 – October 31)	1 mg/L Report lb/day	1 mg/L Report lb/day	1.5 mg/L	2/Week	Composite
Ammonia Nitrogen (November 1 – March 31)	5.1 mg/L Report lb/day	---	Report mg/L	1/Week	Composite
Total Kjeldahl Nitrogen[11] (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L ---	1/Week 1/Month	Composite
Nitrate + Nitrite[11] (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L ---	1/Week 1/Month	Composite
Total Nitrogen[11] (April 1 – October 31) (November 1 – March 31)	Report mg/L Report lb/day	---	Report mg/L ---	1/Week 1/Month	Calculation
Perfluorohexanesulfonic acid (PFHxS)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluoroheptanoic acid (PFHpA)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[12]	---	---	Report ng/L	1/Quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Perfluorooctanesulfonic acid (PFOS)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorodecanoic acid (PFDA)[12]	---	---	Report ng/L	1/Quarter	Composite
Whole Effluent Toxicity[13,14]					
LC_{50}	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 100 %	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	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
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[16]	---	---	Report mg/L	1/Quarter	Grab
pH[17]	---	---	Report S.U.	1/Quarter	Grab
Temperature[17]	---	---	Report °C	1/Quarter	Grab
Total Phosphorus[18] (April 1 - October 31)	---	---	Report mg/L	1/Month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
Perfluorohexanesulfonic acid (PFHxS)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluoroheptanoic acid (PFHpA)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[12]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[12]	---	---	Report ng/L	1/Quarter	Composite

Perfluorodecanoic acid (PFDA)[12]	---	---	Report ng/L	1/Quarter	Composite
Sludge Characteristics	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[19]	---	---	Report ng/g	1/Year	Composite
Perfluoroheptanoic acid (PFHpA)[19]	---	---	Report ng/g	1/Year	Composite
Perfluorononanoic acid (PFNA)[19]	---	---	Report ng/g	1/Year	Composite
Perfluorooctanesulfonic acid (PFOS)[19]	---	---	Report ng/g	1/Year	Composite
Perfluorooctanoic acid (PFOA)[19]	---	---	Report ng/g	1/Year	Composite
Perfluorodecanoic acid (PFDA)[19]	---	---	Report ng/g	1/Year	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 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR 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 CFR Part 136 or required under 40 CFR 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). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

   A "composite" sample is a composite 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.

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which 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. Also report monthly average and maximum daily flow in MGD.

6. 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.).

7. 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. The compliance level for TRC is 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.

8. 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.

9. See Part I.G.1 for a compliance schedule and interim monitoring requirements for aluminum.

10. See Part I.G.2 for a compliance schedule and interim monitoring requirement for total phosphorus from November to March.

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

    Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

    Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.345

12. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. See

https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

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 DMR submittal which includes the results for that toxicity 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. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

17. 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.

18. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.

19. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for biosolids is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids and https://www.epa.gov/cwa-methods.

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 Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 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 in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. 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 collection system owned and operated respectively by the Towns of Westborough, Shrewsbury, and Hopkinton ("Co-permittees") shall be in compliance with the activities and required reporting with respect to the portions of the collection system that each owns and operates. The Permittee and co-permittees shall only be responsible for violations relative to the portions of the collection system that they own and operate.

1. Maintenance Staff

   The Permittee and Co-permittees 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 and Co-permittees 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 and Co-permittees 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 and Co-permittees shall prepare a map of the sewer collection system it owns. 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

The Permittee and Co-permittees shall develop and implement a Collection System O&M Plan.

a. Within six (6) months of the effective date of the permit, the Permittee and Co-permittees shall submit to EPA and the State

(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 submittal from 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 and Co-permittees 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 31 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 7.68 MGD design flow (6.14 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 and Co-permittees 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 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 CFR Part 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 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 **September 1** 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 CFR 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 CFR Part 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 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

7. Beginning 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website (See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods) the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

- Platers/Metal Finishers
- Paper and Packaging Manufacturers
- Tanneries and Leather/Fabric/Carpet Treaters
- Manufacturers of Parts with Polytetrafluroethlylene (PTFE) or teflon type coatings (i.e. bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Contaminated Sites
- Fire Fighting Training Facilities

- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be for the following PFAS chemicals:

Industrial User Effluent Characteristic	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	Report ng/L	1/year	Composite
Perfluoroheptanoic acid (PFHpA)	Report ng/L	1/year	Composite
Perfluorononanoic acid (PFNA)	Report ng/L	1/year	Composite
Perfluorooctanesulfonic acid (PFOS)	Report ng/L	1/year	Composite
Perfluorooctanoic acid (PFOA)	Report ng/L	1/year	Composite
Perfluorodecanoic acid (PFDA)	Report ng/L	1/year	Composite

The Industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.3).

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 CFR Part 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 CFR Part 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 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 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 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

    a. General requirements

    b. Pollutant limitations

c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

d. Management practices

e. Record keeping

f. Monitoring

g. Reporting

Which of the 40 CFR Part 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 CFR § 503.8.

7. Under 40 CFR § 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 CFR § 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 Part 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 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 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 CFR § 503 Subpart B.

8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 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

[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

Compliance Guidance"). Reports shall be submitted electronically using EPA's Electronic Reporting tool ("NeT") (see "Reporting Requirements" section below).

G. SPECIAL CONDITIONS

1. Total Aluminum Limit Compliance Schedule

   The new effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limits take effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the permittee is required to monitor its average monthly total aluminum concentration. After this initial three (3) year period, the permittee shall comply with the final monthly average total aluminum limit of 0.087 mg/L ("final aluminum effluent limit"). The permittee shall submit an annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

   If during the three-year period after the effective date of the permit, EPA has not yet approved the revised aluminum criteria, then the permittee may request a permit modification, pursuant to 40 C.F.R. § 122.62(a)(3), for a further delay of the effective date of the final aluminum effluent limit. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the permittee may apply for a permit modification, pursuant to 40 C.F.R. § 122.62(a)(3), for a longer time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria and meeting applicable anti-degradation requirements.

2. Winter Total Phosphorus Limit Compliance Schedule

   The Permittee shall achieve compliance with the total phosphorus limit of 0.2 mg/L (November 1 – March 31) within 12 months of the effective date of the permit. During the 12 month period, an interim limit of 1 mg/L is in effect.

3. Ambient Phosphorus Monitoring

   Beginning in April of the first odd numbered year that occurs at least six months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from April through October at a location in the receiving water upstream of the facility and analyze the samples for total phosphorus. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and State approval. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

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 electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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 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 Pretreatment Coordinator in EPA Region 1 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"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. 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

      This information shall be submitted to EPA WD 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"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

5. Submittal of Requests and Reports to EPA Water Division (WD)

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

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request discontinuation of Per- and polyfluoroalkyl substances (PFAS) sampling (see Part I.A.1, footnote 12), Fecal Coliform and/or Enterococcus sampling;

      (4) Request for reduction in testing frequency;

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

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

6. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) 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) Prior to 21 December 2020, written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs). Starting on 21 December 2020, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

(2) Collection System Operation and Maintenance Plan (from Co-permittee)

(3) Report on annual activities related to O&M Plan (from Co-permittee)

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

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
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 ECAD at 617-918-1510
and
MassDEP Emergency Response at 888-304-1133

I. STATE 401 CERTIFICATION CONDITIONS

1. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, beginning 180 days after the effective date of the 2022 Federal NPDES permit, the permittee shall commence monitoring of the influent, effluent, and sludge for PFAS compounds as detailed in the tables below. The permittee shall contact MassDEP (massdep.npdes@mass.gov) 90 days prior to starting

monitoring for guidance on the appropriate analytical method. The permittee shall use EPA's multi-lab validated method for wastewater once notified by EPA that the method is available. Notwithstanding any other provision of the 2022 Federal NPDES permit to the contrary, monitoring results shall be reported to MassDEP electronically at massdep.npdes@mass.gov, or as otherwise specified, within 30 days after they are received.

Influent and Effluent (Outfall 001)

Parameter	**Units**	**Measurement Frequency**	**Sample Type**
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly[3]	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	24-hour Composite

Sludge

Parameter	**Units**	**Measurement Frequency**	**Sample Type**
Perfluorohexanesulfonic acid (PFHxS)	ng/g	Quarterly	Grab/Composite[4]
Perfluoroheptanoic acid (PFHpA)	ng/g	Quarterly	Grab/Composite
Perfluorononanoic acid (PFNA)	ng/g	Quarterly	Grab/Composite
Perfluorooctanesulfonic acid (PFOS)	ng/g	Quarterly	Grab/Composite
Perfluorooctanoic acid (PFOA)	ng/g	Quarterly	Grab/Composite
Perfluorodecanoic acid (PFDA)	ng/g	Quarterly	Grab/Composite

2. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, beginning 1 year after the effective date of the 2022 Federal NPDES permit, the permittee shall commence annual

3 Quarters are defined as January to March, April to June, July to September, and October to December. Samples shall be taken during the same month each quarter and shall be taken 3 months apart (e.g., an example sampling schedule could be February, May, August, and November).
4 Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

PFAS monitoring of all Significant Industrial Users[5,6] discharging into the POTW. Monitoring shall be in accordance with the table below. The permittee shall contact MassDEP (massdep.npdes@mass.gov) 90 days prior to starting monitoring for guidance on the appropriate analytical method. The permittee shall use EPA's multi-lab validated method for wastewater once notified by EPA that the method is available. Notwithstanding any other provision of the 2022 Federal NPDES permit to the contrary, monitoring results shall be reported to MassDEP electronically at massdep.npdes@mass.gov, or as otherwise specified, within 30 days after they are received.

Parameter	**Units**	**Measurement Frequency**	**Sample Type**
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Annual	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Annual	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Annual	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Annual	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Annual	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Annual	24-hour Composite

5 Significant Industrial User (SIU) is defined at 40 CFR part 403: All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR chapter I, subpart N; **and** any other industrial user that: discharges an average of 25,000 GPD or more of process wastewater to the POTW, contributes a process wastestream that makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW, or designated as such by the POTW on the basis that the industrial users has a reasonable potential for adversely affecting the POTW's operation or for violating any Pretreatment Standards or requirement.
6 This requirement applies to all Significant Industrial Users and not just those within the sectors identified by EPA in the NPDES permit.

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 - CaCO3)

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 (ug/l)	Limitations

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

RESPONSE TO COMMENTS
NPDES PERMIT NO. MA0100412
WESTBOROUGH WASTEWATER TREATMENT FACILITY
WESTBOROUGH, MASSACHUSETTS

The U.S. Environmental Protection Agency's New England Region (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Westborough Wastewater Treatment Facility (WWTF) located in Westborough, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 et. seq.

In accordance with the provisions of 40 Code of Federal Regulations (CFR) § 124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # MA0100412 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From September 10, 2020 through November 9, 2020, EPA solicited public comments on the Draft Permit.

EPA received comments from:

- The Westborough Wastewater Treatment Plant Board, dated October 6, 2020
- The Town of Shrewsbury, dated November 9, 2020
- The Town of Hopkinton, dated November 9, 2020
- Organization for the Assabet, Sudbury, and Concord Rivers, dated October 9, 2020
- Massachusetts Water Works Association, dated October 9, 2020
- Massachusetts Coalition for Water Resources Stewardship, dated October 9, 2020

Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below, EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: http://www.epa.gov/region1/npdes/permits_listing_ma.html.

A copy of the Final Permit may be also obtained by writing or calling Betsy Davis, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-1), Boston, MA 02109-3912; Telephone: (617) 918-1576; Email davis.betsy@epa.gov.

Table of Contents

I. Summary of Changes to the Final Permit

1. The reporting frequency for total copper in Part I.A.1 has been changed to monthly. See Response 2.

2. The ammonia nitrogen average monthly limit of from April 1 through May 31 has been changed to 2.6 mg/L. The ammonia nitrogen average monthly limit of 1.0 mg/L, average weekly limit of 1.0 mg/L, and maximum daily limit of 1.5 mg/L apply June 1 through October 31. See Response 4.

3. The Final Permit includes a monthly average $CBOD_5$ limit of 25 mg/L (1,600 lb/day) and a weekly average $CBOD_5$ limit of 40 mg/L (2,560 lb/day), applicable from November 1 through March 31. See Response 8.

4. The provision in Part I.G.1 allowing an extension of the three-year aluminum compliance schedule if "Massachusetts adopts revised aluminum criteria" has been modified to indicate if "EPA has not yet approved the revised aluminum criteria." See Response 9.

5. The Final Permit includes a requirement to monitor and report phosphorus loading. See Response 38.

II. Responses to Comments

Comments are reproduced below as received; they have not been edited.

A. Comments from Michael Stanton, Chairman, Town of Westborough, Westborough Treatment Plant Board on October 6, 2020.

Comment 1

Page 3 of 23 - Rolling Average Effluent Flow
Under the current permit, effluent flow is calculated as an annual average limit which is reported as a rolling average. The Board reports the average for each month along with an annual average using the prior 12 months on a rolling basis.

The Draft Permit, in Footnote 5, while continuing to reference the limit as a rolling annual average, without explanation now requires that effluent flow be calculated as an arithmetic mean of the monthly average flow for the reporting month along with the month average flows for the prior 12 months. Page 18 of the Fact Sheet discusses effluent flow and notes that there have been no violations of the flow limit by the plant. Given the ongoing compliance with the effluent limit and the lack of any compelling reason to modify the reporting methodology, the Board requests that the current operating procedure be maintained whereby in lieu of a mean, the Board reports the average effluent flow.

Response 1

The flow monitoring and reporting requirement in the 2020 Draft Permit and the 2005 Permit are the same. Both require the flow limit be reported as a rolling annual average. The only change is that the wording of Footnote 5 in the Draft Permit is slightly different from Footnote 1 in the 2005 Permit.

Footnote 1 in the 2005 Permit states,

"The flow limit is an annual average limit, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months. The monthly average and maximum daily flows for each month shall also be reported."

Footnote 5 in the 2020 Draft Permit states,

"The limit is a rolling annual average, reported in million gallons per day (MGD), which 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. Also report monthly average and maximum daily flow in MGD."

The method of calculating an arithmetic mean and the annual average is the same. EPA notes that the commenter refers to calculating the rolling annual average flow limit as the "arithmetic mean of the monthly average flow along with the monthly average flow for

the prior 12 months". However as stated in Footnote 5, the annual average flow is calculated from the month that is being reported and the previous 11 months rather than the previous 12 months.

The arithmetic mean is a method of calculating the average values of the monthly average flows. The reporting requirement for effluent flow in the Final Permit remains unchanged from the Draft Permit.

Comment 2

Page 3 of 23 - Total Copper

The Draft Permit proposes an average monthly effluent limitation for Total Copper of 0.016 mg/L with a weekly monitoring requirement. In accordance with the Administrative Order issued by the EPA on September 15, 2006, the Board has maintained compliance with the effluent limitation for Total Copper of 0.020 mg/L, with measurements taken monthly. As noted on page 31 of Fact Sheet attached to the Draft Permit, the data provided by the Board demonstrated that there have been no violations of the 0.020 mg/L average monthly limit. Moreover, the reporting provided by the Board regarding Total Copper has demonstrated the ability of the plant to satisfy the effluent limitation of 0.016 mg/L. Given that, the Board requests that the measurement frequency be maintained monthly rather than imposing additional costs for weekly testing.

Response 2

The copper limits in both the 2005 Permit and the Draft Permit are based on meeting water-quality standards in the receiving water (i.e., water quality based effluent limits) in accordance with CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1). The average monthly and maximum daily copper limits of 16 µg/L are less stringent than the copper limit in the 2005 Permit (9 µg/L, 14 µg/L), and the Fact Sheet issued with the Draft Permit explains the reasoning for with less stringent copper limits[1].In 2006, EPA issued an Administrative Order to the Town as treatment at the Facility did not achieve the limits in the 2005 Permit. The interim copper limit of 20 µg/L and monitoring frequency in the Administrative Order were not intended to replace the water-quality based limits in the 2005 Permit. However, a review of the most recent DMR data for copper from January 2018 through October 2021 shows the average monthly and maximum daily copper limits are below 16 µg/L. Therefore, based on this comment EPA agrees that monthly monitoring is sufficient to demonstrate compliance with the new copper limits and has reduced the monitoring frequency in the Final Permit to once per month. The total copper effluent limits in the Final Permit remain unchanged from the limits in the Draft Permit.

Comment 3

Page 3 of 23 - Total Aluminum

The Draft Permit proposes a three year timeframe whereby the Board, as is required under the current permit, is only required to monitor its average monthly Total Aluminum concentration in accordance with the Compliance Schedule set forth in Part I.G.1.

[1] https://www.epa.gov/ma/public-notice-draft-permit-westborough-wastewater-treatment-facility-co-permittees-town

However, after three years the Draft Permit imposes an effluent limitation of 0.087 mg/L with the provision that the Board may seek a permit modification if either Massachusetts or EPA revises the aluminum criteria.

A change to monitoring only for the duration of the permit is warranted for several reasons. As stated on page 31 of the Fact Sheet, there are ongoing efforts by DEP to revise the Massachusetts aluminum criteria; it is expected that DEP's new aluminum criteria recommendations may be higher than current recommendations; and EPA reasonably expects its new criteria may also be higher. Given the high likelihood of a material change in the Total Aluminum criteria, imposing a criteria now for three years after the effective date of the permit is unnecessary and arbitrary.

As noted by the U.S. Geological Survey "aluminum discharge limits in National Pollutant Discharge Elimination System (NPDES) permits can be difficult to meet in Massachusetts due to natural instream elevated aluminum concentrations." The Board has been working cooperatively with DEP to develop a site specific Total Aluminum limit for the plant. That study involves collecting water quality data to demonstrate a process for calculating aluminum criteria based upon a site's water chemistry using the multiple linear regression model developed by the EPA To the extent that site specific criteria will be applied, it is counterproductive to impose a Total Aluminum limitation at this time.

Finally, in order to maintain the effluent limitation for Phosphorus, the plant uses Poly-Aluminum-Chloride ("PAC"). PAC not only allows the plant to meet its effluent limitation for Phosphorus, but it also aids the plant in satisfying the effluent limitation for Total Copper. However, the use of PAC also increases the levels of Total Aluminum.

The alternative to PAC is the use of iron salts. There are a number of negative consequences to the use of iron salts. Iron salts have minimal impact on Total Copper. In addition, iron salts are detrimental to the plant. Iron salts cause corrosion, increased wear and tear on filters, and significant staining on ultraviolet apparatus resulting in more frequent and expensive cleaning and maintenance.

For all the above reasons, the Board requests that the Total Aluminum effluent limitation in the permit be limited to reporting only for the duration of the permit.

Response 3

EPA recognizes the operational challenges the Facility faces in balancing both ongoing compliance with phosphorus and copper limits as well as with a newly established permit limit for aluminum. However, when a facility has shown that it has the reasonable potential to cause or contribute to an excursion above any effective State Water Quality Standards (WQS), it is EPA’s duty, pursuant to 40 CFR §122.44(d) to include an effluent limitation that ensures that the applicable WQS is achieved. EPA does not forestall an effluent limit, pending development, submission and approval of revised WQS since there is no way to predict the level at which any new criteria will be established, and when such criteria will become effective. The criteria development process often takes many years. The comment suggests that EPA forestall imposing a water quality-based effluent limit for aluminum based on the possible change in WQS for aluminum. This would not be allowable according to the regulations cited above, however EPA disagrees that the aluminum compliance schedule is “unnecessary and arbitrary” but rather is

imposed for the very reason presented in the comment, that is, to allow adequate time for anticipated changes to the WQS before the limit becomes effective. Once the Massachusetts WQS revisions are approved by EPA, the Permittee may request a permit modification or permit reissuance to reevaluate the aluminum limit. EPA has included the same three-year aluminum compliance schedule in revised Massachusetts Permits since 2019 including the NPDES Permits for facilities discharging to the Merrimack River and the Maynard and Hudson NPDES Permits that discharge further downstream in the Assabet River.

The aluminum limit is based on the current Massachusetts, EPA approved, aluminum chronic criterion, 87 µg/L. See *National Recommended Water Quality Criteria*, 2002 (EPA 822-R-02-047). The commenter refers to an ongoing study to develop site-specific aluminum criteria. After this study is completed (that includes MassDEP and EPA approval of the site-specific aluminum criteria), the site-specific criteria may be used in a reasonable potential analysis to determine the applicable aluminum limit necessary (if any) for the Westborough WWTF and these results can be incorporated into the Permit through a permit modification.

The aluminum limit and compliance schedule that were included in the Draft Permit remain the same as the Final Permit.

Comment 4

Page 4 of 23 - Ammonia Nitrogen

The Draft Permit changes the requirements for Ammonia Nitrogen in two respects: warm and cold weather seasons start and end dates have been modified as has the cold weather season effluent limitation. As with the current permit, the Draft Permit provides a different effluent limitation for Ammonia Nitrogen depending on the time of year. Under the current permit, the effluent limitation for Ammonia Nitrogen for the warm weather season of June 1 to October 31 is 1 mg/L. While the effluent limitation has stayed the same in the Draft Permit, the timeframe has been modified to begin on April 1.

As stated in the Fact Sheet, data submitted by the plant demonstrates there are no violations of the Ammonia Nitrogen limits with regard to the current permit. No explanation is given for revising the start date for the warm weather season from June 1 to April 1. Because of the uncertainties of spring weather in Massachusetts, the Board requests that the timeframes for the warm and cold weather seasons be kept in place. Indeed, the Fact Sheet references the cold weather season as November 1 through May 31. (Fact Sheet, p. 23). This is especially important because the Draft Permit has decreased the average monthly limit for the cold weather season from 8.0 mg/L to 5.1 mg/L.

Response 4

The Fact Sheet (p. 23-25) explains the process EPA used to evaluate the ammonia limits that were in the 2005 Permit to determine if more stringent limits were necessary to meet Water Quality Standards under current conditions. In that analysis, EPA noted that the cold weather season in the 2005 Permit was November 1 through May 31 but also noted that the cold weather period in the 2020 Draft Permit is November 1 through March 31. It was determined that a more stringent average monthly limit of 5.1 mg/L is necessary

during the cold weather season (November 1-March 31) to meet WQS. Given that the Fact Sheet did not explicitly state the reason for the change in season, EPA notes here that this change is to ensure that EPA's assumptions regarding ammonia criteria (which are based, in part, on water temperature) include a reasonable worst-case assumption during all months, including the months of April and May. The analysis in the 2020 Draft Permit assumes a worst-case (*i.e.*, highest possible) water temperature in the warm weather months of 25°C whereas the cold weather assumption is 5°C. EPA has determined that for MA discharges, water temperatures as early as April and May can begin to increase well above 5°C such that including these months as "cold weather" months would not ensure protection of water quality standards under higher temperatures.

The monthly average ammonia limit of 1.0 mg/L in the 2005 Permit from June 1 through October 31 was based on the 1989 MA Department of Environmental Quality Engineering (DEQE) Wasteload Allocation (WLA), as described on page 16 of the Fact Sheet, and the monthly average ammonia limit in the 2005 Permit from November 1 through May 31 was 8.0 mg/L. While it is appropriate for the warm weather limit based on the WLA to be carried forward for the months of June through October, EPA has determined that it was not appropriate to apply the same numeric limit based on the WLA in April and May given that the WLA does not apply in April and May. Rather, EPA should have calculated a site-specific criteria and limit for April and May using the temperature assumption (described in the paragraph above) that would ensure protection of applicable WQS.

In reevaluating the effluent limit, EPA determined that the warm weather ammonia nitrogen water quality chronic criterion is 2.6 mg/L, based on a warm weather temperature of 25°C and a pH of 7.3 S.U. (the pH is the same value used in the development of the Draft Permit and is based on the median ambient pH presented in Appendix A of the Fact Sheet). Given that there is not any available dilution for this discharge under critical conditions, the effluent limit is set at the same value as the applicable WQS to ensure the protection of the WQS.

Therefore, this comment results in a change in the Final Permit to establish a monthly average ammonia nitrogen limit of 2.6 mg/L from April 1 through May 31 (changed from 1.0 mg/L in the 2020 Draft Permit). This comment does not result in any change to the average monthly and average weekly limits of 1.0 mg/L from June 1 through October 31 (the same as both the 2005 Permit and the 2020 Draft Permit) or to the monthly average limit of 5.1 mg/L from November 1 through March 31 (the same as in the 2020 Draft Permit).

The monthly average ammonia nitrogen levels reported in the DMR for April and May over the past three years are less than the revised limit as shown below and the data indicates the Facility should not have any trouble consistently achieving the revised limit of 2.6 mg/L.

	Mon. Avg.	Weekly Average
April 2019	0.16 mg/L	0.19 mg/L
May 2019	0.19 mg/L	0.24 mg/L
April 2020	0.18 mg/L	0.22 mg/L
May 2020	0.15 mg/L	0.18 mg/L
April 2021	0.17 mg/L	0.2 mg/L
May 2021	0.13 mg/L	0.16 mg/L

Comment 5

Page 5 of 23 - Whole Effluent Toxicity
Clarification is needed regarding acute and chronic toxicity testing. Footnote 13 of the Draft Permit first states that the testing will be done "in accordance with the test procedures and protocols specified in **Attachment A and B** of this permit." Attachment A states acute toxicity testing shall be done with respect to both the Daphnid and the Fathead Minnow. However, Footnote 13 then goes on to state that the "Permittee shall test the daphnid, *Ceriodaphnia dubia*."

Currently, toxicity testing has only been done with regarding to the Daphnid. Page 33 of the Fact Sheet acknowledges that, under the current permit, toxicity testing has been done using only the Daphnid as a test species. The Fact Sheet acknowledges that the plant has met these limits with only one exception. The Fact Sheet also notes that EPA eliminated testing for the Fathead Minnow based upon WET testing results because the Daphnid was found to be the more sensitive species.

To the extent the Draft Permit is intended to require the testing of both the Daphnid and the Fathead Minnow, the Board requests that it be modified to continue under current permit conditions for testing only the Daphnid because, as acknowledged in the Fact Sheet, the Daphnid is the more sensitive of the species. Additional testing will not provide any more useful data and only result in increased operating costs for the plant.

Response 5

The WET test procedures that were included as Attachments A and B to the Draft Permit serve as general protocols that apply to more than one test organism species. The permittee is required to conduct WET tests in accordance with the procedures in these attachments, any permit-specific requirement, such as the requirement in Footnote 13 to Part I.A.1. of the Draft and Final Permit to use the daphnid (*Ceriodaphnia dubia*) as the test organism, prevails. Therefore, the Permittee shall conduct quarterly WET tests using Ceriodaphnia *dubia*, only. (See Footnote 13 of the Final Permit). This comment does not result in any change to the Final Permit.

Comment 6

Page 16 of 23 - Industrial Users and Pretreatment Program
The Fact Sheet addresses the requirement that upon reissuance of the permit the Board is obligated to modify its pretreatment program including, but not limited to, revising local sewer use ordinances and regulations to be consistent with federal regulations.

The Fact Sheet then goes on to state that the Board is required to submit to EPA in writing, within 180 days of the effective date of the permit, proposed changes to the pretreatment program to ensure conformity with current federal pretreatment regulations.

Paragraph 1 of the Industrial Users and Pretreatment Program section of the Draft Permit requires a written technical evaluation be submitted to EPA within 90 days of the effective date of the permit addressing the need to revise local limits. However, Paragraph 6 of that section requires the Board to provide EPA a written report within 180 days of the permit's effective date regarding proposed changes to the pretreatment program addressing, at a minimum, revised sewer use ordinances.

Given the apparent intent in the Fact Sheet to provide 180 days to submit these reports, and the overlap in the requirements of the reports as described in Paragraphs 1 and 6 of the Industrial Users and Pretreatment Program section, the Board requests that, in lieu of two reports, the permit be revised to require that only one report be filed within 180 days of the effective date of the permit that addresses local limits and the other issues referenced in the Industrial Users and Pretreatment Program section. To the extent that two reports must be submitted, the Board requests that the deadline for both reports be changed to 180 days after the effective date of the permit.

Furthermore, as the EPA is aware, the Board has already partially satisfied the requirements of this section. On May 8, 2020 the Board submitted for review by EPA proposed Rules & Regulations and Enforcement Response Program. The Board understands these are still under review by the agency.

Response 6

Part I.E. of the Draft Permit identifies two separate requirements related to its Industrial Pretreatment Program. The first requirement in Part I.E.1, which is due within 90 days of the effective date of the Final Permit, is a technical evaluation as to where there is a need to revise local limits from the existing local limits. The Permittee is required to complete and submit **Attachment C (**Reassessment of Technically Based Industrial Discharge Limits) of the Final Permit as part of the evaluation to satisfy this permit requirement. The second requirement in Part I.E.6, which is due within 180 days of the Final Permit, is for modification of its Pretreatment Program, only if the results of the technical evaluation identify a need to do so.

The requirement of Part I.E.6 apply to modifications of the Permittee’s pretreatment program including: (1) Enforcement Response Plan; (2) revised sewer use ordinances; and (3) slug control evaluations. These modifications, if necessary, shall be submitted to EPA, in writing, within 180 days of the Permit’s effective date. Note that the last sentence of Part I.E.6 states, “This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.”

Please note these are general requirements for permits that are required, if necessary. EPA approved the Town’s Rules and Regulations on April 11, 2019. EPA did receive a revised Enforcement Response Plan and Sewer Use Ordinance on March 31, 2020. Given that, the Town may not have to modify items (1) and (2) above, since as previously mentioned, these modifications are only required, if necessary.

The due dates for the reports required by Part I.E.1. and I.E.6 remain unchanged in the Final Permit. These requirements and due dates are standard to all NPDES permit issued to Permittees in Massachusetts and New Hampshire that are required to implement an Industrial Pretreatment Program.

Comment 7

With regard to the Draft Certification, the Board has the following comment:

Condition 6 - PFAS Testing

Condition 6 of the Draft Certification requires the Board to begin testing the influent, effluent, and sludge for PFAS compounds, as detailed in the tables contained in Condition 6, beginning 180 days after the effective date of the permit, with measurements being done quarterly. Condition 6 also requires the Board to commence testing for PFAS compounds for all Significant Industrial Users discharging into the plant beginning one year after the effective date of the permit. This monitoring and reporting must be done using EPA' s multi-lab validated method for wastewater once it is made available to the public.

In contrast, the Draft Permit does not require testing or reporting for PFAS compounds until six months after EPA's multi-lab validated method for wastewater is made available to the public. The Board requests that the testing and reporting required in the Draft Certification be modified so that it is identical to the requirement in the Draft Permit.

Delaying the testing and reporting until such time as the EPA has implemented the multi-lab validated method for wastewater will result in more consistent and reliable reporting to both EPA and DEP, avoid unnecessary testing costs, and will not create any negative impact upon public health or safety.

Response 7

The Draft and Final Permits as well as any relevant documents that are issued by EPA are separate from those issued by the State. To the extent that this comment is referring to the Draft State Certification, MassDEP indicated in their Final Certification that they received comments on the Draft State Certification from the Westborough Treatment Plant Board during the public comment period, and MassDEP did not make any changes to the State Certification and will respond to comments in their Response to Comments document. This document will become available when the State Surface Water Discharge Permit is issued. EPA received a letter from MassDEP dated December 7, 2020, regarding the Final Massachusetts Clean Water Act Section 401 Certification for the Westborough Wastewater Treatment Plant, that has PFAS quarterly monitoring requirements for influent, effluent, and sludge beginning 180 days after the effective date of the NPDES permit.

As described in the Fact Sheet on page 7, the State must include conditions more stringent than those contained in the Draft Permit where it believes they are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307 or the applicable requirements of State law. EPA includes properly supported State certification

conditions in the NPDES permit. However, 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 EPA's permit appeal procedures of 40 CFR Part 124.

This comment does not result in any change to the Final Permit.

B. Comments from Jeffery W. Howland, P.E., Director of Public Works, Town of Shrewsbury on November 9, 2020.

Comment 8

BOD Limits:
The draft permit includes a change in the parameter for the winter season BOD limits. The prior permit included this limit as $CBOD_5$, while the new draft presents this limit as BOD_5. This is an effective reduction in the limit included in the permit. The fact sheet provides no basis for a limit reduction, and presents the draft limit as the same, noting that "... no new WLAs have been established and there have been no changes to the secondary treatment standards". To be consistent, the new permit limit should be issued as a $CBOD_5$ limit.

Response 8

EPA acknowledges an error in the Draft Permit of changing the $CBOD_5$ limits that were in the 2005 Permit to BOD_5 limits. This was an error that has been corrected in the Final Permit. The Final Permit includes a monthly average $CBOD_5$ limit of 25 mg/L (1,600 lb/day) and a weekly average $CBOD_5$ limit of 40 mg/L (2,560 mg/L), applicable from November 1 through March 31. These limits are in accordance with the secondary treatment standards set forth at 40 CFR § 133.102(a)(4). As the 85% removal requirement, also applies to both BOD_5 and $CBOD_5$, EPA has also revised the permit to clarify that the 85% BOD_5 removal requirement applies during the warm weather season and the 85% $CBOD_5$ removal requirement applies in the cold weather season.

Comment 9

Aluminum Limits:
The draft permit includes a new limit for Total Aluminum as 87 µg/L. This limit is based on an assumption of zero stream flow in the receiving water upstream of the facility. EPA is aware that Massachusetts completed work on new surface water quality standards (SWQS) for aluminum, and these new standards were issued by Massachusetts DEP as draft regulations for public comment in 2019. The new proposed standard for aluminum in the Assabet River is significantly higher than the outdated standards from EPA's 1988 guidance. Recognizing the impending regulations, EPA action to include an outdated standard in this permit is unreasonable, and the limit should be removed.

The Town recognizes the provision for continued monitoring of aluminum (Report) as an interim limit but notes that recent events (notably COVID19 pandemic and a focus on other water quality issues) have diverted Massachusetts DEP's effort away from finalizing the new SWQS for aluminum. As such, the three-year compliance schedule for aluminum, as included in the draft permit, is insufficient to support the inclusion of a new total aluminum limit. Clearly, the appropriate approach for this permit cycle should be to maintain the Report requirement for

aluminum from the prior permit and recheck the reasonable potential calculation during the next future permit issuance (c. 2025), at which time the new SWQS and their relevance will be established.

Response 9

See Response 3.

EPA disagrees with this comment that three years is insufficient time to allow EPA to include any approved revision before the aluminum limit becomes effective. The WQS revision has been promulgated by Massachusetts and EPA is currently reviewing it. EPA expects to act on the revised WQS with sufficient time to incorporate any changes (if appropriate) through a permit modification well within the three-year period.

Given that the revised WQS have already been promulgated by Massachusetts, the following sentence in the aluminum compliance schedule provision in Part I.G.1 of the Final Permit has been revised as follows:

> If during the three-year period after the effective date of the permit, EPA has not yet approved the Massachusetts aluminum criteria, then the permittee may request a permit modification, pursuant to 40 C.F.R. § 122.62(a)(3), for a further delay of the effective date of the final aluminum effluent limit.

The remainder of the compliance schedule provision has not been changed and still allows the Permittee to request a permit modification within three years of the effective date of the permit once the WQS are approved by EPA.

Comment 10

Phosphorus Limits:
The draft permit includes a reduction in the winter season phosphorus limit to 0.2 mg/l. While this draft limit represents a significant change from the prior limit, the Town appreciates the relevance of this change from prior discussions with EPA. The allowance for the interim limit in the draft permit is critical to allow the plant operators time to effectively meet the new limit. We do note that this change will result in increased costs and require additional staff attention, and as such will limit the ability to support other proposed changes in the permit.

Response 10

EPA acknowledges the Town's comment to the relevance of lowering the Facility's cold weather phosphorus limit (subject to a 12-month compliance schedule describe in Part I.G.2 of the permit) and recognizes that this change may result in increased costs and require additional staff attention. However, the Permittee is obligated to comply with all the conditions and limits in the Final Permit.

Comment 11

Ammonia Limit:
The draft permit includes a reduction in the winter season ammonia nitrogen limit to 5.1 mg/l, and also extends the 'summer' season (which includes a limit of 1 mg/l) period to include from

April through October (from the previous June through October period). These draft changes represent a significant change from the prior limit, and as such require discussion with the plant operators to determine the ability to meet the limits and the impacts of such compliance. EPA should review the limits and impacts with the operators, and review the basis of the change, before proceeding with the change. As a minimum, the initial permit should maintain the original season limits (June through October) until any new limits are established at the facility.

Response 11

See Response 4.

In response to this comment, EPA reevaluated the monthly average ammonia effluent concentrations reported during the review period (presented in Appendix A of the Fact Sheet) and notes that the maximum effluent value reported for any month of -the review period was 0.3 mg/L. Based on this data and the fact that the most stringent monthly average ammonia limit in the Final Permit is 1.0 mg/L, EPA does not agree with the comment that the facility will have any trouble complying with the ammonia limits in the Final Permit.

Comment 12

Nitrogen Monitoring:
The draft permit adds requirements for monitoring (Report) of nitrogen (TKN, inorganic nitrogen/NO_x, and total nitrogen), on a weekly/monthly basis. These requirements will add significantly to the costs for laboratory testing and seem unwarranted. The Assabet River drains to the Concord River, which ultimately discharges to the Merrimack River, and then directly to the Atlantic Ocean. Given the lack of any downstream embayment or estuaries, downstream nitrogen impacts are unlikely. Therefore, it does not appear that these nitrogen monitoring requirements are necessary. The proposed weekly frequency of the testing in the summer is also an added burden for the community. The nitrogen monitoring requirements should be removed from the permit.

Response 12

Total nitrogen monitoring has been included in the Final Permit to continue gathering information on point source loadings of this pollutant to the Merrimack River Watershed to effectively characterize the nitrogen loading to the estuarine waters at the mouth of the Merrimack River.

As discussed in the Fact Sheet (see Section 5.1.10.1), the Merrimack River Watershed, which includes the Assabet River, is a large and densely populated watershed which receives discharges from 40 POTWs in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by the POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion.

Nitrogen data collected by CDM Smith in 2014 and 2016[2] and by EPA in 2017[3], 2018[4], and 2019[5] in the estuarine portions of the Merrimack River indicate elevated levels of total nitrogen and chlorophyll 'a'. EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of the results are outside the range of target criteria developed for Great Bay in NH[6] and estuaries in southeastern MA[7].

While at this time the Merrimack River is not well characterized for nitrogen impacts (See the National Estuarine Eutrophication Assessment[8]), EPA notes that the estuaries immediately north and south of the Merrimack River Estuary, Hampton Harbor Estuary and Plum Island Sound, have both been identified as "symptoms worsening since 1999."[9] The eutrophic condition of Plum Island Sound estuary and the Merrimack River estuary are influenced by any level of nitrogen input[10]. Additionally, in 2004[11], Plum Island Sound was the only estuary in the North Atlantic region classified as "moderate high eutrophic conditions." The report is dated 1999, however EPA is not aware of any comprehensive assessment that has been conducted and made available since its publication.

The results of the monitoring required in the Draft Permit are necessary for EPA to make as informed a decision as possible, on this critically important issue, for EPA to select an appropriate permit regime (i.e., one that will be effective on a watershed-wide basis should EPA find permit limits are necessary in subsequent permits).

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[2] CDM Smith/US Army Corps of Engineers New England District, *Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017*, Appendix C.
[3] U.S.EPA Region 1, 2018, "Lower Merrimack Monitoring Report Project, Summer/Fall 2017.", EMT-2017-Merr, March 2018.
[4] U.S.EPA Region 1, 2019, "Lower Merrimack Monitoring Report Project, Summer/Fall 2018.", EMT-2018-Merr, January 2019.
[5] U.S.EPA Region 1, 2020, "Lower Merrimack Monitoring Report Project, Summer/Fall 2019.", EMT-2019-Merr, January 2020.
[6] NHDES, 2009, "Numeric Nutrient Criteria for the Great Bay Estuary" https://www.des.nh.gov/organization/divisions/water/wmb/wqs/documents/20090610_estuary_criteria.pdf
[7] MassDEP, 2003, "Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report" https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Verity%20View/DE93FF445FFADF1285257527005AD4A9/$File/Memorandum%20in%20Opposition%20...89.pdf
[8] Bricker, S.B., C.G. Clement, D.E. Pirhalla, S.P. Orlando, and D.R.G. Farrow. 1999. National Estuarine Eutrophication Assessment: Effects of Nutrient Enrichment in the Nation's Estuaries. NOAA, National Ocean Service, Special Projects Office and the National Centers for Coastal Ocean Science. Silver Spring, MD: 71 pp.
[9] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. page 42.
[10] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. A20 and A24.
[11] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. 328 pp.

Comment 13

Ambient Characteristic Sampling:
The new permit provides for ambient characteristic sampling for a range of parameters. Many of these are to be done on a quarterly basis, in concert with Whole Effluent Toxicity (WET) testing, though phosphorus monitoring is to be done monthly in alternating years. Very little specific basis is presented to support the need for this additional testing requirement. Based on historic performance, there is limited likelihood that this facility will fail the WET testing, which presents further questions as to the value of the required testing. Further, the specifics of the ambient phosphorus testing requirements, which are constrained by rainfall, present additional complexity which will present a distraction for operator's time which is needed at the facility. The Town requests that these ambient testing requirements be removed from the permit.

Response 13

The ambient monitoring parameters in Part I.A.1 of the Draft Permit fall into two categories. The first nine (from hardness through total organic carbon) are required ambient monitoring as part of each WET test and these results are required to be reported in the monthly Discharge Monitoring Report (DMR) from the WET test. Dissolved organic carbon (DOC), pH, temperature and total phosphorus monitoring are related to better characterizing the receiving water. The ambient data will be used in the next permit reissuance.

EPA notes that the Facility had already been conducting ambient monitoring for ammonia, hardness, aluminum, cadmium, copper, lead, nickel, and zinc and was reporting the data with the WET test results included in the reports attached to monthly DMRs. That data was extracted from the WET reports and summarized in Appendix A to the Fact Sheet. For those parameters, the change is only that the ambient data be submitted electronically into EPA's electronic data system (NetDMR). This comment does not result in any change to the Final Permit and the ambient monitoring requirements will remain in the Final Permit.

As discussed on page 33 of the Fact Sheet, the requirement for ambient dissolved organic carbon (DOC), pH and hardness monitoring are related to the plan for Massachusetts to finalize new, DOC, pH and hardness dependent aluminum criteria based on EPA's 2018 recommendations[12,13]. MassDEP's proposed criteria revisions were issued for public notice in 2019 and amendments to 314 CMR 4.00 were promulgated on November 12, 2021, and corrections to the amendments were published and effective on December 10, 2021. The amended regulation will become federally enforceable once reviewed and approved by EPA, which is expected in the coming months. In anticipation of these new aluminum criteria, the Draft Permit proposed testing for DOC and in situ pH concurrently, for the sake of convenience, with ambient sampling related to WET tests.

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[12] Massachusetts Department of Environmental Protection. *Proposed Revisions to 314 CMR 4.00: Massachusetts Surface Water Quality Standards Regulation, Aluminum Freshwater Criteria Update*. Boston, MA. https://www.mass.gov/files/documents/2019/10/04/FactSheet_MassDEP_314CMR4_Aluminum.pdf

[13] U.S. Environmental Protection Agency. *Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018,* EPA-822-R-18-001, December 2018.

The in situ pH and temperature measurements will allow EPA to better characterize the receiving water with respect to the ammonia criteria which are dependent on pH and temperature as described on page 24 of the Fact Sheet.

Finally, the ambient total phosphorus data will ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent limit in the next permitting cycle, as described in page 29 of the Fact Sheet. EPA recognizes that sampling requirements for ambient total phosphorus are specific; however, the requirements are necessary for the collection of high-quality data that will accurately characterize the ambient water quality that may be the basis of future permitting decisions. EPA notes for the commenter that the sampling for total phosphorus is only required on odd numbered years and for a six-month period during those years

There is no relation between any of these final four ambient monitoring requirements and compliance with WET limits.

In summary, the ambient sampling requirements serve at least four purposes:

- Characterizing upstream water quality for whole effluent toxicity testing;
- Characterizing the receiving water with respect to DOC, pH and hardness to develop a site-specific aluminum criteria in the future under the revised MA WQS;
- Characterizing upstream ammonia, in situ pH and in situ temperature to support evaluation of ammonia effluent limits in the next permit cycle since ammonia criteria are pH and temperature dependent;
- Characterizing upstream metals and hardness concentrations for evaluation of effluent limits for other metals for which criteria are hardness-dependent in the next permit cycle;
- Characterizing upstream total phosphorus for evaluation of phosphorus limits in the next permit cycle.

In addition, EPA may request monitoring data, pursuant to CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
>
> (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the

Administrator shall prescribe), and (v) provide such other information as he may reasonably require;".

EPA acknowledges the challenges in collecting ambient phosphorus samples required in renewed Permit. However, EPA finds that collecting this data will be needed in order to develop effluent limits in future permits.

Comment 14

Monitoring for PFAS Compounds:
The draft permit includes requirements for sampling and reporting on per- and polyfluoroalkyl substances (PFAS), including required testing of influent wastewater, treated effluent discharge, and sludge from the WWTF. These new permit requirements include the six PFAS compounds identified in the Massachusetts Drinking Water Standards (PFHxS, PFHpA, PFNA, PFOS, PFOA and PFDA). In addition, the permit includes provisions for annual testing of local industrial dischargers for PFAS compounds under the Industrial Pretreatment Program (IPP) requirements. As noted in the fact sheet, an approved test for wastewater PFAS testing has yet to be developed, and the requirements for these are set to only begin following the publishing of accepted test methods for wastewater and biosolids (sludge). As such, it appears to be established that these permit requirements are pre-mature and should be held until further information is available.

The Town recognizes the concerns related to these PFAS compounds, and shares EPA's and DEP's interest in knowing more about these issues. However, PFAS compounds are already known to be present in our environment, in humans and in industrial products and consumer goods. As of today, regulations have not been implemented at the Federal or State level to eliminate these compounds of concern from consumer products. As such, it is clearly pre-mature to set the groundwork for regulating PFAS in wastewater discharges when regulations have yet to address consumer goods (including food products).

The impacts of the required PFAS monitoring requirement will be significant for all WWTFs One major concern is the possible impact on sludge disposal. Once PFAS is found to be in wastewater sludge, the ability to properly dispose of sludge from not only this WWTF, but all Massachusetts WWTFs may be severely compromised. This issue will be exacerbated because of the understanding of concern for PFAS compounds, but the lack of defined regulations guiding safe disposal of affected solids. The number of facilities that can effectively dispose of PFAS compounds is severely limited and will result in a significant cost increase for sludge disposal for all facilities, or worse result in eliminating options for safe disposal of sludge. If facilities are not able to dispose of sludge in a safe and timely manner, the environmental (and potential public health) impacts of stockpiling sludge on-site will be significant.

The Town understands that testing of industrial contributions that may contribute PFAS compounds to the waste stream may be needed eventually. Further, the Town supports (and urges) the need to provide for legislation to remove these components from industrial and commercial products as the primary method of reducing the presence of these compounds in our environment.

We therefore request that the PFAS monitoring requirement be removed from the NPDES permit at this time. At such time as the most important consumer product PFAS prohibition provisions are in place, a more reasonable approach to addressing the presence of PFAS compounds in wastewater may be appropriate.

Response 14

As the commenter suggests, "PFAS compounds are already known to be present in our environment, in humans and in industrial products and consumer goods." What is not known, however, is the concentration of these compounds in waterbodies, especially the portion coming from wastewater treatment facilities. EPA acknowledges that much work still needs to be done beyond the scope of this permit related to studying the impact to the environment, the impact to human health, and addressing source control of PFAS compounds and PFAS in sludge. The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this Facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis. The expectation underlying this requirement is that by the time the permit is reissued in the next permit cycle, many of the questions raised by the commenter will have been answered through the efforts of EPA, MassDEP and others.

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. See, e.g., CWA § 308, which allows EPA to require a point source owner or operator to produce records related to developing or assisting in the development of any effluent limit or standard of performance. NPDES regulations at §§ 122.41(j)(4) and 122.44(i)] require that, when available, permittees use test procedures specified in Part 136 Generally, 40 CFR Part 136 describes test procedures to be used for NPDES purposes. Incorporating a testing method into 40 CFR Part 136 is not required in order for it to be applied into a permit, however[14].

The monitoring requirements for PFAS in the Final Permit do not go into effect until six months following the time EPA's multi-lab validated method for wastewater or sludge is made available to the public.[15] This time frame will give treatment plants time to secure any necessary contracts for PFAS monitoring.

Additionally, the lack of PFAS regulations in industries such as consumer goods does not preclude EPA's ability to require monitoring for such substances, pursuant to CWA § 308(a). Apart from the lack of legal authority requiring that EPA delay such regulations, proactively monitoring for the waste products associated with any consumer good in the environment will better inform public authorities as to how to manage consumer goods, and the waste therefrom, in the future and may aid other agencies in the promulgation of their own regulations.

[14] EPA NPDES Permit Writer's Manual, Section 8.3, September 2010, available at https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_08.pdf
[15] EPA NPDES Permit Writer's Manual, Section 8.3, September 2010, available at https://www.epa.gov/sites/production/files/2015-09/documents/pwm_chapt_08.pdf

EPA acknowledges the Town's concerns about PFAS and sludge disposal. EPA has developed an action plan and an interim strategy for PFAS[16,17,18]. A PDF of a presentation entitled, "PFAS Treatment in Biosolids – State of the Science"[19] is available on EPA's website that presents research on PFAS in biosolids.

The 2020 PFAS Action Plan Update also says the following:

> "The agency also has numerous PFAS treatment and disposal research projects underway, including on high temperature incineration and other methods. The agency is collaborating with other federal partners, including the Department of Defense, on efforts to increase the agency's understanding and availability of treatment technologies for PFAS, including analytical methods. Under the [National Defense Authorization Act] NDAA for Fiscal Year 2020, EPA will work to publish interim guidance on the destruction and disposal of PFAS within one year and publish revisions every three years after that[20]."

For biosolids, see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B), which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

The comment that sludge disposal costs may increase or that the ability to dispose of sludge may be compromised based on PFAS monitoring is speculative. The comment seems to suggest that as long as PFAS is not demonstrated to be in sludge then the Permittee can continue to dispose of the sludge as if it does not contain PFAS regardless of any potential impact to the environment in order to avoid potential risks associated with stockpiling sludge on-site. EPA agrees that stockpiling sludge on-site is not appropriate but notes that simply ignoring the likely presence of PFAS contamination in sludge is also not appropriate. Rather, EPA confirms that PFAS monitoring is necessary to better understand the level of PFAS in sludge and that this data should be used to inform future decisions regarding appropriate sludge disposal practices.

Finally, the Town is encouraged to use its pretreatment program and the local limits and to encourage industrial contributors to remove PFAS and its related pollutants to the best of their ability before such waste streams reach the Facility. Though source mitigation of

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[16]EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan. https://www.epa.gov/pfas/epas-pfas-action-plan
[17]EPA PFAS Action Plan: Program Update. https://www.epa.gov/pfas/pfas-action-plan-program-update-february-2020
[18] *Recommendations from the PFAS NPDES Regional Coordinators Committee Interim Strategy for Per- and Polyfluoroalkyl Substances in Federally Issued National Pollutant Discharge Elimination System Permits.* https://www.epa.gov/sites/production/files/2020-11/documents/pfas_npdes_interim_strategy_november_2020_signed.pdf
[19] PFAS Treatment in Biosolids-State of the Science. https://www.epa.gov/research-states/pfas-treatment-biosolids-state-science
[20] U.S. Environmental Protection Agency. *EPA PFAS Action Plan: Program Update*. EPA PUBLICATION NUMBER: 100K20002. Washington, DC. https://www.epa.gov/sites/production/files/2020-01/documents/pfas_action_plan_feb2020.pdf

PFAS is encouraged, it does not preclude PFAS monitoring requirements in NPDES permits.

Therefore, the monitoring requirements will remain in the Final Permit.

Comment 15

Unauthorized Discharges:
The draft permit includes provisions for public notification of sanitary sewer overflows (SSOs). This requirement appears redundant to the Massachusetts DEP requirements for SSO notification, and as such is not necessary. In addition, the December 2020 date to begin this process will clearly fall before the effective date of the final permit to be issued. We suggest this clause be eliminated.

Response 15

The intent of Part B.2, Unauthorized Discharges, is to provide the public with timely notification of an unauthorized discharge, such as a sanitary sewer overflow (SSO), which may pose health risks to anyone recreating on or near a receiving water where untreated wastewater may be present, so that appropriate precautions can be taken to minimize exposure risk. Such a requirement is consistent with the language in 40 CFR § 122.41(d), ("*Duty to mitigate")*, which states, "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." This requirement is also explicitly enumerated in Part II – Standard Conditions of the Draft Permit and was also in the 2005 Permit.

The fact that the State also has requirements concerning unauthorized discharges points to the seriousness of the problem; it does not obviate the need for federally enforceable requirements. EPA does not see any drawback from comprehensively regulating these unauthorized discharges at both the state and federal level given their potential impacts on water quality and human health. State regulations, while welcome, are not subject to EPA enforcement and are not a substitute for federal permit requirements.

The Permittee and Co-permittees should be aware the Commonwealth of Massachusetts passed an Act on January 12, 2021 that requires Permittees and Co-permittees to issue a public advisory when there is a discharge of untreated or partially treated sewage, industrial waste or other effluent, including combined sewer overflows, from the Permittee's outfall into Massachusetts waters. The Massachusetts Department of Environmental Protection is promulgating regulations to carry out the purpose of the Act for issuance no later than 1 year after the passage. The regulations will take effect within 18 months of the passage of the Act (on July 6, 2022). The Act can be found at: https://malegislature.gov/Bills/191/H4921.

Given that the date has already passed, EPA has removed the phrase "Starting December 21, 2020," from the Final Permit; otherwise, Part I.B of the Final Permit remains unchanged from the Draft Permit.

Comment 16

Operation and Maintenance of the Sewer System:
The draft permit includes new provisions related to the operation and maintenance of the sewer system, which in this case are now directly applicable to the systems of the co-permittees. The Town has a current system in place to operate and maintain, and on occasion improve its wastewater collection system. These provisions are governed sufficiently by Massachusetts regulations and good practice, which have historically proven sufficient to meet the public interests. In fact, many of the required elements are already part of the necessary compliance with 314 CMR 12.00 (Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers), making the permit condition redundant. Additional regulation of the system operations is not needed within the NPDES permit. We request that these redundant provisions be removed from the final permit.

Response 16

Although Massachusetts also governs wastewater collection systems on the state level, EPA has an independent obligation to require the appropriate operation and maintenance of the collection system in accordance with 40 CFR § 122.41(e), 40 CFR § 122.41(d), and in Part II. Standard Conditions. The regulations at 40 CFR § 122.41(e) require that wastewater treatment systems and related facilities must be properly operated and maintained to achieve compliance with permit conditions and 40 CFR § 122.41(d) imposes a "*Duty to mitigate*" that requires all reasonable steps be taken to minimize or prevent any discharge in violation of the permit. The general requirements for proper operation and maintenance are provided in Part II. Standard Conditions of Permit.

Similar to Response 15 concerning unauthorized discharges, although the State also has regulations concerning municipal collection systems, it does not obviate the need for federally enforceable requirements applicable to these portions of the POTW. The Massachusetts regulations are not conterminous with the requirements imposed under the federal permit. EPA does not see any drawback from comprehensively regulating these important components of the POTW at both the state and federal level given their potential impacts on water quality and human health. State regulations, while welcome, are not subject to EPA enforcement and are not a substitute for federal permit requirements.

Any relevant work and information relative to operation and maintenance of the collection system (i.e., plan, staffing information, ongoing operation and maintenance programs, etc.) that has already been established by the Town (for example, in satisfying state requirements), may be used to develop the Collection System Operation and Maintenance Plan (O&M) and to satisfy the requirements in Part I.C. of the permit.

This comment does not result in any change to the Final Permit.

Comment 17

Collection System Map:

The draft permit is very prescriptive on mapping of the collection system. The Town maintains a map of its collection system and will make updates to the map from time to time to support system operations and improvements. The specific permit language identifies mapping details that may not be fully available and which is not critical for a functional system map. Flexibility in map creation and details should be allowed for in the creation of mapping tools. A separate permit requirement for this item is not needed, and the details should be removed from this permit.

Response 17

EPA has broad authority under the CWA and regulations to prescribe municipal data collection and reporting requirements. See CWA § 308(a)(A), 33 U.S.C. § 1318(a)(A) (specifying that permittees must provide records, reports, and other information EPA reasonably requires); CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (requiring permittees to provide data and other information EPA deems appropriate); 40 C.F.R. § 122.41(h) (permittees shall furnish "any information" needed to determine permit compliance); 40 CFR § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); see also, e.g., In re City of Moscow, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has "broad authority" to impose information-gathering requirements on permittees); In re Town of Ashland Wastewater Treatment Facility, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers "broad authority" on permit issuers to require monitoring and information from permittees). The mapping, O&M planning, and annual reporting requirements readily fall within the bounds of these broad provisions.

Part I.C.4. of the Final Permit identifies items required on the collection system map including sanitary sewers, combined sewers, outfalls, pump stations, force mains, wastewater treatment facilities, and other major appurtenances such as inverted siphons and air release valves are all critical components of any collection system for its operation that should be easily referenced on the map. Failure to identify such items would also compromise its *duty to mitigate*, in violation of 40 CFR § 122.41(d), because addressing areas of concern in the collection system would be rendered difficult without properly identifying its critical components prior to an incident occurring.

This comment does not result in any change to the Final Permit.

Comment 18

<u>General Comments on the Permit Process:</u>
The Town of Shrewsbury notes that the permit process has included no outreach to the permittee communities prior to issuance of the draft permit. The NPDES program previously allowed for discussion between EPA, DEP and the facility (or system) managers and operators after an initial draft of the permit was developed. This coordination process was helpful in preventing miscommunication and establishing a more collaborative approach to the NPDES permit process. The new, non-communicative permitting process is a step back showing EPA moving away from good practice in permit issuance. The utility managers and technical and operations professionals working in the communities on these systems are stewards of the local environment and can offer great insight and valuable information before the permit draft is

issued. We urge EPA and DEP to collaborate to return to a more communicative and collaborative approach to issuing NPDES permits.

The Town of Shrewsbury and its staff are committed to providing safe and effective service to its utility users and the general public, including acting appropriately to protect the environment. Our community is active in managing, maintaining and improving our water resource systems to meet local needs, and partners with neighboring communities, like Westborough, to do so appropriately. We request that EPA consider the comments submitted herein and make the requested revisions to the NPDES permit before final issuance.

Response 18

EPA acknowledges the Town of Shrewsbury's commitment to being stewards of the environment through its ongoing water resource programs and recognizes that municipalities serve as sources of information regarding their wastewater infrastructure and other community-based issues.

During the permitting process, EPA conducted a site visit at the Facility on April 16, 2019 and a representative of the Board (that includes three members from the Town of Shrewsbury) attended the site visit. EPA listened to concerns of the operators and the Board relative to the permit, discussed the NPDES renewal process and communicated several of the changes EPA expected would be in the renewed Permit.

EPA also notified the Town of Shrewsbury in a letter dated August 10, 2015 that the Town would be included on the Permit as a Co-permittee. The letter included an EPA contact that was available to answer questions from the Town about their responsibilities as a Co-permittee.

Another opportunity for communication with EPA on the Draft Permit is during the Public Comment period. EPA carefully considers all comments submitted during the public comment period and considers new points that are raised or new material that is supplied including requests to revise conditions contained in the Draft Permit. Any changes made to the Draft Permit are reflected in the Final Permit, and the justification for such changes are provided in this Response to Comments document.

C. Comments from John K. Westerling, Director of Public Works, Town of Hopkinton on November 9, 2020.

Comment 19

<u>Biochemical Oxygen Demand (BOD) Limits:</u>
The draft permit includes a change in the parameter for the winter season BOD limits. The prior permit included this limit as $CBOD_5$, while the new draft presents this limit as BOD_5. This is an effective reduction in the limit included in the permit. The fact sheet provides no basis for a limit reduction, and presents the draft limit as the same, noting that "… no new WLAs have been established and there have been no changes to the secondary treatment standards.". To be consistent, the new permit limit should be issued as a $CBOD_5$ limit.

Response 19

See Response 8.

Comment 20

Aluminum Limits:
The draft permit includes a new limit for Total Aluminum as 87 µg/L. This limit is based on an assumption of zero stream flow in the receiving water upstream of the facility. The EPA is aware that Massachusetts completed work on new surface water quality standards (SWQS) for aluminum, and these new standards were issued by Massachusetts Department of Environmental Protection (MassDEP) as draft regulations for public comment in 2019. The new proposed standard for aluminum in the Assabet River is significantly higher than the outdated standards from the EPA's 1988 guidance. Recognizing the impending regulations, the EPA action to include an outdated standard in this permit is unreasonable and the limit should be removed.

The Town recognizes the provision for continued monitoring of aluminum (Report) as an interim limit, but notes that recent events (notably the COVID19 pandemic and a focus on other water quality issues) have diverted MassDEP's effort away from finalizing the new SWQS for aluminum. As such, the three-year compliance schedule for aluminum, as included in the draft permit, is insufficient to support the inclusion of a new total aluminum limit. Clearly, the appropriate approach for this permit cycle should be to maintain the Report requirement for aluminum from the prior permit, and recheck the reasonable potential calculation during the next future permit issuance (c.2025), at which time the new SWQS and their relevance will be established.

Response 20

See Responses 3 and 9.

Comment 21

Phosphorus Limits:
The draft permit includes a reduction in the winter season phosphorus limit to 0.2 mg/l. While this draft limit represents a significant change from the prior limit, the Town appreciates the relevance of this change from prior discussions with the EPA. The allowance for the interim limit in the draft permit is critical to allow the plant operators time to effectively meet the new limit. We do note that this change will result in increased costs and require additional staff attention, and as such will limit the ability to support other proposed changes in the permit.

Response 21

See Response 10.

Comment 22

Ammonia Limit:
The draft permit includes a reduction in the winter season ammonia nitrogen limit to 5.1 mg/l, and also extends the 'summer' season (which includes a limit of 1 mg/l) period to include from April through October (from the previous June through October period). These draft changes represent a significant change from the prior limit, and as such require discussion with the plant

operators to determine the ability to meet the limits and the impacts of such compliance. The EPA should review the limits and impacts with the operators, and review the basis of the change, before proceeding with the change. As a minimum, the initial permit should maintain the original season limits (June through October) until any new limits are established at the facility.

Response 22

See Responses 4 and 11.

Comment 23

Nitrogen Monitoring:
The draft permit adds requirements for monitoring (Report) of nitrogen (TKN, inorganic nitrogen/NO_x, and total nitrogen), on a weekly/monthly basis. These requirements will add significantly to the costs for laboratory testing and seem unwarranted. The Assabet River drains to the Concord River, which ultimately discharges to the Merrimack River, and then to directly to the Atlantic Ocean. Given the lack of any downstream embayments or estuaries, downstream nitrogen impacts are unlikely. Therefore, it does not appear that these nitrogen monitoring requirements are necessary. The proposed weekly frequency of the testing in the summer is also an added burden for the community. The nitrogen monitoring requirements should be removed from the permit.

Response 23

See Response 12.

Comment 24

Ambient Characteristic Sampling:
The new permit provides for ambient characteristic sampling for a range of parameters. Many of these are to be done on a quarterly basis, in concert with Whole Effluent Toxicity (WET) testing, though phosphorus monitoring is to be done monthly in alternating years. Very little specific basis is presented to support the need for this additional testing requirement. Based on historic performance, there is limited likelihood that this facility will fail the WET testing, which presents further questions as to the value of the required testing. Further, the specifics of the ambient phosphorus testing requirements, which are constrained by rainfall, present additional complexity which will present a distraction for operator's time which is needed at the facility. The Town requests that these ambient testing requirements be removed from the permit.

Response 24

See Response 13.

Comment 25

Monitoring for PFAS Compounds:
The draft permit includes requirements for sampling and reporting on per- and poly-fluoroalkyl substances (PFAS), including required testing of influent wastewater, treated effluent discharge, and sludge from the WWTF. These new permit requirements include the six (6) PFAS compounds identified in the Massachusetts Drinking Water Standards (PFHxS, PFHpA, PFNA, PFOS, PFOA and PFDA). In addition, the permit includes provisions for annual testing of local industrial dischargers for PFAS compounds under the Industrial Pretreatment Program (IPP) requirements. As noted in the fact sheet, an approved test for wastewater PFAS testing has yet to

be developed, and the requirements for these are set to only begin following the publishing of accepted test methods for wastewater and biosolids (sludge). As such, it appears to be established that these permit requirements are pre-mature and should be held until further information is available.

The Town recognizes the concerns related to these PFAS compounds and shares the EPA's and the MassDEP's interest in knowing more about these issues. However, PFAS compounds are already known to be present in our environment, in humans and in industrial products and consumer goods. As of today, regulations have not been implemented at the Federal or State level to eliminate these compounds of concern from consumer products. As such, it is clearly pre-mature to set the groundwork for regulating PFAS in wastewater discharges when regulations have yet to address consumer goods (including food products).

The impacts of the required PFAS monitoring requirement will be significant for all WWTFs. One major concern is the possible impact on sludge disposal. Once PFAS is found to be in wastewater sludge, the ability to properly dispose of sludge from not only this WWTF, but all Massachusetts WWTFs, may be severely compromised. This issue will be exacerbated because of the understanding of concern for PFAS compounds, but the lack of defined regulations guiding safe disposal of affected solids. The number of facilities that can effectively dispose of PFAS compounds is severely limited and will result in a significant cost increase for sludge disposal for all facilities, or worse result in eliminating options for safe disposal of sludge. If facilities are not able to dispose of sludge in a safe and timely manner, the environmental (and potential public health) impacts of stockpiling sludge on-site will be significant.

The Town understands that testing of industrial contributions that may contribute PFAS compounds to the waste stream may be needed eventually. Further, the Town supports (and urges) the need to provide for legislation to remove these components from industrial and commercial products as the primary method of reducing the presence of these compounds in our environment.

We therefore request that the PFAS monitoring requirement be removed from the NPDES permit at this time. At such time as the most important consumer product PFAS prohibition provisions are in place, a more reasonable approach to addressing the presence of PFAS compounds in wastewater may be appropriate.

Response 25

See Response 14.

Comment 26

Unauthorized Discharges:
The draft permit includes provisions for public notification of sanitary sewer overflows (SSOs). This requirement appears redundant to the MassDEP requirements for SSO notification, and as such is not necessary. In addition, the December 2020 date to begin this process will clearly fall before the effective date of the final permit to be issued. We suggest this clause be eliminated.

Response 26

See Response 15.

Comment 27

Operation and Maintenance of the Sewer System:
The draft permit includes new provisions related to the operation and maintenance of the sewer system, which in this case are now directly applicable to the systems of the co-permittees. The Town has a current system in place to operate and maintain, and on occasion improve its wastewater collection system. These provisions are governed sufficiently by Massachusetts regulations and good practice, which have historically proven sufficient to meet the public interests. In fact, many of the required elements are already part of the necessary compliance with 314 CMR 12.00 (Operation, Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers), making the permit condition redundant. Additional regulation of the system operations is not needed within the NPDES permit. We request that these redundant provisions be removed from the final permit.

Response 27

See Response 16.

Comment 28

Collection System Map:
The draft permit is very prescriptive on mapping of the collection system. The Town maintains a map of its collection system and will make updates to the map from time to time to support system operations and improvements. The specific permit language identifies mapping details that may not be fully available, and which is not critical for a functional system map. Flexibility in map creation and details should be allowed for in the creation of mapping tools. A separate permit requirement for this item is not needed, and the details should be removed from this permit.

Response 28

See Response 17.

Comment 29

General Comments on the Permit Process:
The Town of Hopkinton notes that the permit process has included no outreach to the permittee communities prior to issuance of the draft permit. The NPDES program previously allowed for discussion between the EPA, the MassDEP and the facility (or system) managers and operators after an initial draft of the permit was developed. This coordination process was helpful in preventing miscommunication and establishing a more collaborative approach to the NPDES permit process. The new, non-communicative permitting process is a step back – showing the EPA moving away from good practice in permit issuance. The utility managers and technical and operations professionals working in the communities on these systems are stewards of the local environment and can offer great insight and valuable information before the permit draft is issued. We urge the EPA and the MassDEP to collaborate to return to a more communicative and collaborative approach to issuing NPDES permits.

The Town of Hopkinton and its staff are committed to providing safe and effective service to its utility users and the general public, including acting appropriately to protect the environment. Our community is active in managing, maintaining and improving our water resource systems to meet local needs, and partners with neighboring communities, like Westborough, to do so appropriately. We request that the EPA consider the comments submitted herein and make the requested revisions to the NPDES permit before final issuance.

Response 29

EPA acknowledges the Town of Hopkinton's commitment to being stewards of the environment through its ongoing water resource programs and recognizes that municipalities serve as resources of information regarding their wastewater infrastructure and other community-based issues.

EPA disagrees that the permitting process has been non-communicative with the Wastewater Treatment Board and the co-permittees. EPA conducted a site visit at the Facility on April 16, 2019. At that meeting, a representative of the Board (of which Hopkinton is a non-voting member) was in attendance and posed questions to EPA on the permitting process. The meeting was an opportunity for the Board to ask questions about the Permit renewal process. EPA discussed the NPDES process as well as changes that would be made to the Permit.

Another opportunity for communication with EPA on the Draft Permit is during the Public Comment period. EPA carefully considers all comments submitted during the public comment period and considers new points that are raised or new material that is supplied including requests to revise conditions contained in the Draft Permit. Any changes made to the Draft Permit are reflected in the Final Permit, and the justification for such changes are provided in this Response to Comments document.

D. Comments from Alison Field-Juma, Executive Director, Organization for the Assabet, Sudbury, and Concord Rivers on October 9, 2020.

Comment 30

PFAS reporting and regulation. We strongly support reporting on PFAS and regulation as soon as possible. Studies indicate that PFOA and PFOS can cause reproductive and developmental, liver and kidney, and immunological effects in laboratory animals. Both chemicals have caused tumors in animals[21]. The Clean Water Act protects public drinking water supplies (e.g., Billerica). It also protects the aquatic community: "Water quality should be such that it results in no mortality and no significant growth or reproductive impairment of resident species. Any lowering of water quality below this full level of protection is not allowed."[22] The Massachusetts regulations defining Class B waters state as follows: "These waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions."[23] Since PFAS bioaccumulates, the impacts on other wildlife up the food chain could be significant, including on locally-important fish-eating birds (bald eagle, osprey,

[21] EPA website accessed 8/17/20: https://www.epa.gov/pfas/basic-information-pfas
[22] *Water Quality Standard Handbook*, Ch. 4: Antidegradation, EPA-823-B-12-002, 2012.
[23] 314 CMR 4.05(b).

kingfisher, heron) and riverine mammals. Also note that intersex fish have been identified in the Assabet River by the U.S. Fish and Wildlife Service[24] and PFAS chemicals have been found to have reproductive effects and be estrogen mimics.[25] A study using rainbow trout found that "Perfluorooctanoic (PFOA), perfluorononanoic (PFNA), perfluorodecanoic (PFDA), and perfluoroundecanoic (PFUnDA) acids were all potent inducers of the estrogen-responsive biomarker protein vitellogenin (Vtg) in vivo, although at fairly high dietary exposures."[26]

Once known, and with the necessary state criteria in place, there should be no delay in reducing PFAS contamination in the Westborough WWTP discharge. As soon as state surface water quality criteria for PFAS compounds are promulgated, if the applicant's reporting on the six PFAS compounds shows concentrations above state-established thresholds, we ask that a permit modification be developed as soon as possible to ensure that the levels are brought below those thresholds prior to discharge. In addition, if any new PFAS chemicals are added to state regulation, the permit should be modified to include them. We recommend that the final permit be worded so as to automatically include any updates to the State regulations regarding regulated PFAS chemicals. This is particularly important if the 5-year permit extends beyond that period, as has happened with the 2005 permit. In 2020 the State promulgated the PFAS drinking water quality standard. This is not a theoretical problem, the Town of Billerica's 2019 Annual Water Quality Report (Department of Public Works, p. 3) states, regarding untreated water withdrawn from the Concord River: "PFAS was detected in the water and was reduced through our treatment process to a level of 7 parts per trillion (ppt)." Thus it is not only essential that the contributions of extremely mobile and persistent PFAS from WWTPs be monitored and reported, but concentrations must be reduced due to, among other reasons, this public water supply downstream.

Response 30

EPA agrees that the impacts of PFOA and PFOS on human health and the environment merit close consideration and imposition of protective controls upon promulgation and approval of any applicable water quality standards. EPA notes that it is currently implementing a permit backlog reduction strategy,[27] and in the future expects more expeditious reissuance of expired permits, which should mitigate one aspect of the commenter's concerns.

EPA may modify the Final Permit when Massachusetts adopts regulations for additional PFAS chemicals. A permit modification is allowed pursuant to 40 CFR § 122.62(a)(3), if the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations. At this time, EPA recommends the Permittee work with dischargers in their industrial pretreatment program to reduce per-polyfluorinated compounds in process wastewater discharged to the treatment plant.

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[24] Iwanowicz,L.R., et al. 2013. "Evidence of estrogenic endocrine disruption in smallmouth and largemouth bass inhabiting Northeast U.S. National Wildlife Refuge waters: a reconnaissance study." On-Refuge Investigation 51410-1261-5N44, Final Report Publication No. CBFO-C13-04.

[25] Studies include: Tsai, Meng-shan, et al. 2020. "A case-control study of perfluoroalkyl substances and the risk of breast cancer in Taiwanese women." *Environment International* Volume 142, September.

[26] Benninghoff, A.D., et al. 2011. "Estrogen-Like Activity of Perfluoroalkyl Acids *In Vivo* and Interaction with Human and Rainbow Trout Estrogen Receptors *In Vitro." Toxicological Sciences* 120(1): 42–58.

[27] https://www.epa.gov/sites/production/files/2018-02/documents/fy-2018-2022-epa-strategic-plan.pdf, p.46.

Finally, EPA notes that the Final Permit requires PFAS monitoring and reporting to help EPA better understand potential discharges of PFAS from this Facility and to inform future permitting decisions.

Comment 31

Screening Priority Pollutants and Contaminants of Emerging Concern

Due to the rapidly changing science on contaminants of emerging concern (CECs) and advances in detection levels, we ask that the applicant conduct a Priority Pollutant Screening every five years (in the event this Phase 2 permit is extended as was the Phase 1 permit) using the most current Priority Pollutant list. Where there are additional CECs that may reasonably be considered to be possible contaminants of the Westborough effluent they should be included.

Response 31

The priority pollutant scan occurs 180 days before the expiration of the Facility's permit, included with the Facility's application. The comment does not request specific information on a pollutant or pollutant parameter and the standard advanced by the commenter— "reasonably considered to be possible contaminants"—would not provide sufficient clarity to the City on the contaminants required to be included in the scan. Further, many CECs do not have applicable water quality criteria. Still, EPA reserves broad discretion to ask for additional information pursuant to Section 308 of the CWA and may exercise this authority if, for example, EPA determines a pollutant or pollutant parameter is discharged into the receiving water that causes or has reasonable potential to cause an excursion of a State water quality standard after characterizing the effluent and receiving water data. EPA is cognizant of the importance and potential impact of CECs and will continue its practice of monitoring developments in this area and fashioning necessary and appropriate requirements if warranted by evidence. As the commenter may be aware, EPA's Office of Research and Design is currently conducting research in conjunction with the United States Geological Survey (USGS) on the prevalence of emerging contaminants in drinking water sources, including rivers and streams, and information on the research is available at https://www.epa.gov/water-research/determining-prevalence-contaminants-treated-and-untreated-drinking-water.

Comment 32

TSS and BOD removal at a minimum efficiency of 85%

We support the addition of the 85% removal efficiency, which provides an important backstop to protect the rivers. This is consistent with the other recently-issued Assabet River permits.

Response 32

EPA acknowledges the comment.

Comment 33

Flow limit

We strongly support maintaining the discharge flow average monthly rate of 7.68 MGD as in the 2005 permit. This is supported by the data submitted by the applicant and the application, and the Fact Sheet. Focused efforts should be made by the permittee and co-permittees Shrewsbury and Hopkinton to reduce this flow wherever possible through limiting extension of the collection system, removing I/I, and encouraging water conservation and minimization of wastewater. This will reduce the likelihood of sanitary sewer overflows and treatment bypasses. It will also improve groundwater levels and base flow for streams and wetlands, and for people dependent on private wells. We note that the Shrewsbury population served by this treatment plant was nearly double that of Westborough at the time of application (Application, p. 2/21).

Response 33

EPA acknowledges the comment and notes that the flow limit in the Final Permit is the same as in the 2005 Permit.

Part I.C Operation and Maintenance of the Sewer System of the Final Permit includes requirements for the proper operation and maintenance of the collection system, including controlling I/I to the wastewater collection system. The permittee and co-permittees are encouraged to consider the approaches suggested in the above comment, as well as other measures they can feasibly undertake, in their development of a comprehensive operation and maintenance program aimed at satisfying permit requirements.

Comment 34

Collection system mapping, O&M and reporting to maximize I/I removal

We would like more information on the status of the collection system mapping required under the 2005 permit, in particular, the implementation of the Infiltration and Inflow (I/I) Control Plan required by that permit. We strongly support the additional requirement in this Phase 2 permit for collection system mapping and O&M plan and related reporting for the permittees and co-permittees. This will provide important information on the impact of I/I on the treatment plant influent flows in order to understand the magnitude of the problem and progress made so far. Westborough and co-permittees Shrewsbury and Hopkinton should continue to be encouraged to commit to significant progress in meeting milestones for reducing I/I. We note that there appears to be information missing from 6(f) on p. 14/22 of the draft Permit.

Response 34

The mapping elements required in the 2005 Permit I/I Control Plan covered;

- a map of the inspection and maintenance activities including corrective action measures taken during the previous year
- a map with areas identified for I/I investigation and actions in subsequent years.

The 2005 Permit did not include a collection system mapping requirement. Rather, the collection system mapping requirement is scheduled to be completed within 30 months of

the effective date of the Final Permit. The Permittee is not required to send EPA a copy of the collection system map although it must be available for review by federal, state and local agencies upon request

EPA notes the Permittee reported an estimated 1,500,000 gpd flows into the treatment works from I/I on the NPDES Permit Application submitted in 2010.

There is not information missing from 6(f) on p.14/22 of the Draft Permit. The omission to which the commenter seems to refer was in Marlborough Westerly Wastewater Treatment Facility's Draft Permit. For Westborough, the provisions of 6(f) are included in their entirety on p. 15/23 of the Draft Permit.

Comment 35

Public notification of Sanitary Sewer Overflows (SSO) and treatment bypasses

Section I.B.2 of the draft permit requires the Permittee to notify the public within 24 hours of becoming aware of any unauthorized discharge. While we strongly support notification of the public of SSOs and treatment bypasses, allowing 24 hours for this public notification is wholly inadequate. Although occurring infrequently, when there is a sanitary sewer overflow or release for any reason, or a bypass of untreated or partially treated sewage, the Permittee should also notify the municipalities downstream, including Billerica, and post a notice on their website within 2 hours to alert the public that they and their pets should avoid being in contact with the water for a specified time interval. Posting on the city's website is important but not sufficient notification, as an average river user would have no reason to check the website prior to using the river. We highly encourage the establishment of a notification system by email or text message whereby river users can request direct timely notification. A bill requiring this is currently being considered by the Massachusetts legislature, but the timing of its passage is unknown.[28] Due to the river's flow, public notification after the contamination has flowed significantly downstream is not useful and does not protect public health. Such notifications are common practice for Combined Sewer Overflows in other communities.

Response 35

EPA must balance the need to notify the public in a timely way while also accounting for administrative, staffing and logistical constraints with which a Permittee may be confronted. EPA also must ensure that there is sufficient time for a Permittee to preliminarily assess any data and ensure that the information disclosed is reasonably accurate. EPA, in addition, took into account the fact that unlike SSOs, CSOs can be modeled and predicted and their locations are known. SSOs can occur anywhere in the system (and may not result in a discharge to United States waters), and the first priority of the system operator should be to direct resources toward rectifying the problem. EPA

[28] An Act Promoting Awareness of Sewage in Public Waters https://malegislature.gov/Bills/191/H4921 is being considered by the Senate Ways & Means Committee, and specifies: "(d) Not later than 2 hours after discovery of a discharge from the permittee's outfall, the permittee shall issue a public advisory and any updates required by subsection (b) by email or text messaging to individuals subscribed to receive notifications about a discharge from the permittee's outfall. The permittee shall also send the advisory and any updates required by subsection (b) to the 2 largest news organizations that report on local news in communities near the outfall."

will evaluate the protectiveness of this condition over the course of the permit term, and based on that information, will make a record-based judgment on whether more rapid dissemination of this information is warranted. Therefore, the Final Permit has not been changed.

Since the closing of the public comment period on the Draft Permit, the Commonwealth of Massachusetts passed an Act on January 12, 2021 that requires Permittees and Co-permittees to issue a public advisory when there is a discharge of untreated or partially treated sewage, industrial waste or other effluent, including combined sewer overflows, from the Permittee's outfall into Massachusetts waters. The Massachusetts Department of Environmental Protection is promulgating regulations to carry out the purpose of the Act. The regulations will take effect within 18 months of the passage of the Act (on July 6, 2022). The Act can be found at: https://malegislature.gov/Bills/191/H4921.

Comment 36

Ammonia Nitrogen

The lower November-March limit for Ammonia Nitrogen is appropriate (from 8.0 mg/L to 5.1 mg/L average monthly). Ammonia is a form of nitrogen that can be toxic to aquatic wildlife. Its toxicity is highly dependent on temperature and pH. We support this change in particular due to increasing ambient air and water temperatures in the summer when aquatic life, particularly fish, is most stressed. The Fact Sheet notes that EPA assumes a warm weather temperature of 25 degrees C. We would like to know whether this reflects actual water temperatures observed in the receiving waters and whether this temperature will be adjusted as ambient water temperatures increase over the coming years. We would like an explanation as to why a lower April-October limit is not required given the new draft permit limit of 0.1 mg/L in the Marlborough Westerly permit compared with the 1.0 mg/L limit carried forward from 2005 in this permit, ten times the concentration. We support the more frequent monitoring during the summer months.

Response 36

As stated in the Fact Sheet (page 24), EPA assumed an ambient water temperature of 25°C in calculating the warm weather ammonia nitrogen limits in the Draft Permit. This temperature was chosen as a reasonable worst case water temperature from April through October in deriving the ammonia criteria for those months. If future data confirms that water temperatures consistently exceed that level, EPA may reevaluate in a future permitting action whether the ammonia criteria need to be based on that higher temperature for all or part of the warm weather season.

Based on this comment, EPA reviewed the OARS Water Quality Monitoring Program Final Report: 2018-2019 Field Season[29] that has instream temperature data upstream of the Facility's discharge. The report states,

> "Many of the tributary streams support or have supported cold-water fisheries, therefore, tributary and headwater temperature readings are compared with the

[29] https://drive.google.com/file/d/1mjXY_AMRAOya1AUmdoO2B-VWvgpBZZzk/view

cold-water standard (20.0°C). The recommended single-reading maxima for brook trout is 20.0°C and for brown trout is 23.9°C. Most sites exceeded 20°C in July and August of both years (Figure 8). In 2018, only ABT-312 exceeded the 23. °C threshold, but in 2019 ABT-312, ELZ-004, and NSH-002 all exceeded it.

Year-on-year comparisons of temperature data show very little statistical change in water temperatures for the period of record (Figure 9). Trend lines are level for most sections except the Headwater & Tributaries and Concord sections. The Headwater & Tributaries section seems to show an upward trend in water temperatures since 2002 of about 0.05°C per year. An analysis by site also shows that this upward trend does seem to be present for this time period for most of the sites in this category (Figure 10). However, looking at a longer time period for the one Headwater & Tributary site that we have data back to 1992 shows less of an upward trend – only 0.007°C per year (Figure 11) and a Mann-Kendall flow-weighted statistical analysis returns no significant trend for either Headwaters & Tributaries or Concord (Table 11)."

Given that this report does not indicate consistent water temperatures above 25°C, this does not result in any change to the Final Permit.

See Response 4 related to a change in the ammonia limits for April and May. As noted in that response, EPA calculated an ammonia nitrogen chronic water quality criterion of 2.6 mg/L based on 25°C. EPA has revised the ammonia-nitrogen effluent limit in the Final Permit to meet the chronic criterion in April and May while maintaining the monthly average limit of 1.0 mg/L from June 1 through October 31.

Regarding the ammonia limit in the Marlborough Westerly Final Permit, EPA re-calculated the limit in the Final Permit for Marlborough Westerly due to a calculation error in the Draft Permit and carried forward the monthly average limit of 2.0 mg/L from the 2005 Marlborough Westerly Permit. As stated in both the Marlborough Westerly and Westborough Fact Sheets, the ammonia criteria in EPA's *National Recommended Water Quality Criteria,* 2002 (EPA 822-R-02-047) document are included by reference in the Massachusetts WQS (See 314 CMR 4.05(5)(e)). See the Response to Comment 5 in the Marlborough Westerly Response at https://www3.epa.gov/region1/npdes/permits/2021/finalma0100480permit.pdf

Comment 37

Total Kjeldahl Nitrogen, Total Nitrate + Nitrite, and Total Nitrogen

We support the addition of total Kjeldahl Nitrogen, Total Nitrate/Nitrite, and Total Nitrogen reporting, but an expectation should be set for optimization of nitrogen removal. Since nitrogen is the controlling nutrient in estuarine systems, and nitrogen has been found to pose a threat to the Merrimack estuary (Fact Sheet, p. 25), we need to consider and act on the downstream effects. As the Fact Sheet narrative discusses, nitrogen levels in the Merrimack River estuary are a concern for the health of this near-shore coastal system. This permit requires only sampling and reporting of most forms of nitrogen (limit only for ammonia) arguing more study is needed.

However, the referenced CDM Smith/US ACOE study was completed in 2017. In the meantime, the estuary is, at best, stressed and the Gulf of Maine experiences increasingly worrisome conditions including increasing geographical and spatial extent of red tide blooms. We recommend that the permit require the WWTP to reduce nitrogen in its effluent to the maximum extent possible with its current treatment process year-round, and to report on its efforts to reduce nitrogen in the effluent. While this would not be a permit limit or a requirement to add more treatment processes, we think it is important to encourage the facility to investigate source reduction and process optimization at this point. We would also like to know when there will be sufficient analysis of the Merrimack estuary to determine whether or not nitrogen limits upstream are needed.

Response 37

The Merrimack River watershed is a large and densely populated watershed which receives discharges from 40 POTWs in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by the POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion. Nitrogen data collected by CDM Smith in 2014 and 2016[30] and by EPA in 2017,[31] 2018,[32] 2019[33] in the estuarine portions of the Merrimack River indicate elevated levels of total nitrogen and chlorophyll 'a.' EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of the results are outside the range of target criteria developed for Great Bay in NH[34] and estuaries in southeastern MA.[35]

While at this time the Merrimack River is not well characterized for nitrogen impacts (*See* the National Estuarine Eutrophication Assessment),[36] EPA notes that the estuaries immediately north and south of the Merrimack River Estuary, Hampton Harbor Estuary and Plum Island Sound, have both been identified as "symptoms worsening since 1999."[37] The eutrophic condition of Plum Island Sound estuary and the Merrimack River

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[30] CDM Smith/US Army Corps of Engineers New England District, *Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017*, Appendix C.
[31] U.S.EPA Region 1, 2018, "Lower Merrimack Monitoring Report Project, Summer/Fall 2017.", EMT-2017-Merr, March 2018.
[32] U.S.EPA Region 1, 2019, "Lower Merrimack Monitoring Report Project, Summer/Fall 2018.", EMT-2018-Merr, January 2019.
[33] U.S.EPA Region 1, 2020, "Lower Merrimack Monitoring Report Project, Summer/Fall 2019.", EMT-2019-Merr, January 2020.
[34] NHDES, 2009, "Numeric Nutrient Criteria for the Great Bay Estuary" https://www.des.nh.gov/organization/divisions/water/wmb/wqs/documents/20090610_estuary_criteria.pdf
[35] MassDEP, 2003, "Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report" https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Verity%20View/DE93FF445FFADF1285257527005AD4A9/$File/Memorandum%20in%20Opposition%20...89.pdf
[36] Bricker, S.B., C.G. Clement, D.E. Pirhalla, S.P. Orlando, and D.R.G. Farrow. 1999. National Estuarine Eutrophication Assessment: Effects of Nutrient Enrichment in the Nation's Estuaries. NOAA, National Ocean Service, Special Projects Office and the National Centers for Coastal Ocean Science. Silver Spring, MD: 71 pp.
[37] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. page 42.

estuary are influenced by any level of nitrogen input.[38] Additionally, in 2004,[39] Plum Island Sound was the only estuary in the North Atlantic region classified as "moderate high eutrophic conditions." Although the report is dated 1999, EPA is not aware of any comprehensive assessment that has been conducted and made available since its publication. It is in the interests of the watershed and all stakeholders for EPA to make as informed a decision as possible on this critically important issue, in order for EPA, if necessary, to establish effluent limits in future permitting actions.

EPA concurs that recent data show elevated levels of total nitrogen in the estuarine portions of the Merrimack River and agrees it would be prudent for the City to be proactive at the treatment plant to reduce nitrogen in the effluent wherever possible. It is in the interests of the watershed and all stakeholders for EPA to make as informed a decision as possible on this critically important issue, for EPA to select an appropriate permit regime (i.e., one that will be effective on a watershed-wide basis should EPA find optimization requirements or permit limits are necessary). EPA has determined that more data are necessary to better understand the impact of nitrogen loading in the Merrimack River and the Gulf of Maine. The initial step in this effort is to collect and review that data before imposing further permit requirements such as optimization and source reduction. EPA will begin to analyze nitrogen controls in the Merrimack basin during the permit cycle following the one that includes nitrogen monitoring (for the Facility in question).

Comment 38

Phosphorus

This Phase 2 draft permit does not fully comply with the federal and Massachusetts Clean Water Acts because the Total Phosphorus discharge concentration limits do not ensure the attainment of the water quality standards established for Class B waters, as required by Section 301(b)(1)(C) of the Clean Water Act and 40 CFR § 122.4(d).

While we support a reduction in the winter Total Phosphorus (TP) effluent limit, we ask that a year-round limit of 0.1 mg/L TP be established in this permit, and that the reporting requirement for TP loading in all seasons (Average Monthly and Maximum Daily) be restored.

The draft permit reduces the winter "seasonal" concentration from 1.0 mg/L to 0.2 mg/L with a one-year compliance schedule. This is a significant reduction and focusing on the winter limits is a logical step in line with the 2010 study by the Army Corps of Engineers on the contribution of sediments impounded by dams on the Assabet River to water quality impairment due to phosphorus recycling[40]. This study showed that phosphorus discharged from wastewater treatment plants during the winter was likely to be taken up by sediments and subsequently

[38] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. A20 and A24.
[39] Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. "Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change" NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Siver Spring, MD. 328 pp.
[40] *Assabet River Massachusetts: Sediment and Dam Removal Feasibility Study*, US Army Corps of Engineers, September 2010.

released to fuel aquatic plant growth in the next growing season. As noted above, OARS' annual biomass survey of the three largest impoundments downstream of the Westborough discharge (Hudson, Gleasondale, and Ben Smith) clearly shows that duckweed has not been a sufficient proxy for all biomass. Excess biomass growth, particularly filamentous green algae, has continued and expanded in some areas, despite reduced water column concentrations of phosphorus. This plant, as well as rooted nuisance aquatic plants, derives its nutrients from the sediment. With increasingly hot summers and drought impacting flows in the river, this problem has been magnified as shown in Figures 2, 3 and 4, above.

Since there has been no progress in remediating the sediment impacts through dam removal or other methods, the only tool available through this permit is to significantly reduce the new phosphorus being added to the river and its impoundments from the treatment plants. The new winter TP limit in this permit, however, is still twice the growing season concentration of 0.1 mg/L. The phosphorus loading can also be expected to be higher in the winter due to a larger volume of wastewater discharged. The draft permit does not set a load requirement nor require reporting of loading data, which should be included. We recognize the effort made by the treatment plant operator to keep winter TP concentrations well below the 2005 permit limit of 1.0 mg/L. However, since this reduced winter TP limit is the only attempt made in this permit to meet the TMDL target of 90% reduction in sediment phosphorus flux (Fact Sheet, p. 27), we ask that a year-round limit of 0.1 mg/L TP be put in place.

In fact, no justification has been offered for why the winter limit should be twice the summer limit in this permit. This is particularly significant due to the sheer scale of the effluent discharge relative to the receiving waters. The Fact Sheet (p. 29/43) states only that a reduced winter limit of 0.2 mg/L "is consistent with the technology based Highest and Best Practical Treatment requirement in the MA SWQS" (see 314 CMR 4.05(5)(c)). But no explanation or data are provided to explain or justify why a winter limit of 0.1 mg/L would not be "consistent with" the technology used at the Westborough treatment plant. Furthermore, this MassDEP regulation, appropriately, does not use the loose, nearly meaningless, and therefore arbitrary "consistent with" language. Here is what the regulation states:

> "Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses."

We also observe in the Appendix A, Monitoring Data Summary, that the 0.1 mg/L effluent TP limits have been achieved with no violations during the summer months. However, the effluent concentrations achieved during the winter months are not currently very close to these lower levels (although well below the permit limit of 1.0 mg/L). We would like to know whether TP removal has been optimized during the wintertime, as observed in other treatment plants (e.g., Marlborough Westerly), and thus whether the one-year compliance schedule is really necessary. The Fact Sheet (p. 29) simply states: "Since the Facility will be unable to achieve the cold weather effluent limit of 0.2 mg/L without changes to the treatment process . . ." but provides no evidence to this effect. We would be grateful for an explanation, as any unwarranted delay in reducing the winter season phosphorus release is of concern, as is the higher limit of 0.2 mg/L.

Finally, there is no assurance provided by a lower winter standard alone that this Phase 2 permit will achieve the Assabet's water quality standard.

Response 38

EPA responded to similar comments submitted by OARS for the Hudson and Maynard Wastewater Treatment Facility permits regarding the cold weather total phosphorus limit of 0.2 mg/L. As noted in the Hudson and Maynard response to comments, the reduction of the winter total phosphorus effluent limits for wastewater treatment plants discharging to the Assabet River, will result in a substantial reduction in the annual permitted load. The overall annual discharge of total phosphorus based on the 2020 data from the four wastewater treatment plants into the Assabet River will be reduced, as summarized in the table below. For Westborough, the lower limit will reduce the permitted load from 30.4 lb/day to 9.1 lb/day. This middle-ground approach reflects EPA's conclusion that while water quality has continued to improve since the last round of permit issuance, impairments remain, and achievement of applicable water quality standards will be accelerated through significant reductions (approximately 80%) in the permitted load during the cold weather season without defaulting to the most stringent option on the table. These reductions, and attendant water quality benefits, will be realized relatively quickly early in the permit term through operational changes, as they will not entail major treatment plant upgrades.

	Design Flow, MGD	Summer TP Limit, mg/L	2005 TP winter Limit, mg/L	2005 Annual Average Permitted Load (lb/day)	2020 TP Winter Limit, mg/L	2020 Annual Average Permitted Load (lb/day)
Westborough	7.68	0.1	1	30.4	0.2	9.1
Marlborough West	2.89	0.1	1	11.4	0.2	3.4
Hudson	3	0.1	1	11.9	0.2	3.5
Maynard	1.45	0.1	1	5.7	0.2	1.7
Total				59.5		17.7

The limit of 0.2 mg/L is premised on the lack of phosphorus uptake by plants during cold weather. During cold weather, however, more phosphorus passes through the system without being absorbed by plants than in warm weather. The portion of total phosphorus that does not settle out in the impoundments in cold weather does not affect biota in the river or its impoundment since it is only present outside the growing season, even with a higher flow from the WWTF. Assabet River data collected by USGS demonstrates that some of the total phosphorus entering the impoundments in winter passes through the impoundments[41].

[41] Savoie, J.G., 2016, Streamflow and total phosphorus and orthophosphate data for samples collected in and near the Assabet River, Massachusetts, October 2008 through April 2014: U.S. Geological Survey data release, http://dx.doi.org/10.5066/F72R3PR3, pages 21 - 33.

Concerning treatment and whether a limit of 0.2 mg/L is consistent with Westborough's technology, a limit of 0.2 mg/L accounts for the challenge of biological and chemical treatment system operation during low winter temperatures because of slower bacterial metabolism and lower kinetics than during warm temperatures, respectively[42].

It appears from the Westborough effluent data (summarized in Appendix A of the Fact Sheet with a median of 0.35 mg/L), that Westborough will be able to meet the new winter effluent limit without substantial operational changes or additional chemical costs. However, each facility is configured differently, and some facilities will need to make changes in operation or chemical addition before achieving 0.2 mg/L.

Since the only WQS applicable here is a state narrative criterion and a total phosphorus cold weather limit of 0.2 mg/L complies with the requirements under 314 CMR 4.05(5)(c), this permit complies with both state and federal regulations, pursuant to CWA Section 301(b)(1)(C) and 40 CFR § 122.4(d).

The Final Permit has been modified to include a monitoring requirement for phosphorus loading, as to continue the reporting requirements from the 2005 Permit.

Comment 39

Monitoring

The draft permit's "Effluent Limitation" (p. 4/23) shows a "Maximum Daily" reporting requirement for TP (report mg/L), however the specified required measurement frequency is 3/week (1/week November-March). How can the permittee report the daily maximum if they only measure 1-3 times per week? Do they have to monitor daily and keep daily records but only have to report 1-3 times per week? Upon our request to the treatment plant operator for their monitoring data to compare with our data showing an apparent spike in in-stream concentrations on a Sunday, we were informed that indeed they only sample three times per week in the growing season as required by the permit, and that is done on three consecutive days, Monday-Wednesday). How then is the Daily Maximum known? Is the Average Monthly concentration in the winter the average of only 4 measurements?

Response 39

The average monthly value is the mean of all samples taken within a month. The daily maximum value is the highest recorded concentration in a single month based on all the samples taken in that month.

E. Comments from Jennifer A. Pederson, Executive Director, Massachusetts Water Works Association on October 9, 2020.

[42] Anotai, J., Doungchai, A., & Panswad, T. (2003). Temperature effect on microbial community of enhanced biological phosphorus removal system. *Water Research,* 37, 409 – 415.

Comment 40

MWWA appreciates that EPA is allowing for monitoring only during the first three years of the permit. We would ask that EPA remove the final Aluminum limit given that EPA Headquarters issued a new methodology for determining Aluminum criteria which Massachusetts is working on incorporating into their Water Quality Standards. The proposed total Aluminum limit of .087 mg/L is based on the current Massachusetts (EPA approved) Aluminum criteria which we know does not reflect the latest science. We are concerned that EPA Region 1 is moving forward with issuing any permits with Aluminum criteria given the fact that Massachusetts intends to update its Water Quality Standards to incorporate the new national guidance. While we appreciate EPA has provided an opportunity for Westborough to amend the permit within three years if Massachusetts adopts the new criteria, we believe it is premature to include any permit limit at this time.

We ask that EPA strike the final numeric criteria for Aluminum from this permit and change it to solely a monitoring requirement until the state updates its Surface Water Quality Standards.

Response 40

See Responses 3 and 9.

EPA acknowledges that the commenter has submitted a similar comment on several Massachusetts Draft Permits with aluminum limits. EPA is required to determine reasonable potential and develop permit limits based on a state's current water quality standards that have been approved by EPA. In Massachusetts' current water quality standard that has been approved by EPA, 314 CMR 4.05(e) references the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 as a basis for allowable receiving water concentrations not enumerated in previous sections of the chapter. According to the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002, the acute and chronic criteria for aluminum in a freshwater body are 87 µg/L and 750 µg/L. EPA acknowledges the comment.

F. Comments from Philip D. Guerin, President and Chairman, Massachusetts Coalition for Water Resources Stewardship on October 9, 2020.

Comment 41

<u>Aluminum</u>

The proposed total aluminum limit of 87 µg/L is based on the current Massachusetts, EPA approved, aluminum criteria that is recognized as being erroneous. This standard is being revised using new EPA criteria. Rather than establish a permit limit using criteria that is known to be inadequate, MCWRS recommends that the current permit requirement of "report only" be continued until the new Massachusetts criteria is adopted. Once new criteria is adopted the next permit, which should be issued in five years, would reflect this change with an appropriate limit for aluminum.

Because of the COVID-19 pandemic and altered work schedules, it is unclear when MassDEP and EPA will be able to move the revised criteria through the approval process. Establishing a

three year limit for this process to reach completion is a very arbitrary approach given current circumstances. The permittee should not be held hostage to a process in which they have no part to play. The state and federal agencies are responsible for the adoption of valid aluminum criteria. These agencies should then be responsible for modifying permits to incorporate these changes in criteria. It should not fall on the permittee to request a permit modification or take other steps to get its permit amended to reflect a better scientific understanding of aluminum's impacts on the environment. EPA and MassDEP should find a way to make the permit changes automatic when valid, new criteria is set.

An aluminum limit for the Westborough WWTP is especially concerning since the facility uses an aluminum-based coagulant (PAC) to achieve compliance with a very low (0.1 mg/L) total phosphorus limit during the summer months. It appears the plant has done very well meeting this critical nutrient threshold. Setting aluminum at 87 µg/L in the plant effluent that currently exceeds that limit about 50% of the time will place the Westborough facility in a regulatory squeeze: Meeting a very low phosphorus limit and a very low aluminum limit when the aluminum is what is used to achieve the phosphorus limit. This is even more troubling when it is evident that ambient levels of aluminum in the Assabet River headwaters upstream of the plant discharge exceed the proposed limit 30% of the time and on occasion may be 6 times higher than the proposed limit. (see Fact Sheet, Appendix A-Monitoring Data Summary). If total aluminum is a toxicity threat to aquatic life at the concentrations indicated, then it could be surmised that the river is likely devoid of life upstream of the Westborough Plant.

Response 41

See Responses 3 and 9.

Comment 42

Unauthorized Discharges

Part 1, Section B.2 requires, as of December 21, 2020, a public notification on a website within 24 hours of discovery of any unauthorized discharges, other than sanitary sewer overflows that do not impact a surface water or the public. This requirement is excessive. The range of unauthorized discharges requiring public notification should be limited to those with significant public health or environmental consequences. Factors like season, temperature, river flows, recreational activities and many others need to be considered before needlessly alarming the public and diverting staff and resources to sending notifications. Residents will quickly become deaf to frequent messages about insults to the river and will then not be listening when a real and necessary warning is sent. Let the POTW report to MassDEP and allow for a discussion as to whether a public notification is needed on a case by case basis.

Response 42

EPA disagrees that these notifications are needless or that they will result in the public becoming deaf to them. Rather, the requirement will disclose important information to the public to allow them to make decisions on whether to recreate or not for themselves. It is not intended to alarm the public needlessly. EPA notes that the permit requires these notifications on a public website which will allow concerned citizens the ability to access this information but would not result in frequent unsolicited messages to any residents, as suggested by the comment. The information may also serve to inform the public on

discharges to the receiving water that have generally gone unnoticed by the public yet are adversely impacting water quality.

See Responses 15 and 35.

Comment 43

Alternate Power Sources

The requirement in Part 1, D to have alternate power sources available to operate the portion of the treatment works owned and operated by the permittee should be further limited. Alternate power sources should only be required that would maintain operation of the key and basic components of the treatment train of the POTW and to assure the facility is protected from damage. That would assure screening, primary settling and disinfection is taking place during the brief period when power is lost. It is an extremely rare occurrence that power outages continue for days. Even in those events, the loss of nutrient removal and even parts of secondary treatment for a few days is not a catastrophic event. Backup generators to power the entire plant is an extremely expensive provision that is not cost effective.

Response 43

This requirement is a standard provision in all NPDES Permits issued to POTWs in Massachusetts. The requirement was also in the 2005 Final Permit.

The regulations at 40 CFR §122.41 apply to all NPDES Permits. 40 CFR §122.41(a), *Duty to comply* requires that permittees must comply with all conditions of the permit. Under 40 CFR §122.41(e), *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 backup 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." (Emphasis added). These requirements can also be found in the Part II Standard Conditions which are attached all NPDES Permits issued by EPA Region 1 in Massachusetts and New Hampshire.

The requirement remains in the Final Permit.

Comment 44

PFAS Compounds

MCWRS has great concern for the decision by EPA and DEP to include monitoring and reporting of PFAS compounds at this time. We recognize the relevance of the issue related to the PFAS family of compounds. However, the state of regulatory controls for these substances at both the federal and state level is developing slowly, as is the science related to how these substances impact the environment. The recent regulation of these substances in drinking water have heightened the awareness of these compounds. The limited scientific knowledge combined

with the heightened awareness (and commensurate public concern) make the situation ripe for misunderstanding and unintended consequences.

In particular, the current biosolids processing and disposal within the public wastewater treatment industry is dominated by private hauling, processing and disposal. Concerns on the biosolids disposal side related to the PFAS compounds have already begun to impact solids disposal, and particularly beneficial reuse of biosolids. The industry is not currently prepared to deal with the discontinuation of current biosolids processing and disposal methods. There is much work to do before the industry is ready to regulate these compounds on the municipal wastewater industry side.

As a minimum, the following steps should be completed before monitoring or limits are included in NPDES discharge permits.

1. EPA and DEP should regulate the use of the subject PFAS compounds in all consumer products. This should include eliminating these compounds from consumer goods and industrial processes, and enforcing these regulations. This crucial action alone will be the most effective method of controlling PFAS compounds in our environment.

2. EPA and DEP should provide funding and complete a series of studies to understand the impacts of possible PFAS disposal regulations on the wastewater treatment industry. This should include identifying safe and reasonable solids disposal methods for solids that are found to have PFAS compounds present – including both low levels and higher levels of such compounds.

3. EPA and DEP should then provide industry guidance to ensure that no discontinuation of service will be experienced by treatment works due to the discovery of PFAS compounds in solids or effluent.

4. EPA and DEP should develop and establish a funding program to assist communities in providing any necessary response to the discovery of PFAS compounds in the wastewater, effluent or solids.

5. During the time that these above steps are being taken, EPA and DEP can also advance to understanding of the impacts of these compounds on the environment. In this way, more well-informed permitting can be completed.

At this time, EPA should remove all of the PFAS monitoring requirements from the permit. When the proper other actions have been completed, as described above, these requirements can be imposed on all permittees by combined action of EPA and DEP.

If EPA refuses to remove the PFAS monitoring requirements from the permit, then the implementation timing requirements (included in notes 11 and 12, and other places) should be modified to require the completion of the above steps prior to the requirements becoming effective.

Response 44

EPA agrees that the concern regarding PFAS is a much broader issue than the scope of this NPDES permit and EPA is taking steps to address it, as outlined in EPA's PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024.[43] As suggested in the comment, much work still needs to be done beyond the scope of this permit related to studying the impact to the environment, the impact to human health, and addressing source control of PFAS compounds. As discussed in the Fact Sheet, the purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this Facility and to inform future permitting decisions. Additionally, the collection of PFAS data from a variety of dischargers, including POTWs, will inform many of the steps proposed by the commenter above. The expectation underlying this requirement is that by the time the permit is reissued in the next permit cycle, many of the questions raised by the commenter will have been answered through the efforts of EPA, MassDEP and others. In the meantime, the monitoring provisions do not take effect until the first full calendar quarter beginning at least 6 months after EPA notifies the Permittee that a multi-lab validated method for wastewater is available.

See Response 14.

[43] Available at https://www.epa.gov/pfas/pfas-strategic-roadmap-epas-commitments-action-2021-2024

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"),

Westborough Wastewater Treatment Plan Board ("Permittee")

is authorized to discharge from the facility located at

Westborough Wastewater Treatment Plant
238 Turnpike Road
Westborough, MA 01581

to receiving water named

Assabet River (MA82B-02)
SuAsCo Watershed – USGS Code: 01070005
Class B – Warm Water Fishery

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

The towns of Westborough, Shrewsbury, and Hopkinton are co-permittees for Part B, Unauthorized Discharges; Part C, Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collections systems owned and operated by the Towns; and Part D, Alternate Power Source.

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the terms and conditions of Part B, Part C and Part D of this permit. The Permittee and each co-permittees are severally liable under Part B, Part C and Part D for their own activities and required reporting with respect to the portions of the collection system that they own or operate. They are not liable for violations of Part B, Part C and Part D committed by others relative to the portions of the collection system owned and operated by others. Nor are they responsible for any reporting that is required of other Permittees under Part B, Part C and Part D. The responsible Town departments are:

Town of Westborough Department of Public Works 131 Oak Street Westborough, MA 01581	Town of Shrewsbury Department of Public Works 100 Maple Avenue 2nd Floor Shrewsbury, MA 01545	Town of Hopkinton Department of Public Works 83 Wood Street Hopkinton, MA 01748

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 May 26, 2005.

[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.

This permit consists of **Part I** including the cover page(s), **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

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Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

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 Assabet 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	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Rolling Average Effluent Flow[5]	7.68 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
BOD_5 (April 1 - October 31)	10 mg/L 640 lb/day	10 mg/L 640 lb/day	15 mg/L ---	3/week	Composite
BOD_5 (November 1 - March 31)	25 mg/L 1600 lb/day	40 mg/L 2560 lb/day	Report mg/L	3/week	Composite
BOD_5 Removal	≥ 85 %	---	---	---	Calculation
TSS (April 1 - October 31)	15 mg/L 960 lb/day	15 mg/L 960 lb/day	25 mg/L	3/week	Composite
TSS (November 1 - March 31)	30 mg/L 1,920 lb/day	45 mg/L 2,880 lb/day	Report mg/L	3/week	Composite
TSS Removal	≥ 85 %	---	---	---	Calculation
pH Range[6]	6.5 - 8.3 S.U.			3/day	Grab
Escherichia coli[7,8]	126 cfu/100 mL	---	409 cfu/100 mL	3/week	Grab
Total Residual Chlorine[7,8]	0.011 mg/L	---	0.019 mg/L	2/day	Grab
Total Copper	0.016 mg/L	---	0.016 mg/L	1/week	Composite
Interim Limit Total Aluminum[9]	Report mg/L	---	Report mg/L	1/month	Composite
Total Aluminum	0.087 mg/L	---	Report mg/L	1/month	Composite
Dissolved Oxygen (April 1 – October 31)	≥ 6.0 mg/L			1/day	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Phosphorus (April 1 – October 31)	0.1 mg/L	---	Report mg/L	3/week	Composite
Interim Limit Total Phosphorus[10] (November 1 – March 31)	1 mg/L	---	Report mg/L	1/week	Composite
Total Phosphorus (November 1 – March 31)	0.2 mg/L	---	Report mg/L	1/week	Composite
Ammonia Nitrogen (April 1 – October 31)	1 mg/L Report lb/day	1 mg/L Report lb/day	1.5 mg/L	2/week	Composite
Ammonia Nitrogen (November 1 – March 31)	5.1 mg/L Report lb/day	---	Report mg/L	1/week	Composite
Total Kjeldahl Nitrogen[11] (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L ---	1/week 1/month	Composite
Nitrate + Nitrite[11] (April 1 – October 31) (November 1 – March 31)	Report mg/L Report mg/L	---	Report mg/L ---	1/week 1/month	Composite
Total Nitrogen[11] (April 1 – October 31) (November 1 – March 31)_	Report mg/L Report lb/day	---	Report mg/L ---	1/week 1/month	Calculation
Perfluorohexanesulfonic acid (PFHxS)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[12]	---	---	Report ng/L	1/quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Perfluorodecanoic acid (PFDA)[12]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity[13,14]					
LC_{50}	---	---	≥ 100 %	1/quarter	Composite
C-NOEC	---	---	≥ 100 %	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	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
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[16]	---	---	Report mg/L	1/quarter	Grab
pH[17]	---	---	Report S.U.	1/quarter	Grab
Temperature[17]	---	---	Report °C	1/quarter	Grab
Total Phosphorus[18] (April 1 - October 31)	---	---	Report mg/L	1/month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	2/month	Composite
TSS	Report mg/L	---	---	2/month	Composite
Perfluorohexanesulfonic acid (PFHxS)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[12]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[12]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristics	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Perfluorohexanesulfonic acid (PFHxS)[19]	---	---	Report ng/g	1/year	Composite
Perfluoroheptanoic acid (PFHpA)[19]	---	---	Report ng/g	1/year	Composite
Perfluorononanoic acid (PFNA)[19]	---	---	Report ng/g	1/year	Composite
Perfluorooctanesulfonic acid (PFOS)[19]	---	---	Report ng/g	1/year	Composite
Perfluorooctanoic acid (PFOA)[19]	---	---	Report ng/g	1/year	Composite
Perfluorodecanoic acid (PFDA)[19]	---	---	Report ng/g	1/year	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 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR 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 CFR Part 136 or required under 40 CFR 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). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

   A "composite" sample is a composite 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.

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which 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. Also report monthly average and maximum daily flow in MGD.

6. 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.).

7. 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. The compliance level for TRC is 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.

8. 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.

9. See Part I.G.1 for a compliance schedule and interim monitoring requirements for aluminum.

10. See Part I.G.2 for a compliance schedule and interim monitoring requirement for total phosphorus from November to March.

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

    Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

    Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.345

12. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. See

https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods.

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 DMR submittal which includes the results for that toxicity 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. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

17. 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.

18. See Part I.G.3 for special conditions regarding ambient phosphorus monitoring.

19. This reporting requirement for the listed PFAS parameters takes effect 6 months after EPA's multi-lab validated method for biosolids is made available to the public on EPA's CWA methods program website. See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids and https://www.epa.gov/cwa-methods.

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 Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 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 in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.H below for reporting requirements.

2. Starting December 21, 2020, the Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. 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 collection system owned and operated respectively by the Towns of Westborough, Shrewsbury, and Hopkinton ("co-permittees") shall be in compliance with the activities and required reporting with respect to the portions of the collection system that each owns and operates. The Permittee and co-permittees shall only be responsible for violations relative to the portions of the collection system that they own and operate.

1. Maintenance Staff

   The Permittee and Co-permittees 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 and Co-permittees 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 and Co-permittees 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 and Co-permittees shall prepare a map of the sewer collection system it owns. 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

The Permittee and Co-permittees shall develop and implement a Collection System O&M Plan.

a. Within six (6) months of the effective date of the permit, the Permittee and Co-permittees shall submit to EPA and the State

(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 submittal from 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 and Co-permittees 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 7.68 MGD design flow (6.14 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 and Co-permittees 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 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 CFR Part 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 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 **September 1** 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 CFR 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 CFR Part 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 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

7. Beginning 6 months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website (See https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods) the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:

   - Platers/Metal Finishers
   - Paper and Packaging Manufacturers
   - Tanneries and Leather/Fabric/Carpet Treaters
   - Manufacturers of Parts with Polytetrafluroethlylene (PTFE) or teflon type coatings (i.e. bearings)
   - Landfill Leachate
   - Centralized Waste Treaters
   - Contaminated Sites
   - Fire Fighting Training Facilities

- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be for the following PFAS chemicals:

Industrial User Effluent Characteristic	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	Report ng/L	1/year	Composite
Perfluoroheptanoic acid (PFHpA)	Report ng/L	1/year	Composite
Perfluorononanoic acid (PFNA)	Report ng/L	1/year	Composite
Perfluorooctanesulfonic acid (PFOS)	Report ng/L	1/year	Composite
Perfluorooctanoic acid (PFOA)	Report ng/L	1/year	Composite
Perfluorodecanoic acid (PFDA)	Report ng/L	1/year	Composite

The Industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.3).

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 CFR Part 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 CFR Part 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 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 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 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

    a. General requirements

    b. Pollutant limitations

c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

d. Management practices

e. Record keeping

f. Monitoring

g. Reporting

Which of the 40 CFR Part 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 CFR § 503.8.

7. Under 40 CFR § 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 CFR § 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 Part 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 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 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 CFR § 503 Subpart B.

8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 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

[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

Compliance Guidance"). Reports shall be submitted electronically using EPA's Electronic Reporting tool ("NeT") (see "Reporting Requirements" section below).

G. SPECIAL CONDITIONS

1. Total Aluminum Limit Compliance Schedule

   The new effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limits take effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the permittee is required to monitor its average monthly total aluminum concentration. After this initial three (3) year period, the permittee shall comply with the final monthly average total aluminum limit of 0.087 mg/L ("final aluminum effluent limit"). The permittee shall submit an annual report due by January 15th of each of the first three (3) years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

   If during the three-year period after the effective date of the permit, Massachusetts adopts revised aluminum criteria, then the permittee may request a permit modification, pursuant to 40 C.F.R. § 122.62(a)(3), for a further delay of the effective date of the final aluminum effluent limit. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the permittee may apply for a permit modification, pursuant to 40 C.F.R. § 122.62(a)(3), for a longer time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria and meeting applicable anti-degradation requirements.

2. Winter Total Phosphorus Limit Compliance Schedule

   The Permittee shall achieve compliance with the total phosphorus limit of 0.2 mg/L (November 1 – March 31) within 12 months of the effective date of the permit. During the 12 month period, an interim limit of 1 mg/L is in effect.

3. Ambient Phosphorus Monitoring

   Beginning in April of the first odd numbered year that occurs at least six months after permit issuance, and during odd numbered years thereafter, the Permittee shall collect monthly samples from April through October at a location in the receiving water upstream of the facility and analyze the samples for total phosphorus. Sampling shall be conducted on any calendar day that is preceded by at least 72 hours with less than or equal to 0.1 inches of cumulative rainfall. A sampling plan shall be submitted to EPA and the State (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan for review and State approval. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

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 electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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.6. for more information on State reporting. Because the due dates for reports described in this permit 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 Pretreatment Coordinator in EPA Region 1 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"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. 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

      This information shall be submitted to EPA WD 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"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

5. Submittal of Requests and Reports to EPA Water Division (WD)

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

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request discontinuation of Per- and polyfluoroalkyl substances (PFAS) sampling (see Part I.A.1, footnote 12), Fecal Coliform and/or Enterococcus sampling;

      (4) Request for reduction in testing frequency;

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

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

6. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) 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) Prior to 21 December 2020, written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs). Starting on 21 December 2020, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

(2) Collection System Operation and Maintenance Plan (from Co-permittee)

(3) Report on annual activities related to O&M Plan (from Co-permittee)

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

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
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 ECAD at 617-918-1510
and
MassDEP Emergency Response at 888-304-1133

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.

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

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 - CaCO3)

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 (ug/l)	Limitations

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)			

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: MA0100412

PUBLIC NOTICE START AND END DATES: October 8, 2020 - November 9, 2020

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Westborough
235 Turnpike Road
Westborough, MA 01581

The Massachusetts municipalities of Shrewsbury and Hopkinton are a co-permittee for specific activities required in I.B, I.C, and I.D of the Draft Permit and described in Section 5.5 of this Fact Sheet. The responsible municipal departments are:

Town of Shrewsbury
Department of Public Works
100 Maple Avenue
2nd Floor
Shrewsbury, MA 01545

Town of Hopkinton
Department of Public Works
83 Wood Street
Hopkinton, MA 01748

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Westborough Wastewater Treatment Facility
238 Turnpike Road
Westborough, MA 01581

RECEIVING WATER AND CLASSIFICATION:

Assabet River (MA82B-02)
SuAsCo Watershed – USGS Code: 01070005
Class B – Warm Water Fishery

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1.0 Proposed Action

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

The permit currently in effect was issued on May 26, 2005 with an effective date of July 25, 2005 and expired on May 26, 2010 (the 2005 Permit). The Permittee filed an application for permit reissuance with EPA dated May 15, 2010, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on July 12, 2013 the Facility's 2005 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and Massachusetts Department of Environmental Protection (the State) conducted a site visit on April 16, 2019.

2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 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 §§ 301(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. 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 CFR §§ 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). CWA §§ 301 and 306 provide 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, and 304(d); 40 CFR Parts 122, 125, 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 BOD_5, TSS and pH. *See* 40 CFR Part 133.

Under CWA § 301(b)(1), 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 CFR § 125.3(a)(1).

2.2 Water Quality Based Requirements

The CWA and federal regulations also require that permit effluent limits 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* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 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 CFR § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned 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) antidegradation 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 CFR § 131.12. The applicable State WQSs can be found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, 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, therefore, are typically applicable to average monthly limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) 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," 2) based on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation 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 antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, 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 antidegradation 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 antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of 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, 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 or 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 essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation

in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority 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." 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, 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 by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

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 the State waives (or is deemed to have waivered), its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR §§ 124.53 and 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307 or the applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the 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 EPA's permit appeal procedures of 40 CFR Part 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 final 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 state law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 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 limitations based upon WQS and State requirements are contained in 40 CFR §§ 122.4 (d) and 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).

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent 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 effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" wastewater effluent flow assumptions through imposition of permit conditions for effluent flow.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). A condition on the discharge designed to ensure the WQBEL and reasonable potential calculations account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§ 402 and 301 and

[1] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 CFR §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.,* 14 E.A.D. 577. 599 (EAB 2010). EPA guidance directs that this "reasonable potential: analysis be based on "worst-case" conditions. *See In re Washington Aquaduct Water Supply Sys. 11 E.A.D. 565, 584 (EAB 2004)*

implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. 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 CFR § 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.

EPA has also included the 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 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. 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

CWA § 304(a)(1), 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 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 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 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit 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 analytical methods approved under 40 CFR Part 126 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data

[2] Fed. Reg. 49,001 (Aug 19, 2014).
[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* Fed. Reg. 49,001 (Aug. 19, 2014).

Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[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 Standard Conditions

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include with less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2005 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

Since the Permittee has operated its Facility properly with regards to reducing copper, an exception to the CWA's anti-backsliding provision applies and that allows an increase in the copper WQBEL. *See* CWA § 402(o). This provision specifies that a less stringent effluent may be applicable if "Information is available which was not available at the time of permit issuance (other than revised regulations, guidance or test methods) and which would have justified the application of less stringent effluent limitation at the time of permit issuance". EPA finds that the new criteria, calculated with new site-specific hardness data, and the new 7Q10 flow constitute such newly available information.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and the outfall 001 to the Assabet River are shown in Figure 1. The latitude and longitude of the outfall is 42.28ºN, 71.64ºW.

Westborough Wastewater Treatment Facility (Westborough WWTF) is an advanced wastewater

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

treatment facility that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 14,400 residents in the Town of Westborough (about 75% of the town's population), 26,826 residents in the Town of Shrewsbury (about 72% of the town's population), and 3,500 residents in the Town of Hopkinton (about 19% of the town's population).

The Facility has a design flow of 7.68 MGD; the annual average daily flow reported in the 2010 application was 6.91 MGD, and the median annual rolling average for the last 5 years was 5.35 MGD. The system is a separate system with no combined sewers. Wastewater is composed of mostly domestic sewage with some commercial sewage and some septage.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from April 2015 through March 2020 is provided in Appendix A of this Fact Sheet.

Additionally, EPA is retaining two co-permittees to the Draft Permit. The towns of Shrewsbury and Hopkinton, Massachusetts own and operate sanitary wastewater collection systems that discharge flows to the Westborough WWTF for treatment. These municipalities are co-permittees for certain activities pertaining to proper operation and maintenance of their respective collection systems (*See* Part I.C. and I.D of the Draft Permit). Adding them to the Draft Permit ensures that they comply with requirements to operate and maintain the collection systems so as to avoid discharges of sewage from the collection systems. These co-permittees did not apply for permit coverage; with letters sent November 3, 2015, EPA waived application requirements for the two co-permittees. The legal basis for including municipal satellite collection systems as co-permittees is described in *In re Charles River Pollution Control District*, 16 E.A.D. 623 (EAB 2015)[5].

The POTW has an industrial pretreatment program (IPP). There are seven significant industrial users, as summarized in Table 1.

[5] The decision is available at:
https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/$File/Charles%20River%20Decision%20Vol%2016.pdf

Table 1: Pretreating Industrial Users

Industrial User	Address
Advanced Micro Sensors	333 South St. Shrewsbury, MA 01545
Astra Zeneca	50 Otis St. Westborough, MA 01581
G.E. Healthcare Bio-Sciences Corporation	14 Walkup Dr. Westborough, MA 01581
Kopin Corporation	125 North Dr. Westborough, MA 01581
Town of Shrewsbury (Landfill)	100 Maple Ave. Shrewsbury, MA 01545
Supercon	830 Boston Turnpike Shrewsbury, MA 01545
Lonza Biologics Incorporated	97/99 South St. Hopkinton, MA 01748

3.1.1 Treatment Process Description

The Westborough Wastewater Treatment Facility (WWTF) is an advanced treatment plant. Influent flows from Shrewsbury, Hopkinton, and Westborough are measured separately at three Parshall flumes, added, totalized, and recorded in the control room. Westborough's flow is pumped from the influent wet well to the headworks, while Hopkinton and Shrewsbury's flow enter the headworks at ground level through a siphon. Mechanical bar screens remove large debris from the wastewater stream to protect downstream process equipment. Grit from the aerated grit chamber is pumped to cyclone classifiers for removal and washing before disposal. Flow equalization basins are used intermittently to hold and aerate up to one million gallons of wastewater during peak flow conditions to avoid hydraulic overloads on the treatment process.

The primary clarifiers allow heavy solids (primary sludge) to settle out of solution. Floatable material is skimmed from the surface and collected in scum wells. Flow from the primary clarifiers is mixed with activated sludge in a two-part, multichannel oxidation basin; a selector basin encourages anoxic treatment prior to full aerobic treatment; disc aerators provide oxygen to the mixed liquor to enable the biological treatment process to occur and to maintain the solids in complete suspension; the microbiological population in the activated sludge feeds on the organic material suspended in the wastewater, and mixed liquor from the multichannel oxidation system is allowed to settle in the secondary clarifiers. The majority of activated sludge that settles out of solution is returned to the multichannel tank to sustain the biological treatment process.

Effluent from the secondary clarifiers is agitated for up to two hours with polyaluminum chloride (PAC); phosphates adhere to the PAC; the wastewater is distributed over a sand bed; the filtered wastewater collects in the underdrains, and then it is filtered again in separate filtration basins. The filters are cleaned by an automatic backwash system. After exiting filtration, the flow is treated with UV light for disinfection. A step cascade adds dissolved oxygen to the effluent prior to discharge.

Primary sludge and scum are pumped from the bottom of the primary clarifiers to settle in gravity thickeners, followed by further thickening in a two-meter gravity belt thickener. Waste activated sludge is pumped from the bottom of the secondary clarifiers to the gravity belt thickener. The sludge is thickened with the aid of polymer (Clarifloc E-6266). Thickened primary and waste activated sludge are mixed together in a circular tank by a rotating paddle agitator. The blended sludge is pumped to tank trucks for disposal off-site. It is sent to Upper Blackstone Treatment Plant for incineration. According to the Facility's 2010 application, the average mass of sludge shipped in 2009 was 1,761.3 metric tons. A flow diagram of the Treatment Facility is shown in Figure 2.

3.1.2 Collection System Description

Westborough WWTF is served by separate sewer systems. 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 a local water body.

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4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Westborough WWTF discharges through Outfall 001 into the Assabet River, a tributary of the Merrimack River, within Segment MA82B-02. This segment is 3.8 miles in length and travels from the Westborough WWTF to the Route 20 Dam in Northborough, MA. The Assabet River is part of the Concord Watershed (also known as the SuAsCo, Sudbury, Assabet and Concord Watershed), which flows to the Merrimack River and discharges to the Merrimack River Estuary in Newburyport, MA.

The Assabet River has been classified as a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations ("CMR") 4.05(4)(a). The MA WQS at 314 CMR 4.05(3)(b) state that Class B, "*waters are designated as 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. They shall be a source of public water supply (i.e., where designated and with appropriate treatment). They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. They shall also have consistently good aesthetic value*."

The Assabet River, segment MA82B-02, is listed in the final *Massachusetts Year 2016 Integrated List of Waters* ("303(d) List"), as a Category 5 "Waters Requiring a TMDL."[6] The impairments requiring a TMDL are aquatic plants (macrophytes), algae, benthic macroinvertebrates, dissolved oxygen, *Escherichia coli* (*E. coli*), fecal coliform, nutrient/eutrophication biological indicators, and phosphorus (total). A TMDL for Total

[6] *Massachusetts Year 2016 Integrated List of Waters,* MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, December 2019.

Phosphorus in the Assabet River[7] was submitted by MassDEP and approved by EPA in 2004.[8] The status of each designated use is presented in Table 2.

Table 2: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Impaired Causes: total phosphorus, nutrients/eutrophication biological indicators, combined biota/habitat bioassessments, dissolved oxygen saturation (Suspected causes: ambient bioassay-chronic Sources: Municipal point source discharge, impacts from Hydrostructure flow regulation/modification) (Suspected Sources: Golf courses, yard maintenance, discharges from municipal separate storm sewer system (MS4s), internal nutrient recycling)
Aesthetics	Support
Primary Contact Recreation	Not Assessed
Secondary Contact Recreation	Not Assessed
Fish Consumption	Not Assessed

According to the *SuAsCo Watershed 2001 Water Quality Assessment Report*[9], this water body segment is not attaining uses designated for fish, other aquatic life and wildlife, attaining designated use for aesthetics, and designated uses for primary and secondary contact recreation, and fish consumption have not been assessed. However, the Assabet River is included under the Massachusetts Department of Public Health statewide fish consumption advisory for freshwater fish for mercury.[10]

In 1989, the Massachusetts Department of Environmental Quality Engineering ("DEQE") published the Assabet River Basin Water Quality Management Plan, which included a wasteload allocation ("WLA")[11] for Westborough WWTF. Given the limited assimilative capacity of the receiving waters, limits more stringent than secondary treatment requirements were required for BOD_5 and TSS in Table 3.

[7] *Assabet River Total Maximum Daily Load for Total Phosphorus, SuAsCo Watershed, Massachusetts*, MassDEP, Division of Watershed Management, Worcester, MA, 2004.
[8] Letter from Linda Murphy, EPA to Robert W. Golledge, Jr. MassDEP, September 23, 2004.
[9] SuAsCo 2001Water Quality Assessment Report. MassDEP Division of Watershed Management, Worcester, Massachusetts; August 2005, Report Number 82-AC-1
[10] Freshwater Fish Consumption Advisory, Massachusetts Department of Public Health, Bureau of Environmental Health; https://www.mass.gov/lists/fish-consumption-advisories#advisories-
[11] Massachusetts Department of Environmental Quality Engineering (DEQE), *Assabet River Basin Water Quality Management Plan*, 1989, page 39-40.

Table 3: Limits in 1989 MA DEQE Wasteload Allocation

Season	Flow (MGD)	BOD_5 (mg/L)	TSS (mg/L)	Ammonia Nitrogen* (mg/L)	Total Phosphorus* (mg/L)	Dissolved Oxygen (mg/L)
Summer* (April 1 – October 15)	7.68	10	15	1.0	-	6.0

*WLA apply the limits only April 1-October 15. MassDEP has revised the "summer" or "growing season" for ammonia as June 1 through October 31. EPA has adopted these dates in applying the WLA limits unless backsliding would occur.

The 2004 TMDL for Total Phosphorus in the Assabet River calls for stringent control of point source discharges of phosphorus from POTWs in combination with a 90% reduction in sediment phosphorus loads. The TMDL established effluent limits of 0.1 mg/L for the POTW discharges to the Assabet River during the growing season. The limits for the Westborough WWTF are found in Table 4.

Table 4: Total Phosphorus Limits for the Westborough WWTF in the 2004 TMDL

			POTW Effluent Limits Total Phosphorus, mg/L April 1-October 31		**POTW Effluent Limits Total Phosphorus, mg/L November 1-March 31**
POTW	**NPDES**	**Design Flow, MGD**	**mg/L**	**lbs/day @ design flow**	**mg/L and lbs/day**
Westborough	MA0100412	7.68	0.10	6.4	Optimize for particulate phosphorus removal and monitor and report for total and dissolved phosphorus concentration

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the outfall that is referenced in this Fact Sheet can be found in Appendix A of this Fact Sheet.

4.3 Available Dilution

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.[12] The critical flow in rivers and streams is some measure of the low flow of that river or stream. Massachusetts WQSs require that "for rivers and streams, the lowest condition is the lowest

[12] EPA Permit Writer's Manual, Section 6.2.4

mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10)." *See* 314 CMR 4.03(3)(a).

EPA, using SWToolbox[13], calculated the 7Q10 for the Assabet River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gaging station to the Facility along the Assabet River (USGS 01097000 near Maynard, MA[14]) which is downstream of the Westborough WWTF. The 7Q10 at USGS 01097000 for the period April 1, 1989 through March 31, 2019 is 11.7 cubic feet per second (cfs).

The Facility's discharge is located about 1.2 miles downstream from the headwaters of the Assabet River[15], which joins the Concord River about 30.6 miles downstream of the discharge.[16] The total drainage area for the Assabet River watershed up to USGS gage number 01097000 is approximately 109 square miles; the drainage area upstream of the discharge is approximately 8.39 square miles.[17]

The lowest flow in the Assabet River during the 7Q10 review period occurred during July 2016 (14.68 cfs). During July 2016, the sum of average discharges from facilities upstream of the USGS gage (including Westborough WWTF) was 11.22 cfs (Hudson WWTF discharge = 1.53 cfs, Marlborough Westerly WWTF = 2.17 cfs, Westborough WWTF discharge = 7.52 cfs). Subtracting the sum of these discharges (11.22 cfs) from the 7Q10 at the gage (11.7 cfs) yields a base flow of 0.48 cfs.

Base flow at USGS #01097000 = 11.7 cfs – 11.22 cfs = 0.48 cfs

Total Drainage Area for USGS #01097000 = 109 square miles

$$Flow\ factor\ for\ USGS\ \#01097000 = \frac{0.48\ cfs}{109\ square\ miles} = 0.004\ cfs/sq.mi.$$

Estimate of Drainage Area Upstream of Westborough WWTF = 8.39 square miles

$$Base\ Flow_{Effluent} = Flow\ factor\ \times Upstream\ Drainage\ Area$$

$$Base\ Flow_{Effluent} = \left(0.004\frac{cfs}{mi^2}\right)(8.39\ mi^2) = 0.034\ cfs$$

Using a low-flow factor of 0.004 cfs per square mile yields a receiving water 7Q10 flow of about 0.034 cfs or 0.022 mgd or 22,000 gallons per day. The 7Q10 was interpreted as negligible (0 cfs) due to its low value and to stay consistent with the analysis in the 2005 permit issuance.

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[13] SWToolbox: A Surface-Water Toolbox for Statistical Analysis of Streamflow Time Series https://doi.org/10.3133/tm4A11

[14] USGS StreamStats National Data Collection Station Report for Station 01097000; https://streamstatsags.cr.usgs.gov/gagepages/html/01097000.htm

[15] SuAsCo Watershed 2001Water Quality Assessment Report. 2005. MassDEP

[16] SuAsCo Watershed 2001Water Quality Assessment Report. 2005. MassDEP

[17] EPA. 2005. *Westborough WWTF Fact Sheet* (NPDES Permit No. MA0100412

The dilution factor (DF) at the 7Q10 flow of 0 gallons per day in the receiving water upstream of the discharge, Q_s, and the Facility's design flow of 7.68 MGD, Q_d, was calculated as shown below:

$$DF = (Q_s + Q_d)/Q_d = (0.022 \text{ MGD} + 7.68 \text{ MGD})/7.68 \text{ MGD} \approx 1.0$$

State WQSs specify that "the Department will establish extreme hydrological conditions at which aquatic life criteria must be applied on a case-by-case basis. In all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses". 314 CMR 4.03(3)(c). The State determined that the dilution factor for the Facility is zero (i.e. 1:1). EPA used this dilution factor (DF) in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

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 its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from April 2015 to March 2020 (the "review period") were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* **Appendix A)**.The reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

5.1.1 Effluent Flow

The effluent flow limit in the 2005 Permit is 7.68 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 7.68 MGD flow limit from the 2005 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 summer BOD_5 limits in the 2005 Permit (effective April 1 through October 31) were established in the Massachusetts 1989 wasteload allocation (WLA)[18]; the average monthly limit is 10 mg/L, the average weekly limit is 10 mg/L and the maximum daily limit is 15 mg/L. The winter $CBOD_5$ limits in the 2005 Permit (effective November 1 through March 31) were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 25 mg/L, the average weekly limit is 40 mg/L, and a maximum daily reporting requirement is included.

The DMR data during the review period shows that there was one violation of average weekly BOD_5 concentration limits in April 2016.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2020 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The change from $CBOD_5$ in the winter to BOD_5 is to be consistent with the 1989 WLA. The monitoring frequency remains three times per week.

5.1.2.2 BOD_5 Mass Limits

The summer mass-based BOD_5 limits in the 2005 Permit of 640 lb/day (average monthly) and 640 lb/day (average weekly) were based on the 1989 concentration based WLAs and the design flow of the Facility. The winter mass-based BOD_5 limits of 1600 lb/day (average monthly) and 2560 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data from the review period shows that there have been no violations of BOD_5 or $CBOD_5$ mass limits.

As there have been no changes to the WLA or the secondary treatment standards, the BOD_5 mass-based limits in the 2005 Permit have been continued in the Draft Permit. The change from $CBOD_5$ in the winter to BOD_5 is to be consistent with the 1989 WLA. The monitoring frequency remains three times per week.

BOD_5 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:

[18] Massachusetts Department of Environmental Quality Engineering, *Small River Basin Water Quality Management Plan,* 1981, page 40.

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 at the time of 1989 WLA
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Summer Limits:
Average Monthly: 10 mg/L * 7.68 MGD * 8.34 = 640 lb/day
Average Weekly: 10 mg/L* 7.68 MGD * 8.34 = 640 lb/day

Winter Limits:
Average Monthly: 25 mg/L * 7.68 MGD * 8.34 = 1600 lb/day
Average Weekly: 40 mg/L * 7.68 MGD * 8.34 = 2560 lb/day

5.1.3 Total Suspended Solids (TSS)

Solids could include inorganic (e.g. silt, sand, clay and insoluble hydrated metal oxides) and organic matter (e.g. flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection and asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

5.1.3.1 TSS Concentration Limits

The summer TSS limits in the 2005 Permit (effective April 1 through October 31) were established in the Massachusetts 1989 wasteload allocation (WLA)[19]; the average monthly limit is 15 mg/L, the average weekly limit is 15 mg/L and maximum daily limit of 25 mg/L. The winter TSS limits in the 2005 Permit (effective November 1 through March 31) were based on the secondary treatment standards in 40 CFR § 133.102; the average monthly limit is 30 mg/L, the average weekly limit is 45 mg/L.

The DMR data during the review period shows that there have been no violations of TSS concentration limits.

The Draft Permit proposes the same TSS concentration limits as in the 2005 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains three times per week.

[19] Massachusetts Department of Environmental Quality Engineering, Assabet River D. Water Quality Management Plan 1989, page 40 and 41.

5.1.3.2 TSS Mass Limits

The summer mass-based TSS limits in the 2005 Permit of 960 lb/day (average monthly) and 960 lb/day (average weekly) were based on the 1989 concentration based WLAs and the design flow of the Facility. The winter mass-based limits of 1,920 lb/day (average monthly) and 2,880 lb/day (average weekly) were based on EPA's secondary treatment standards and the design flow of the Facility.

The DMR data during the review period shows that there have been no violations of TSS mass limits.

As there have been no changes to the WLA or the secondary treatment standards, the TSS mass-based limits in the 2005 Permit have been continued in the Draft Permit. The monitoring frequency remains three times per week.

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 at the time of 1989 WLA
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Summer Limits:
Average Monthly: 15 mg/L * 7.68 MGD * 8.34 = 960 lb/day
Average Weekly: 15 mg/L * 7.68 MGD * 8.34 = 960 lb/day

Winter Limits:
Average Monthly: 30 mg/L * 7.68 MGD * 8.34 = 1,920 lb/day
Average Weekly: 45 mg/L * 7.68 MGD * 8.34 = 2,880 lb/day

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

In accordance with the provisions of 40 CFR § 133.102(a)(3) and (b)(3), the 2005 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 shows that the median BOD_5 and TSS removal percentages are 99% and 99%, 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. In accordance with the provisions of 40 CFR § 133.102(a)(3).

5.1.5 pH

The hydrogen ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

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 show that there have been no violations of the pH limitations.

The pH requirements in the 2005 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.6 Bacteria

The 2005 Permit includes effluent limitations for bacteria using fecal coliform bacteria as the indicator bacteria with a monthly limit of 200 colony forming units (cfu)/100 mL and a daily maximum limit of 400 cfu/100 mL. These limits were based on the applicable WQS at the time the permit was issued. There were no violations of the fecal coliform bacteria limits during the review period.

Consistent with Massachusetts' new bacteria criteria at 314 CMR 4.05 (3)(b) 4.b, which were approved by EPA on September 19, 2007, the bacteria limits for *E. coli* proposed in the Draft Permit are 126 colonies/100 mL as a geometric mean and 409 colonies/100 mL maximum daily value (this is the 90% distribution of the geometric mean of 126 colonies/100 mL[20]). The bacteria limits apply year-round and the monitoring frequency is three times per week. Due to the change in the Massachusetts bacteria criteria, there are no effluent limits or monitoring requirements for fecal coliform in the Draft Permit.

5.1.7 Dissolved Oxygen

The 2005 Permit includes a dissolved oxygen minimum limit of 6.0 mg/L. This requirement was established to assure that dissolved oxygen levels remain above those in the 1989 WLA, particularly during low flow periods; the 1989 WLA requires a minimum dissolved oxygen limit of 6.0 mg/L.

[20] MassDEP, "Draft 6/25/2007 Guidance on Implementation of Proposed Primary Contact Recreation Bacteria in Massachusetts Surface Water Quality Standards, 314 CMR 4.00," 2007, p. 11, Table 2.

The DMR data during the review period show that there have been no violations of the DO limitations.

The Draft Permit proposes a dissolved oxygen limit of 6.0 mg/L to be consistent with the WLA.

5.1.8 Total Residual Chlorine

The Permittee used chlorine disinfection until upgrades in 2011 transitioned the Facility to UV disinfection. The 2005 Permit includes effluent limitations for total residual chlorine (TRC) of 11 µg/L (average monthly) and 19 µg/L (maximum daily). There have been no discharges of TRC during the data review period.

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) These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor, as follows:

Chronic criteria * dilution factor = Chronic limit
11 µg/L * 1.0 = 11 µg/L (average monthly)

Acute criteria * dilution factor = Acute limit
19 µg/L * 1.0 = 19 µg/L (maximum daily)

These limits are included in the Draft Permit and are the same as the limits in the 2005 Permit. TRC limits are only applicable when chlorine disinfection is used.

5.1.9 Ammonia

Nitrogen in the form of ammonia can reduce the receiving a stream's dissolved oxygen concentration through nitrification and can be toxic to aquatic life, particularly at elevated temperatures.

The 2005 Permit includes effluent limitations of 1.0 mg/L for both average monthly and average weekly and 1.5 mg/L for maximum daily for ammonia during the warm weather season (June 1 through October 31). The average monthly and average weekly limits were established in the 1989 WLA.[21] The maximum daily limit of 1.5 mg/L has been carried forward from previous permits in accordance with anti-backsliding requirements. *See* 40 CFR 122.44(l)(2)(i).

The 2005 Permit also included an average monthly limit of 8.0 mg/L during the cold weather season (November 1 through May 31) to address chronic toxicity. There are no average weekly or maximum daily limits for the cold weather season.

[21] Massachusetts Department of Environmental Quality Engineering, *Assabet River Basin Water Quality Management Plan*, 1989, page 40.

The DMR data for the review period shows there were no violations of either the warm or cold weather seasonal ammonia limits.

The ammonia criteria in EPA's *National Recommended Water Quality Criteria*, 2002 (EPA 822-R-02-047) document are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). The freshwater acute criterion is dependent on pH and the freshwater chronic criterion is dependent on pH, temperature and whether early life stages of fish are present in the receiving water.

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA used the mass balance equation presented in Appendix B for both warm and cold weather conditions to project the ammonia concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

EPA notes that since the 2005 Permit already contained a limit for ammonia, a reasonable potential determination is not applicable, so the table in Appendix B 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. However, 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).

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.3 S.U. Additionally, the Merrimack River, including the Assabet and Concord Rivers, are designated EFH for Atlantic salmon (*Salmo salar*)[22]. Although the Facility's discharge is located in the upper reaches of the Assabet River, EPA has taken the conservative approach and determined that one or more lifestages of Atlantic salmon may be present within the area that encompasses the discharge site.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is reasonable potential; so the Draft Permit requires ammonia limits. Effluent and ambient monitoring for ammonia will continue to be required in the quarterly WET tests.

The Draft Permit carries forward the average monthly limit of 1.0 mg/L, the average weekly limit of 1.0 mg/L, and the maximum daily limit of 1.5 mg/L from the 2005 Permit during the warm weather months. The Draft Permit also includes a revised average monthly limit of 5.1 mg/L for the cold weather period (November 1 - March 31) and a reporting requirement for the

[22] NOAA EFH Mapper available at: http://www.habitat.noaa.gov/protection/efh/efhmapper/

average weekly ammonia concentration. The monitoring frequencies remain the same as those in the 2005 Permit. The monitoring frequency is twice per week during the warm weather period and once per week during the cold weather period.

5.1.10 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.

5.1.10.1 Total Nitrogen

Merrimack River watershed, which includes the Assabet River, is a largely and densely populated watershed, including 40 POTW discharges in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion. Nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicate elevated total nitrogen and chlorophyll 'a' levels. High nutrient concentrations can lead to increased levels of chlorophyll 'a'; therefore, chlorophyll 'a' can be an indicator of elevated nutrient concentrations. In samples with salinity greater than 10 ppt, total nitrogen ranged from 0.442 to 1.67 mg/L while chlorophyll 'a' ranged from 4 to 42 ppt[23]. EPA collected samples on the outgoing tide in 2017 in this area and found total nitrogen levels in the range of 0.62 mg/L to 1.3 mg/L and chlorophyll 'a' ranging from 2 to 11 ppt in samples with salinity greater than 10 ppt.

EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of these results are outside the range typically found in healthy estuaries in Massachusetts. However, more data is necessary to determine whether there is reasonable potential for nitrogen discharges from the Facility to cause or contribute to a violation of the Massachusetts narrative nutrient criteria in the Merrimack River estuary, particularly data that characterizes aquatic life designated uses that may be affected in this area so that the narrative criteria can be interpreted numerically. In the meantime, EPA finds that quantifying the load of total nitrogen from this Facility and others in the Merrimack River watershed is an important first step to understanding the loading of nitrogen from point sources and their potential impact on the estuary.

[23] CDM Smith/US Army Corps of Engineers New England District, *Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017*, Appendix C.

The Draft Permit includes a weekly monitoring and reporting requirement for total nitrate + nitrite, total Kjeldahl nitrogen, and total nitrogen during the summer (April 1 – October 31) and monthly monitoring for the same parameters during the winter (November 1 – March 31). The monitoring data will provide additional information on the fate of nitrogen through the treatment process and its impact to the Merrimack River estuary. EPA recommends the Town factor in treatment methods to reduce nitrogen in the effluent for any planned upgrades at the treatment plant, as nitrogen limits may be included in subsequent permits.

5.1.10.2 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.

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]).

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 developed 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. 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 the Assabet River, the 0.1 mg/L would apply downstream of the discharge.

More recently, 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. The WWTF is located within Ecoregion XIV, Eastern Coastal Plains. 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 XIV (EPA December 2000) is 31.25 µg/L (0.03125 mg/L).

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

The Massachusetts Integrated List of Waters, prepared to satisfy Sections 303(d) and 305(b) of the Clean Water Act, lists the Assabet River as not achieving water quality standards for several nutrient-related pollutants, including dissolved oxygen, aquatic macroinvertebrate bioassessments, aquatic plants (macrophytes), excess algal growth, fish bioassessments, and phosphorus (total). In addition to receiving wastewater flow from four POTWs located in Westborough, Marlborough, Hudson, and Maynard, the Assabet River also has multiple dams, which compound nutrient-related water quality violations by creating sinks of phosphorus that accumulate in sediments. A significant amount of this phosphorus in the sediments recycles into the water column during the critical growing period.

In addition to waste load allocations for the four POTW discharges, the TMDL approved in 2004 required a 90% reduction in the phosphorus load from sediments in impoundments, referred to as sediment flux reduction. The TMDL anticipated that if the necessary sediment flux reductions were not achieved, the growing season phosphorus limitations for the four POTW discharges would need to be further reduced. For example, if only a 75% reduction in phosphorus loading was achieved, the POTW phosphorus limitations would need to be reduced to at least 0.025 mg/L (TMDL page 29).

Following approval of the 2004 TMDL, a study was conducted by the Army Corps of Engineers (COE)[24] to consider methods for achieving the necessary sediment reductions, including dredging and dam removal. The study concluded that dam removal was the best alternative for addressing the ongoing source of phosphorus from the sediments and to restore a healthy riverine aquatic community. EPA is not aware of any effort underway towards removing any dams or other means of reducing the total phosphorus sediment load.

The COE study also concluded that TMDL-required point source reductions alone would achieve approximately 60% reduction in phosphorus load in sediments along the riverbed. Although not specifically part of the COE study, a phosphorus flux model developed for the study indicated

[24] Department of Army, New England District, U.S. Army Corps of Engineers 2010. Planning Assistance to States Program, Assabet River, Massachusetts Sediment and Dam Removal Feasibility Study.

that winter phosphorus loading may also have a significant effect on summer sediment flux rates. The flux model stated phosphorus discharged from the WWTFs during the winter had a very significant impact on the phosphorus flux the following summer. The flux model indicated that the high phosphorus in the water column would adsorb on to the sediment material during the winter months. During the simulation when WWTFs reduced the concentration of phosphorus discharged in the late spring, the river sediment had a high phosphorus content from the winter, and the sediment released it back to the water column. Results of this study indicate that the high summer phosphorus flux is due to not only the algal settling and cycling through the sediment, but also high phosphorus in the sediment from the winter conditions.[25]

The last of the four Assabet River wastewater treatment facility upgrades to achieve the 0.1 mg/L phosphorus limit was completed in early 2012. US EPA Region 1 conducted water quality sampling of the Assabet River during summer low flow conditions in 2012 to determine changes in water quality as a result of the treatment facility upgrades.[26] The data indicate that the Assabet River is still severely impaired, including elevated concentrations of phosphorus with the highest concentrations occurring near the bottom, large quantities of plant biomass, and frequent occurrences of supersaturated dissolved oxygen levels with associated pH criteria violations.

The MassDEP also surveyed the river during the summer of 2012 to determine the extent of Duckweed growth in the impoundments. The survey confirmed levels of Duckweed in the Assabet River impoundments remain excessive. Consequently, the receiving water continues to exceed water quality standards.

The 2005 Permit has an average monthly limit of 0.1 mg/L from May 1 to October 31, reported as a 60-day rolling average, and an average monthly limit of 1.0 mg/L from November 1 to March 31, reported as an average monthly limit. The 2005 Permit also has an average monthly limit of 0.1 mg/L, reported as a median, and a maximum daily limit of 0.2 mg/L, reported as a daily maximum, in the month of April. The effluent limits in the 2005 Permit are based on a TMDL wasteload allocation approved by EPA in 2004.[27] The 2005 Permit also includes a monitoring and reporting requirement for ortho-phosphorus from November 1 through March 31.

The Facility had no violations of its total phosphorus limits. See Appendix A.

The sediment phosphorus flux in the Assabet River has not been reduced, as required in the 2004 Total Phosphorous TMDL, and since the winter phosphorus loading may also have a significant effect on summer sediment flux rates and eutrophication, the Draft Permit includes an average monthly total phosphorus limit of 0.1 mg/L for April 1 through October 31. The averaging period has been changed from reporting a median in April and 60-day rolling average from May through October to reporting an average monthly concentration from April through October. This is consistent with 40 C.F.R.§ 122.45(d)(2), which requires that limitations for POTWs be established as average weekly and average monthly limitations unless impracticable. An average

[25] CDM 2008. Assabet River Sediment and Dam Removal Study, Modeling Report, June 2008.
[26] Faber, Tom. 2013. Assabet River Water Quality Survey, July 10-13, 2012, Data Report. USEPA New England Regional Laboratory.
[27] Massachusetts Department of Environmental Protection (MassDEP). 2004. *Assabet River Total Maximum Daily Load for Total Phosphorus*. Report Number: MA82B-01-2004-01 Control Number CN 201.0.

monthly total phosphorus limit of 0.2 mg/L for November 1 through March 31 is included in the Draft Permit. This is consistent with the technology based Highest and Best Practical Treatment requirement in the MA SWQS at 314 CMR 4.05(c).[28]

The monitoring and reporting orthophosphorus requirement is no longer a requirement in the Draft Permit. EPA's intention in requiring winter orthophosphorus monitoring was to verify the assumption that the vast majority of the phosphorus discharges would be in the dissolved phase. It was EPA's determination at the time that the non-particulate orthophosphorus would pass through the river system and not accumulate in the sediments. However, since the last permit was issued, a 2008 study of the total phosphorus in sediments in the Assabet River indicated that winter phosphorus loadings do accumulate in the sediment. Given that both dissolved and particulate phosphorus contribute to water quality impairments, EPA has determined that total phosphorus is the appropriate focus and cannot find reason to continue monitoring orthophosphorus in the wintertime or add such monitoring in the summertime. Therefore, EPA has removed the orthophosphorus monitoring requirement that was in the 2005 Permit.

The Draft Permit also includes an ambient monitoring requirement to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle.

Since the current Treatment Facility will be unable to achieve the cold weather effluent limit of 0.2 mg/L without changes to the treatment process, the Draft Permit proposes a 1-year schedule of compliance with an interim total phosphorus limit of 1 mg/L in the Draft Permit. A schedule of compliance to achieve 0.2 mg/L is detailed in the Draft Permit, *See* Part I.G.2.

Schedules of compliance to meet water quality-based effluent limits may be included in permits only when the state's water quality standards clearly authorize such schedules and where the limits are established to meet a water quality standard that is either newly adopted, revised, or interpreted after July 1, 1977. Massachusetts regulations for schedules of compliance can be found at 314 CMR 3.11(10). Finally, the permitting authority must make a reasonable determination that a schedule of compliance is "appropriate" and that the schedule proposed requires compliance "as soon as possible." *See* 40 CFR §122.47(a), §122.47(a)(1).

5.1.11 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 2005 Permit for these metals continue to be protective, given the updated upstream hydrologic and chemical characteristics of the receiving water. The 2005 Permit included effluent limits for copper and reporting requirements for aluminum, lead and zinc. A summary of recent metals compliance and monitoring results is provided in Appendix A.

[28] 314 CMR 4.00: Massachusetts Surface Water Quality Standards

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

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 the Assabet River downstream of the treatment plant is calculated using the critical low flow (7Q10), the design flow of the treatment plant, and the median hardness for both the receiving water upstream of the discharge and the treatment plant effluent. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 260 mg/L and the corresponding criteria are also presented in Appendix B.

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

5.1.11.2 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, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the 2005 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. However, 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 B. As shown in Appendix B, the Draft Permit must include limits for aluminum and copper. The chronic (average monthly)

aluminum limit and chronic (average monthly) copper limit. The acute (daily maximum) copper limit is a newly established limit to meet WQS based on recent data.

5.1.11.3 Copper

The 2005 Permit includes effluent limitations of 9 µg/L (average monthly) and 14 µg/L (maximum daily) for copper. These limits were based on an assumed default hardness of 100 mg/L and a dilution factor of 1.0. Due to the facility's inability to meet these limits, EPA issued an Administrative Order to achieve an average monthly copper limit of 20 µg/L and report the maximum daily copper concentration. The DMR data during the review period show there were no violations of the 20 µg/L average monthly limit. See Appendix A of this Fact Sheet.

The Draft Permit proposes a chronic (average monthly) and an acute (maximum daily) copper limits of 16 µg/L that are less stringent than the average monthly and maximum daily copper limits in the 2005 Permit. See Appendix B. The proposed copper limits in the Draft Permit were calculated with a revised hardness of 260 mg/L downstream of the discharge. Backsliding is allowed in this case and is based on the anti-backsliding exception found at 40 CFR § 122.44(l)(2)(i)(E) because the Permittee has properly operated and maintained the facility but has nevertheless been unable to achieve the previous effluent limitation. Therefore, the limit is able to backslide to the most stringent of either (1) the new effluent concentration (C_d) determined to meet WQS under present conditions or (2) the level of compliance achieved by the facility (based on the 95th percentile of the effluent data). In this case, the new limit is based on level of compliance achieved by the facility (based on the 95th percentile of the effluent data).

5.1.11.4 Aluminum

The 2005 Permit includes a monitoring requirement for average monthly and maximum daily total recoverable aluminum. The Draft Permit includes an average monthly limit of 87 µg/L and a monitoring requirement for the maximum daily total recoverable aluminum. The monitoring frequency remains once per month. See Appendix B.

<u>Aluminum Compliance Schedule:</u>
The final aluminum effluent limit is based on current Massachusetts, EPA approved, aluminum criteria to protect freshwater aquatic life. However, EPA is aware of ongoing efforts by MassDEP to soon revise the Massachusetts aluminum criteria based, at least in part, on new EPA aluminum criteria recommendations which are expected to be finalized within the coming months. MassDEP has informed EPA that it expects to propose the revisions to its aluminum criteria in 2019. For three years after the effective date of the permit, MassDEP will inform EPA at reasonable intervals of its progress on the development and promulgation of new aluminum criteria.

EPA's draft aluminum criteria recommendations indicate that the new aluminum criteria recommendations may be higher than the current recommendations. Because MassDEP has indicated to EPA that its planned revisions to its aluminum criteria will be based on EPA's recommended criteria, EPA reasonably expects its new criteria may also be higher. EPA has

therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 CFR § 122.47, in the draft permit which provides the permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the permittee may apply for a permit modification to allow additional time for compliance if Massachusetts has adopted new aluminum criteria but has not yet submitted the criteria to EPA for review or EPA has not yet acted on the new criteria. If new aluminum criteria are adopted by Massachusetts and approved by EPA, and before the final aluminum effluent limit goes into effect, the permittee may apply for a permit modification to amend the permit based on the new criteria. If warranted by the new criteria and a reasonable potential analysis, EPA may relax or remove the effluent limit to the extent consistent with anti-degradation requirements. Such a relaxation or removal would not trigger anti-backsliding requirements as those requirements do not apply to effluent limits which have yet to take effect pursuant to a schedule of compliance. *See American Iron and Steel Institute v. EPA*, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997) ("EPA interprets § 402 to allow later relaxation of [an effluent limit] so long as the limit has yet become effective.")

5.1.11.5 Lead and Zinc

The 2005 Permit includes a monitoring requirement for average monthly and maximum daily total zinc and total lead. The Draft Permit does not include a monitoring and reporting requirement for lead and zinc because there is no reasonable potential to exceed MA WQS for either metal. See Appendix B.

5.1.12 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) 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 be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for "no toxics in toxic amounts". *See also* 40 CFR § 122.44(d)(1). 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 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, reasonable

potential may exist for this discharge to cause or contribute to an exceedance of the "no toxics in toxic amounts" narrative water quality standard.

In accordance with current EPA guidance and State policy[29], 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, 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 $LC_{50.}$ This policy recommends that permits for discharges having a dilution factor less than 10 require acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC_{50} limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2005 Permit are C-NOEC equal to or greater than 100% and LC_{50} equal to or greater than 100%, respectively, using the daphnid, *Ceriodaphnia dubia (C. dubia)*, as the test species. The Facility has met these limits, with one exception in June 2016, as can be seen from the DMR summary in Appendix A. It is noted that as part of the 2005 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 1.0, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the effluent limits from the 2005 Permit and the testing frequency. In accordance with the EPA guidance and State policy two test organism, the fathead minnow (*Pimephales promelas*) and the daphnid (*Ceriodaphnia dubia*), are required for each toxicity tests. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

In addition, EPA's 2018 *National Recommended Water Quality Criteria* for aluminum are calculated based on water chemistry parameters that include dissolved organic carbon (DOC), hardness and pH. Since aluminum monitoring is required as part of each WET test, an accompanying new testing and reporting requirement for DOC, in conjunction with each WET test, is warranted in order to assess potential impacts of aluminum in the receiving water.

5.1.13 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air,

[29] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters.* February 23, 1990.

soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[30] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

On January 27, 2020, Massachusetts DEP established an Office of Research and Standards Guideline (ORSG) level for drinking water that applies to the sum of the following PFAS[31,32]:

Perfluorohexanesulfonic acid (PFHxS)
Perfluoroheptanoic acid (PFHpA)
Perfluorononanoic acid (PFNA)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)
Perfluorodecanoic acid (PFDA)

Based on the ORSG, MassDEP recommends that:

1 Consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the six PFAS substances, individually or in combination, is above 20 ppt.
2 Public water suppliers take steps expeditiously to lower levels of the six PFAS individually or in combination, to below 20 ppt for all consumers.

In December 2019, MassDEP proposed revisions to 310 CMR 22.00: Drinking Water Regulation that would set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, including all six compounds addressed by the ORSG (listed above).

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

> All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2 which states:

> Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects

[30] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan*, EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf
[31] https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas
[32] https://www.mass.gov/doc/massdep-ors-guideline-for-pfas/download

> which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users, six months after appropriate, multi-lab validated test methods are made available by EPA to the public.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality based effluent limits on a facility- specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
>
> (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;".

Since an EPA method for sampling and analyzing PFAS in wastewater and sludge is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until 6 months after EPA's multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program websites. For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. For biosolids, see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids. EPA expects these methods will be available by the end of 2021.This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

5.2 Industrial Pretreatment Program

The permittee is required to administer a pretreatment program under 40 CFR part 403. *See also* CWA § 307; 40 CFR 122.44(j). The permittee's pretreatment program received EPA approval on June 30, 1989 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 CFR 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. The 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 September 1st, 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 CFR § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate,' which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. EPA maintains 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 CFR § 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 2005 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 in the Draft Permit for completing these requirements.

Because the municipalities of Shrewsbury and Hopkinton own and operate a collection system that discharge to the Facility, they have been included as co-permittees for the specific permit requirements discussed in the paragraph above. The historical background and legal framework underlying this co-permittee approach is set forth in Appendix D to this Fact Sheet, EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems.

5.6 Standard Conditions

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

6.0 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 any habitat of such species that has been designated as critical under the ESA (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 Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) 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's discharges of pollutants. The Draft Permit is intended to replace the 2005 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species and initiates consultation with the Services 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 of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this section of Assabet River (MA82B-02). There are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Westborough WWTF discharge.[33] Therefore, consultation with NOAA Fisheries under Section 7 of the ESA is not required for this discharge.

For protected species under the jurisdiction of the USFWS, one listed threatened species, the northern long-eared bat (*Myotis septentrionalis*) was identified as potentially occurring in the action area of the Westborough WWTF discharge.[34]

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[33] See §7 resources for NOAA Fisheries at https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper.

[34] See §7 resources for USFWS at https://ecos.fws.gov/ipac/.

According to the USFWS, the threatened northern long-eared bat occurs statewide and is found in "winter – mines and caves; summer – wide variety of forested habitats". This species is not aquatic, so the Facility 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 effect on this listed species and consultation with USFWS under Section 7 of the ESA is not required for this discharge.

At the beginning of the public comment period, EPA notified USFWS and NOAA Fisheries Protected Resources Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

Initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be 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 Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 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. *See* 50 CFR § 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 Federal action being considered in this case is EPA's proposed NPDES permit for the Westborough WWTF, which discharges through Outfall 001 to the Assabet River in Westborough, Massachusetts. The portion of the river receiving the discharge is river segment MA82B-02.

The Merrimack River drainage and its tributaries, including the Assabet River, are designated EFH for Atlantic salmon (*Salmo salar*)[35]. One or more lifestages of Atlantic salmon may be present within the area which encompasses the discharge site. EPA has concluded that the limits and conditions contained in the Draft Permit minimize adverse effects to Atlantic Salmon EFH for the following reasons:

EPA's Finding of all Potential Impacts to EFH Species

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The facility withdraws no water from the Assabet River, so no life stages of EFH species are vulnerable to impingement or entrainment;
- Acute toxicity tests will be conducted four times a year to ensure that the discharge does not present toxicity problems;
- Total suspended solids, biochemical oxygen demand, carbonaceous biochemical oxygen demand, *Escherichia coli*, pH, total residual chlorine, total copper, dissolved oxygen, and ammonia nitrogen are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the Westborough WWTF Draft Permit adequately protects all aquatic life, including EFH designated for Atlantic salmon in the receiving water. Further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NOAA Fisheries Habitat and Ecosystem Services Division will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

[35] NOAA EFH Mapper available at http://www.habitat.noaa.gov/protection/efh/efhmapper/

7.0 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:

Evan Lewis
EPA Region 1
5 Post Office Square, Suite 100 (06-4)
Boston, MA 02109-3912
Telephone: (617) 918-1543
Email: lewis.evan@epa.gov

Due to the COVID-19 pandemic, electronic correspondence is preferred. Prior to the close of the public comment period, any person, may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, 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 submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

8.0 Administrative Record

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any documents relating to this draft can be requested from the individual listed above.

_____
Date

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

Figure 1: Location of the Westborough WWTF

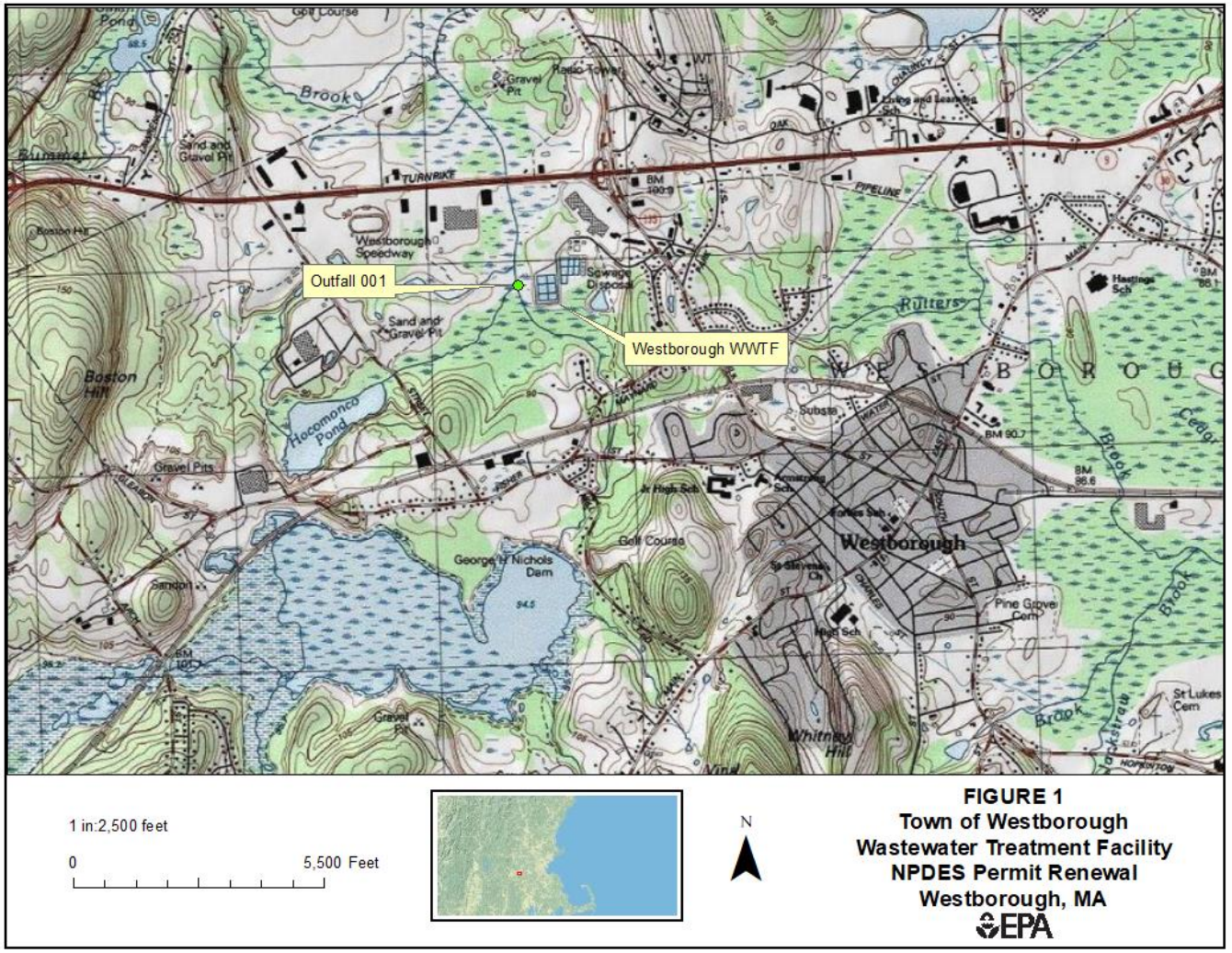
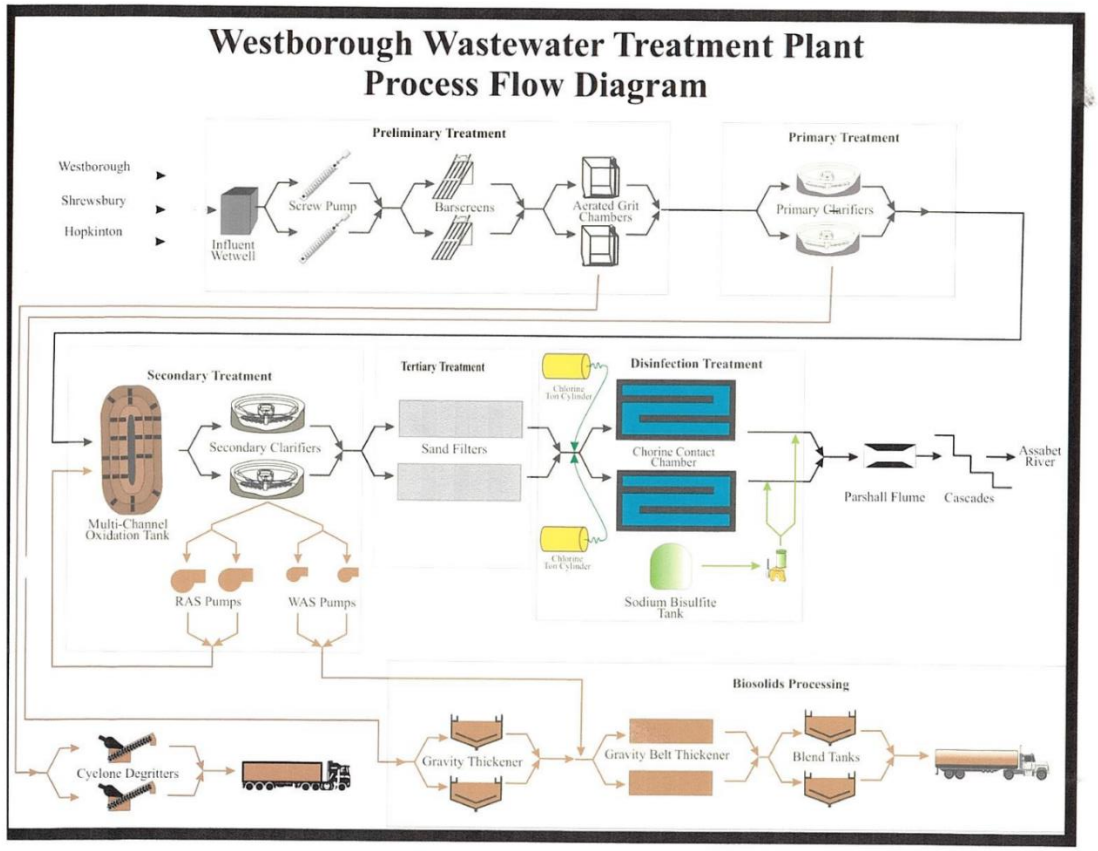


Figure 2: Flow diagram



Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	**MGD**	**MGD**	**MGD**	**lb/d**	**mg/L**	**lb/d**	**mg/L**	**mg/L**
Effluent Limit	**7.68**	**Report**	**Report**	**1600**	**25**	**2560**	**40**	**Report**
Minimum	**4.96**	**3.59**	**4.29**	**0**	**0**	**0**	**0**	**0**
Maximum	**6.05**	**9.53**	**14.83**	**43**	**4**	**95**	**7**	**7**
Median	**5.35**	**5.3095**	**6.5165**	**0**	**0**	**24**	**0**	**2**
No. of Violations	**0**	**N/A**	**N/A**	**0**	**0**	**0**	**0**	**N/A**
4/30/2015	5.35	9.4	11.79					
5/31/2015	5.29	5.69	6.77					
6/30/2015	5.34	5.87	6.97					
7/31/2015	5.36	5.58	6.42					
8/31/2015	5.41	5.01	6.19					
9/30/2015	5.42	4.59	5.59					
10/31/2015	5.41	4.17	4.58					
11/30/2015	5.38	4.15	4.75	13	0	53	0	5
12/31/2015	5.22	4.46	6.4	NODI: H	NODI: H	50	NODI: H	NODI: H
1/31/2016	5.24	4.9	6.31	NODI: H	NODI: H	0	NODI: H	NODI: H
2/29/2016	5.4	5.65	8.26	NODI: H	NODI: H	0	NODI: H	NODI: H
3/31/2016	5.39	6.18	7.09	19	4	95	7	7
4/30/2016	5.22	6.35	9.26					
5/31/2016	5.21	5.49	5.9					
6/30/2016	5.15	5.15	6.07					
7/31/2016	5.09	4.86	6.02					
8/31/2016	5.05	4.688	5.133					
9/30/2016	5.01	4.09	4.69					
10/31/2016	5.02	4.25	5.43					
11/30/2016	5.03	4.28	4.91	7	< 2	35	< 2	3
12/31/2016	5.05	4.67	6.25	19	1	50	2	4
1/31/2017	5.13	5.94	7.29	0	<= 2	0	<= 2	<= 2
2/28/2017	5.14	5.71	8.54	0	<= 2	0	<= 2	2
3/31/2017	5.09	5.59	7.95	0	< 2	0	< 2	< 2
4/30/2017	5.29	8.79	14.83					
5/31/2017	5.38	6.54	7.67					
6/30/2017	5.49	6.5	8.6					

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L	mg/L
Effluent Limit	7.68	Report	Report	1600	25	2560	40	Report
7/31/2017	5.48	4.68	5.43					
8/31/2017	5.4	3.71	4.57					
9/30/2017	5.35	3.59	4.29					
10/31/2017	5.32	3.856	7.831					
11/30/2017	5.34	4.45	5.37	19	1	46	1	4
12/31/2017	5.32	4.46	5.27	17	1	24	1	2
1/31/2018	5.236	4.962	8.001	43	1	77	2	4
2/28/2018	5.279	6.23	7.829	0	0	27	1	0
3/31/2018	5.41	7.13	12.47	14	0	61	1	3
4/30/2018	5.27	7.09	11.42					
5/31/2018	5.18	5.5	6.702					
6/30/2018	5	4.356	5.295					
7/31/2018	4.96	4.185	5.486					
8/31/2018	5.03	4.504	5.092					
9/30/2018	5.14	4.988	8.182					
10/31/2018	5.28	5.469	6.728					
11/30/2018	5.7	9.53	12.96	0	0	0	0	0
12/31/2018	5.878	6.592	9.871	0	0	0	0	0
1/31/2019	5.974	6.115	9.624	11	0	53	1	3
2/28/2019	5.94	5.823	6.549	8	0	0	0	2
3/31/2019	5.868	6.258	9.097	7	0	31	1	2
4/30/2019	5.9	7.448	12.312					
5/31/2019	5.96	6.28	8.228					
6/30/2019	6	4.842	5.303					
7/31/2019	6.05	4.7	6.226					
8/31/2019	6.02	4.221	4.661					
9/30/2019	5.95	4.063	4.659					
10/31/2019	5.85	4.319	5.896					
11/30/2019	5.442	4.647	5.589	13	0	31	1	2
12/31/2019	5.428	6.421	11.143	0	0	0	0	0
1/31/2020	5.423	6.06	8.056	0	0	0	0	0
2/29/2020	5.413	5.964	6.484	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L	mg/L
Effluent Limit	7.68	Report	Report	1600	25	2560	40	Report
3/31/2020	5.389	5.968	8.312	0	0	0	0	0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave
Units	lb/d	mg/L	lb/d	mg/L	mg/L	%	lb/d	lb/d
Effluent Limit	**640**	**10**	**640**	**10**	**15**	**85**	**1920**	**960**
Minimum	**0**	**0**	**0**	**0**	**0**	**97**	**0**	**0**
Maximum	**273**	**5**	**630**	**12**	**14**	**100**	**206**	**298**
Median	**22**	**1**	**68**	**2**	**3**	**99.81**	**87**	**103**
No. of Violations	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**
4/30/2015	77	1	177	2	5	99		298
5/31/2015	72	2	167	4	11	99		164
6/30/2015	31	1	78	2	5	99		127
7/31/2015	15	0	66	1	4	99		227
8/31/2015	11	1	44	1	3	99		162
9/30/2015	22	1	68	2	5	99		142
10/31/2015	12	0	46	1	4	99		128
11/30/2015						99	81	
12/31/2015						100	88	
1/31/2016						99	144	
2/29/2016						NODI: H	152	
3/31/2016						98	206	
4/30/2016	273	5	630	12	14	97		225
5/31/2016	106	2	194	4	6	99		205
6/30/2016	135	3	213	5	5	98		146
7/31/2016	86	2	184	4	5	99		126
8/31/2016	31	1	40	1	3	99		127
9/30/2016	24	1	59	2	3	99		99
10/31/2016	33	1	130	4	11	99		86
11/30/2016						100	87	
12/31/2016						100	90	
1/31/2017						100	128	
2/28/2017						100	134	
3/31/2017						100	169	
4/30/2017	0	< 2	0	< 2	< 2	100		244
5/31/2017	19	0	51	1	3	100		137
6/30/2017	0	< 2	0	< 2	< 2	100		202

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave
Units	lb/d	mg/L	lb/d	mg/L	mg/L	%	lb/d	lb/d
Effluent Limit	**640**	**10**	**640**	**10**	**15**	**85**	**1920**	**960**
7/31/2017	5	<= 2	21	1	2	99		149
8/31/2017	48	2	87	2	3	99		104
9/30/2017	7	< 2	73	2	3	99		91
10/31/2017	0	0	0	0	0	100		103
11/30/2017						100	106	
12/31/2017						100	88	
1/31/2018						100	133	
2/28/2018						99	139	
3/31/2018						100	68	
4/30/2018	30	0	121	1	2	99.82		61
5/31/2018	38	1	81	2	3	99.59		0
6/30/2018	39	1	97	3	3	99.58		0
7/31/2018	53	1	93	2	3	99.33		8
8/31/2018	14	0	36	1	3	99.81		0
9/30/2018	28	1	85	2	3	99.59		14
10/31/2018	0	0	0	0	0	100		0
11/30/2018						99	0	
12/31/2018						100	0	
1/31/2019						99.9	0	
2/28/2019						100	12	
3/31/2019						100	0	
4/30/2019	0	0	0	0	0	100		0
5/31/2019	0	0	0	0	0	100		0
6/30/2019	0	0	0	0	0	100		8
7/31/2019	0	0	0	0	0	100		13
8/31/2019	0	0	0	0	0	100		21
9/30/2019	101	3	121	4	5	99		0
10/31/2019	14	0	99	3	3	99.81		0
11/30/2019						99.8	22	
12/31/2019						100	0	
1/31/2020						100	0	
2/29/2020						100	0	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave
Units	lb/d	mg/L	lb/d	mg/L	mg/L	%	lb/d	lb/d
Effluent Limit	640	10	640	10	15	85	1920	960
3/31/2020						100	0	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	mg/L	mg/L	lb/d	lb/d	mg/L	mg/L	mg/L	mg/L
Effluent Limit	15	30	2880	960	15	45	25	Report
Minimum	0	0	0	0	0	0	0	0
Maximum	5	4	241	355	6	5	11.2	8
Median	3	2	129	137	3	3	4.7	4
No. of Violations	0	0	0	0	0	0	0	N/A
4/30/2015	4			355	5		6	
5/31/2015	3			291	5		6	
6/30/2015	3			149	3		4	
7/31/2015	4.8			299	6		9.3	
8/31/2015	4			267	6		9	
9/30/2015	4			156	4		8	
10/31/2015	4			248	6		9	
11/30/2015		2	90			3		4
12/31/2015		2	110			3		4
1/31/2016		4	198			5		8
2/29/2016		3	180			4		6
3/31/2016		4	219			4		5
4/30/2016	5			257	5		6	
5/31/2016	5			233	5		5	
6/30/2016	3			178	4		4	
7/31/2016	3			137	3		5	
8/31/2016	3.2			240	6		11.2	
9/30/2016	3			141	4		5	
10/31/2016	2.5			95	3		4.7	
11/30/2016		2	136			4		4
12/31/2016		2	137			3		4
1/31/2017		3	129			3		5
2/28/2017		3	205			4		4
3/31/2017		3	173			4		4
4/30/2017	3			314	4		5	
5/31/2017	3			159	3		4	
6/30/2017	4			249	5		6	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	mg/L	mg/L	lb/d	lb/d	mg/L	mg/L	mg/L	mg/L
Effluent Limit	15	30	2880	960	15	45	25	Report
7/31/2017	4			183	4		7	
8/31/2017	3			127	4		5	
9/30/2017	3			100	3		4	
10/31/2017	2.8			83	3		5.8	
11/30/2017		3	241			3		4
12/31/2017		3	130			4		4
1/31/2018		3	173			4		5
2/28/2018		3	167			4		3
3/31/2018		1	160			3		3
4/30/2018	0.6			198	2		8.3	
5/31/2018	0			0	0		0	
6/30/2018	0			0	0		0	
7/31/2018	0.2			34	1		3.1	
8/31/2018	0			0	0		0	
9/30/2018	0.3			55	1		3.5	
10/31/2018	0			0	0		0	
11/30/2018		0	0			0		0
12/31/2018		0	0			0		0
1/31/2019		0	0			0		0
2/28/2019		0	0			0		3
3/31/2019		0	47			1		0
4/30/2019	0			0	0		0	
5/31/2019	0			0	0		0	
6/30/2019	0.2			33	1		2.5	
7/31/2019	0.2			54	1		3.1	
8/31/2019	0.6			45	1		4.2	
9/30/2019	0			0	0		0	
10/31/2019	0			0	0		0	
11/30/2019		1	58			2		5
12/31/2019		0	0			0		0
1/31/2020		0	0			0		0
2/29/2020		0	0			0		0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	mg/L	mg/L	lb/d	lb/d	mg/L	mg/L	mg/L	mg/L
Effluent Limit	15	30	2880	960	15	45	25	Report
3/31/2020		0	0			0		0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC	DO
	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Daily Min
Units	%	SU	SU	#/100mL	#/100mL	ug/L	ug/L	mg/L
Effluent Limit	85	6.5	8.3	200	400	20	20	6
Minimum	97	6.5	7.4	1	0	No Data	No Data	7
Maximum	100	7.1	8.1	28	170	No Data	No Data	8
Median	99	6.8	7.6	2	10	No Data	No Data	8
No. of Violations	0	0	0	0	0	No Data	No Data	0
4/30/2015	97	6.7	7.6	1	2	NODI: 9	NODI: 9	7
5/31/2015	98	6.9	7.6	2	18	NODI: 9	NODI: 9	8
6/30/2015	99	7	7.5	4	60	NODI: 9	NODI: 9	8
7/31/2015	98	6.7	7.9	2	10	NODI: 9	NODI: 9	8
8/31/2015	99	7	7.6	10	170	NODI: 9	NODI: 9	7
9/30/2015	99	6.9	7.7	7	85	NODI: 9	NODI: 9	7
10/31/2015	99	6.8	7.6	2	4	NODI: 9	NODI: 9	7
11/30/2015	99	6.7	7.4	2	5	NODI: 9	NODI: 9	
12/31/2015	99	6.7	7.9	1	3	NODI: 9	NODI: 9	
1/31/2016	98	7	7.5	1	23	NODI: 9	NODI: 9	
2/29/2016	98	6.8	7.4	1	4	NODI: 9	NODI: 9	
3/31/2016	98	6.7	7.4	4	40	NODI: 9	NODI: 9	
4/30/2016	97	6.7	7.5	28	28	NODI: 9	NODI: 9	8
5/31/2016	98	6.7	7.4	24	76	NODI: 9	NODI: 9	8
6/30/2016	99	6.8	7.5	8	104	NODI: 9	NODI: 9	8
7/31/2016	99	6.8	7.5	3	14	NODI: 9	NODI: 9	8
8/31/2016	98	7	7.5	3	22	NODI: 9	NODI: 9	8
9/30/2016	99	7.1	7.6	3	14	NODI: 9	NODI: 9	8
10/31/2016	99	7	7.7	3	7	NODI: 2	NODI: 2	8
11/30/2016	99	7	7.4	2	3	NODI: 2	NODI: 2	
12/31/2016	99	7	7.4	2	10	NODI: 2	NODI: 2	
1/31/2017	99	6.7	7.4	1	24	NODI: 2	NODI: 2	
2/28/2017	98	6.8	7.7	2	6	NODI: 2	NODI: 2	
3/31/2017	98	6.7	7.9	3	17	NODI: 2	NODI: 2	
4/30/2017	97	6.7	7.6	6	45	NODI: 2	NODI: 2	7
5/31/2017	99	6.7	7.6	5	41	NODI: 2	NODI: 2	8
6/30/2017	98	6.9	7.8	23	45	NODI: 2	NODI: 2	7

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC	DO
	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Daily Min
Units	%	SU	SU	#/100mL	#/100mL	ug/L	ug/L	mg/L
Effluent Limit	**85**	**6.5**	**8.3**	**200**	**400**	**20**	**20**	**6**
7/31/2017	99	6.8	7.5	22	50	NODI: 2	NODI: 2	7
8/31/2017	99	6.6	7.5	13	112	NODI: 2	NODI: 2	7
9/30/2017	99	7	7.6	4	29	NODI: 2	NODI: 2	8
10/31/2017	98.91	6.9	7.4	2	38	NODI: 2	NODI: 2	7
11/30/2017	99	7	7.5	2	4	NODI: 2	NODI: 2	
12/31/2017	99	6.6	7.4	3	8	NODI: 2	NODI: 2	
1/31/2018	98	6.9	7.5	5	18	NODI: 2	NODI: 2	
2/28/2018	99	6.8	7.7	2	14	NODI: 2	NODI: 2	
3/31/2018	99	6.7	7.4	1	1	NODI: A	NODI: A	
4/30/2018	99.65	6.6	7.4	1	2	NODI: 2	NODI: 2	8
5/31/2018	100	6.6	7.4	1	2	NODI: 2	NODI: 2	8
6/30/2018	100	6.6	7.6	1	4	NODI: 2	NODI: 2	8
7/31/2018	99.9	6.9	7.4	2	24	NODI: 2	NODI: 2	8
8/31/2018	100	6.8	7.6	1	3	NODI: 2	NODI: 2	7
9/30/2018	99.85	6.6	7.4	1	4	NODI: 2	NODI: 2	8
10/31/2018	100	6.6	7.4	1	3	NODI: 2	NODI: 2	8
11/30/2018	100	7.1	7.6	1	4	NODI: 2	NODI: 2	
12/31/2018	100	7.1	7.6	1	6	NODI: 2	NODI: 2	
1/31/2019	100	7.1	7.5	2	15	NODI: 2	NODI: 2	
2/28/2019	99.9	6.9	7.6	1	2	NODI: 2	NODI: 2	
3/31/2019	100	6.9	7.4	1	5	NODI: 8	NODI: 8	
4/30/2019	100	6.5	7.4	1	4	NODI: 8	NODI: 8	7
5/31/2019	100	6.9	7.5	1	0	NODI: 8	NODI: 8	8
6/30/2019	99.9	7	7.6	1	4	NODI: 8	NODI: 8	8
7/31/2019	99.84	6.9	7.8	2	11	NODI: 8	NODI: 8	7
8/31/2019	99.71	7.1	7.8	1	0	NODI: 8	NODI: 8	7
9/30/2019	100	6.7	8.1	1	10	NODI: 8	NODI: 8	8
10/31/2019	100	6.8	7.7	1	10	NODI: 9	NODI: 9	8
11/30/2019	99.6	7	7.7	3	8	NODI: 9	NODI: 9	
12/31/2019	100	6.7	7.8	2	16	NODI: 9	NODI: 9	
1/31/2020	100	7.1	7.7	2	6	NODI: 9	NODI: 9	
2/29/2020	100	7.1	7.6	3	12	NODI: 9	NODI: 9	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TSS	pH	pH	Fecal Coliform	Fecal Coliform	TRC	TRC	DO
	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Daily Min
Units	%	SU	SU	#/100mL	#/100mL	ug/L	ug/L	mg/L
Effluent Limit	85	6.5	8.3	200	400	20	20	6
3/31/2020	100	7	7.6	1	3	NODI: 9	NODI: 9	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	TP	TP	TP
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave	Annual Rolling Ave	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	lb/d	mg/L	mg/L
Effluent Limit	1	8	1	Report	1.5	Report	0.75	1
Minimum	0.07	0.06	0.07	0.12	0.1	0	0.01	0.09
Maximum	0.3	0.3	0.5	0.7	0.8	35	0.09	0.75
Median	0.15	0.17	0.2	0.21	0.24	4	0.06	0.35
No. of Violations	0	0	0	N/A	0	N/A	0	0
4/30/2015		0.3		0.5		6		
5/31/2015		0.2		0.5		4	0.08	
6/30/2015	0.07		0.07		0.3	3	0.09	
7/31/2015	0.09		0.14		0.28	3	0.07	
8/31/2015	0.3		0.5		0.8	3	0.06	
9/30/2015	0.2		0.2		0.6	3	0.06	
10/31/2015	0.14		0.49		0.32	3	0.08	
11/30/2015		0.07		0.14		9		0.3
12/31/2015		0.1		0.2		10		0.3
1/31/2016		0.22		0.26		18		0.46
2/29/2016		0.2		0.3		23		0.5
3/31/2016		0.2		0.5		15		0.3
4/30/2016		0.2		0.3		3		
5/31/2016		0.11		0.12		3	0.07	
6/30/2016	0.1		0.1		0.1	2	0.06	
7/31/2016	0.2		0.2		0.3	2	0.05	
8/31/2016	0.15		0.17		0.18	1	0.04	
9/30/2016	0.2		0.2		0.2	1	0.03	
10/31/2016	0.17		0.2		0.2	2	0.03	
11/30/2016		0.15		0.19		8		0.24
12/31/2016		0.12		0.16		14		0.36
1/31/2017		0.2		0.3		16		0.3
2/28/2017		0.15		0.18		18		0.4
3/31/2017		0.18		0.21		7		0.15
4/30/2017		0.19		0.27		6		
5/31/2017		0.2		0.2		5	0.09	
6/30/2017	0.2		0.2		0.2	3	0.08	

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	TP	TP	TP
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave	Annual Rolling Ave	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	lb/d	mg/L	mg/L
Effluent Limit	1	8	1	Report	1.5	Report	0.75	1
7/31/2017	0.2		0.2		0.2	2	0.07	
8/31/2017	0.09		0.2		0.2	2	0.06	
9/30/2017	0.2		0.28		0.29	1	0.05	
10/31/2017	0.23		0.3		0.42	2	0.05	
11/30/2017		0.3		0.7		4		0.1
12/31/2017		0.2		0.37		10		0.27
1/31/2018		0.15		0.19		15		0.35
2/28/2018		0.06		0.18		21		0.39
3/31/2018		0.18		0.22		20		0.36
4/30/2018		0.17		0.19		4		
5/31/2018		0.17		0.21		3	0.06	
6/30/2018	0.17		0.28		0.34	2	0.06	
7/31/2018	0.12		0.16		0.23	1	0.05	
8/31/2018	0.14		0.18		0.29	1	0.03	
9/30/2018	0.13		0.14		0.19	0	0.02	
10/31/2018	0.12		0.12		0.17	0	0.01	
11/30/2018		0.11		0.17		11		0.14
12/31/2018		0.12		0.16		5		0.09
1/31/2019		0.17		0.24		22		0.45
2/28/2019		0.13		0.22		30		0.64
3/31/2019		0.2		0.33		14		0.3
4/30/2019		0.16		0.19		5		
5/31/2019		0.19		0.24		4	0.06	
6/30/2019	0.21		0.23		0.36	2	0.06	
7/31/2019	0.17		0.19		0.24	2	0.06	
8/31/2019	0.15		0.18		0.19	1	0.05	
9/30/2019	0.14		0.26		0.39	1	0.04	
10/31/2019	0.11		0.13		0.16	1	0.03	
11/30/2019		0.1		0.12		10		0.25
12/31/2019		0.1		0.13		26		0.48
1/31/2020		0.1		0.12		19		0.37
2/29/2020		0.17		0.21		35		0.75

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	TP	TP	TP
	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Monthly Ave	Annual Rolling Ave	Monthly Ave
Units	mg/L	mg/L	mg/L	mg/L	mg/L	lb/d	mg/L	mg/L
Effluent Limit	1	8	1	Report	1.5	Report	0.75	1
3/31/2020		0.15		0.19		21		0.45

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TP	TP	TP	TP	Copper	Copper	Lead	Lead
	Daily Max	Daily Max	Daily Max	MEDIAN	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	lb/d	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.2	Report	0.1	20	Report	Report	Report
Minimum	1	0.08	0.02	0.04	5	5	0	0
Maximum	56	0.2	1.15	0.09	20	25	10	10
Median	7	0.12	0.13	0.08	9.7	10.25	0	0
No. of Violations	N/A	0	N/A	0	0	N/A	N/A	N/A
4/30/2015	11	0.2		0.09	6	6	0	0
5/31/2015	7		0.15		6	6	0	0
6/30/2015	5		0.1		9.8	12	0	0
7/31/2015	4		0.08		7	7	0	0
8/31/2015	5		0.11		13	13	0	0
9/30/2015	4		0.11		5	10	0	0
10/31/2015	5		0.15		9	9	0	0
11/30/2015	17		0.5		9	9	0	0
12/31/2015	17		0.5		10		0	0
1/31/2016	21		0.58		9.6	9.6	0	0
2/29/2016	32		0.6		11	11	0	0
3/31/2016	25		0.5		8.4	8.7	0	0
4/30/2016	6	0.12		0.06	9	9	0	0
5/31/2016	5		0.12		8.8	8.8	8.8	8.8
6/30/2016	3		0.06		10.5	11	0	0
7/31/2016	2		0.06		14	14	0	0
8/31/2016	2		0.05		11	11	0	0
9/30/2016	1		0.03		9	16	0	0
10/31/2016	3		0.08		20	22	< 3	< 3
11/30/2016	14		0.4		18	18	10	10
12/31/2016	19		0.5				0	0
1/31/2017	27		0.4		10	10	0	0
2/28/2017	22		0.51		11	11	0	0
3/31/2017	12		0.25		10	11	0	0
4/30/2017	11	0.12		0.08	6	6	0	0
5/31/2017	10		0.2		11	11	6	6
6/30/2017	6		0.09		10.5	11.4	0	0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TP	TP	TP	TP	Copper	Copper	Lead	Lead
	Daily Max	Daily Max	Daily Max	MEDIAN	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	lb/d	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.2	Report	0.1	20	Report	Report	Report
7/31/2017	3		0.09		12.5	12.5	< 3	< 3
8/31/2017	4		0.1		20	20	1	3
9/30/2017	3		0.09		17	25	0	0
10/31/2017	3		0.1		15.3	24.5	0	0
11/30/2017	8		0.2		9	21	1	3
12/31/2017	15		0.43			16	0	0
1/31/2018	27		0.53		8.5	8.5	0	0
2/28/2018	24		0.52		10.2	10.2	0	0
3/31/2018	34		0.68		7.4	7.5	2	3
4/30/2018	19	0.2		0.04	6.9	6.9	0	0
5/31/2018	5		0.12		8.5	8.5	0	0
6/30/2018	3		0.09		10.3	10.3	0	0
7/31/2018	2		0.05		9.2	9.2	0	0
8/31/2018	1		0.02		12.1	12.1	0	0
9/30/2018	1		0.02		11.2	11.2	0	0
10/31/2018	1		0.02		6.8	6.8	0	0
11/30/2018	25		0.32		5.6	5.6	0	0
12/31/2018	7		0.13		5	5	0	0
1/31/2019	26		0.67		5	5	0	0
2/28/2019	33		0.73		9.1	9.1	3	3
3/31/2019	31		0.67		9.6	9.6	6	6
4/30/2019	8	0.08		0.08	6.3	6.3	6	6
5/31/2019	5		0.09		5.5	5.5	0	0
6/30/2019	4		0.1		8.6	8.6	0	0
7/31/2019	3		0.07		10.4	10.4	0	0
8/31/2019	3		0.1		12.7	12.7	5.2	5.2
9/30/2019	2		0.04		11	11	0	0
10/31/2019	2		0.05		11	11	0	0
11/30/2019	13		0.34		10.8	10.8	0	0
12/31/2019	51		0.81		7.9	7.9	0	0
1/31/2020	20		0.4		9.1	9.1	0	0
2/29/2020	39		0.83		11.4	11.4	4	4

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	TP	TP	TP	TP	Copper	Copper	Lead	Lead
	Daily Max	Daily Max	Daily Max	MEDIAN	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	lb/d	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	0.2	Report	0.1	20	Report	Report	Report
3/31/2020	56		1.15		12.4	12.8	0	0

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Zinc	Zinc	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	lb/d	mg/L	ug/L	lb/d	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0	2	0.04	0	3	0.05
Maximum	67	67	400	33	0.7	445	52	1.07
Median	36.5	39	88.5	12	0.29	90	20	0.4
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/30/2015	39	39	250			250		
5/31/2015	36	36	170			170		
6/30/2015	41	50	190			260		
7/31/2015	28	28	400			400		
8/31/2015	43	43	170			170		
9/30/2015	22	39	48			85		
10/31/2015	33	33	350			350		
11/30/2015	34	34	19	5	0.2	19	14	0.4
12/31/2015	35	40	21	7	0.2	24	13	0.4
1/31/2016	31	31	10	13	0.34	10	17	0.47
2/29/2016	55	55	14	18	0.4	14	26	0.5
3/31/2016	42	46	16	9	0.2	22	17	0.3
4/30/2016	44	44	10			10		
5/31/2016	0	0	33			33		
6/30/2016	38	39	0			0		
7/31/2016	37	37	0			0		
8/31/2016	29	29	0			0		
9/30/2016	24	24	0			0		
10/31/2016	34	38	< 50			< 50		
11/30/2016	64	64	100	7	0.21	100	14	0.39
12/31/2016	37	41	0	15	0.37	0	20	0.51
1/31/2017	36	36	0	13	0.3	0	23	0.3
2/28/2017	39	39	0	14	0.33	0	18	0.38
3/31/2017	44	47	0	10	0.22	0	10	0.22
4/30/2017	33	33	< 50			< 50		
5/31/2017	34	34	< 50			< 50		
6/30/2017	31	34	0			0		

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Zinc	Zinc	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	lb/d	mg/L	ug/L	lb/d	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
7/31/2017	32	32	< 50			< 50		
8/31/2017	36	39	57			172		
9/30/2017	29	36	164			268		
10/31/2017	42	42	196			196		
11/30/2017	26	27	281	2	0.04	445	4	0.1
12/31/2017	42	46	220	7	0.19	393	12	0.33
1/31/2018	46	46	0	12	0.29	0	26	0.52
2/28/2018	47	47	129	17	0.32	129	22	0.45
3/31/2018	42	43	126	9	0.15	131	20	0.35
4/30/2018	41	41	127			127		
5/31/2018	34	34	93			93		
6/30/2018	53	53	104			104		
7/31/2018	39	39	120			120		
8/31/2018	16	16	93			93		
9/30/2018	24	24	87			87		
10/31/2018	15	15	68			68		
11/30/2018	14	14	83	10	0.13	83	23	0.3
12/31/2018	32	32	91	2	0.04	91	3	0.05
1/31/2019	40	40	141	19	0.4	141	24	0.63
2/28/2019	59	59	86	27	0.59	86	31	0.71
3/31/2019	54	54	173	12	0.25	173	27	0.58
4/30/2019	42	42	88			88		
5/31/2019	42	42	89			89		
6/30/2019	56	56	97			97		
7/31/2019	67	67	185			185		
8/31/2019	33	33	115			115		
9/30/2019	31	31	122			122		
10/31/2019	36	36	82			82		
11/30/2019	38	38	92	7	0.18	92	10	0.23
12/31/2019	33	33	95	25	0.45	95	48	0.78
1/31/2020	37	37	99	17	0.34	99	19	0.39
2/29/2020	51	51	77	33	0.7	77	36	0.74

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Zinc	Zinc	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)	Aluminum, total (as Al)	Phosphate, dissolved/ orthophosphate(as P)	Phosphate, dissolved/ orthophosphate(as P)
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	lb/d	mg/L	ug/L	lb/d	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
3/31/2020	29	51	101	18	0.38	120	52	1.07

Outfall - WET Effluent Data

Parameter	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia	pH	Hardness	Aluminum	Cadmium	Copper	Lead	Nickel
	Daily Min	Daily Min							
Units	%	%	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	100	Report	Report	Report	Report	Report	Report	Report
Minimum	100	50	7.22	130	<0.02	<0.0001	0.0025	<0.0003	0.0014
Maximum	100	100	7.69	520	0.26	<0.0005	0.024	<0.0005	0.006
Median	100	100	7.425	260	0.069	<0.0005	0.01	<0.0005	0.003
No. of Violations	0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/30/2015	100	100	7.43	260	0.26	<0.0005	0.012	<0.0005	0.003
9/30/2015	100	100	7.42	280	0.21	<0.0005	0.009	<0.0005	0.002
12/31/2015	100	100	7.35	230	0.024	<0.0005	0.013	<0.0005	0.003
3/31/2016	100	100	7.36	160	0.022	<0.0005	0.008	<0.0005	0.003
6/30/2016	100	50	7.36	200	<0.02	<0.0005	0.011	<0.0005	0.004
9/30/2016	100	100	7.41	340	<0.02	<0.0005	0.011	<0.0005	0.006
12/31/2016	100	100	7.36	310	<0.02	<0.0001	0.024	<0.0003	0.0049
3/31/2017	100	100	7.22	260	<0.02	<0.0003	0.01	<0.0003	0.004
6/30/2017	100	100	7.51	350	<0.02	<0.0003	0.0095	<0.0003	0.005
9/30/2017	100	100	7.59	290	0.12	<0.0003	0.014	<0.0003	0.0051
12/31/2017	100	100	7.37	210	0.046	<0.0003	0.016	<0.0003	0.0038
3/31/2018	100	100	7.6	160	0.1	<0.0003	0.0081	<0.0003	0.0028
6/30/2018	100	100	7.34	130	0.064	<0.0003	0.0098	<0.0003	0.0031
9/30/2018	100	100	7.53	300	0.058	<0.0003	0.0094	<0.0003	0.0029
12/31/2018	100	100	7.53	300	0.034	<0.0003	0.0025	<0.0003	0.0014
3/31/2019	100	100	7.33	140	0.14	<0.0003	0.0092	<0.0003	0.002
6/30/2019	100	100	7.62	520	0.2	<0.0003	0.01	<0.0003	0.0026
9/30/2019	100	100	7.65	390	0.069	<0.0003	0.007	<0.0003	0.0022
12/31/2019	100	100	7.59	210	0.055	<0.0003	0.011	<0.0003	0.0022
3/31/2020	100	100	7.69	170	0.12	<0.0003	0.012	<0.0003	0.0041

Outfall - WET Effluent Data

Parameter	Zinc
Units	mg/L
Effluent Limit	Report
Minimum	0.021
Maximum	0.062
Median	0.042
No. of Violations	N/A
6/30/2015	0.05
9/30/2015	0.029
12/31/2015	0.04
3/31/2016	0.046
6/30/2016	0.036
9/30/2016	0.023
12/31/2016	0.041
3/31/2017	0.047
6/30/2017	0.034
9/30/2017	0.025
12/31/2017	0.046
3/31/2018	0.043
6/30/2018	0.055
9/30/2018	0.025
12/31/2018	0.021
3/31/2019	0.062
6/30/2019	0.058
9/30/2019	0.029
12/31/2019	0.048
3/31/2020	0.057

Outfall - WET Ambient Data

Parameter	Ammonia	pH	Hardness	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
Units	mg/L	S.U.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	**<0.1**	**6.78**	**36**	**<0.02**	**<0.0001**	**<0.002**	**<0.0002**	**<0.001**	**<0.002**
Maximum	**<0.1**	**7.68**	**92**	**0.52**	**<0.0005**	**0.0033**	**0.003**	**0.0025**	**0.024**
Median	**<0.1**	**7.27**	**50.5**	**0.056**	**<0.0005**	**0.00125**	**0.0006**	**0.0018**	**0.0051**
6/30/2015	<0.1	6.79	44	0.093	<0.0005	<0.002	0.0006	<0.002	0.008
9/30/2015	<0.1	7.22	81	0.085	<0.0005	<0.002	<0.0005	<0.002	0.004
12/31/2015	<0.1	7.01	90	<0.02	<0.0005	<0.002	<0.0005	<0.002	0.004
3/31/2016	<0.1	7.35	39	0.029	<0.0005	<0.002	<0.0005	<0.002	<0.002
6/30/2016	<0.1	7.22	54	0.056	<0.0005	0.001	<0.0005	<0.002	0.005
9/30/2016	<0.1	7.4	80	0.24	<0.0005	0.0017	0.0014	<0.002	0.024
12/31/2016	<0.1	7.29	78	0.11	<0.0001	0.0029	0.0004	<0.001	0.012
3/31/2017	<0.1	7.02	55	0.044	<0.0001	0.0006	<0.0002	<0.001	0.003
6/30/2017	<0.1	7.62	46	0.035	<0.0001	0.0029	0.0002	<0.001	0.0061
9/30/2017	<0.1	7.68	92	0.24	<0.0001	0.0025	0.0013	<0.001	0.012
12/31/2017	<0.1	6.78	57	0.52	<0.0001	0.0033	0.003	0.0011	0.018
3/31/2018	<0.1	7.24	40	0.039	<0.0003	0.0006	<0.0003	<0.001	<0.002
6/30/2018	<0.1	7.53	52	0.033	<0.0003	0.0007	0.0003	<0.001	0.0027
9/30/2018	<0.1	7.27	56	0.066	<0.0001	0.0009	0.0006	<0.001	0.0034
12/31/2018	<0.1	7.27	36	0.064	<0.0001	0.0013	0.0008	<0.001	0.0046
3/31/2019	<0.1	6.96	39	0.048	<0.0003	0.0009	<0.0003	<0.001	0.014
6/30/2019	<0.1	7.36	45	0.027	<0.0001	0.0012	<0.0002	<0.001	0.0034
9/30/2019	<0.1	7.55	49	0.094	<0.0003	0.003	0.0004	<0.001	0.0088
12/31/2019	<0.1	7.22	39	0.045	<0.0003	0.0008	<0.0003	<0.001	0.0041
3/31/2020	<0.1	7.27	43	0.032	<0.0003	0.0013	<0.0003	0.0025	0.0052

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD)[1] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory detection limits). For datasets of 10 or more samples, EPA uses the upper bound effluent concentration at the 95th percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$C_s Q_s + C_e Q_e = C_d Q_d$$

Where:

C_s = upstream concentration (median value of available ambient data)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
C_e = effluent concentration (95th percentile or maximum of effluent concentration)
Q_e = effluent flow of the facility (design flow)
C_d = downstream concentration
Q_d = downstream flow ($Q_s + Q_e$)

Solving for the downstream concentration results in:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e). The table below presents the

reasonable potential calculations and, if applicable, the calculation of the limits required in the permit. Refer to the pollutant-specific section of the Fact Sheet for a detailed discussion of these calculations, any assumptions that were made and the resulting permit requirements.

Pollutant	Q_s	C_s [1]	Q_e	C_e [2]		Q_d	C_d		Criteria		Reasonable Potential		Limits	
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_e & C_d > Acute Criteria	C_e & C_d > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)
Ammonia (Warm)		0.0		1.5	1.0		1.5	1.0	18.2	2.6	N/A	N/A	**1.5**	**1.0**
Ammonia (Cold)		0.0		0.3	8.0		0.3	8.0	18.2	5.1	N	N/A	N/A	**5.1**
Phosphorus		0.00		N/A	1.00		N/A	1.00	N/A	0.100	N/A	N/A	N/A	**0.10**
		µg/L		µg/L	µg/L		µg/L	µg/L	µg/L	µg/L			µg/L	µg/L
Aluminum	0.00	52.0	11.89	332.5	332.5	11.89	332.5	332.5	750	87	N	**Y**	N/A	**87.0**
Cadmium		0.0		0.0	0.0		0.0	0.0	5.6	0.5	N	N	N/A	N/A
Copper		1.0		14.0	9.0		14.0	9.0	34.4	21.1	N/A	N/A	**16.1**	**16.1**
Lead		0.1		6.2	6.2		6.2	6.2	275.5	10.7	N	N	N/A	N/A
Nickel		0.0		5.8	5.8		5.8	5.8	1052.9	117.1	N	N	N/A	N/A
Zinc		4.8		59.8	59.8		59.8	59.8	269.2	269.2	N	N	N/A	N/A

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

[2]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 Appendix A). If the metal already has a limit (for either acute or chronic conditions), the value represents the existing limit.

Appendix C Summary of Estuarine Data from 2017 CDM Smith/Army Corp Report* and 2017 EPA Field study

Summary of Estuarine Data from 2017 CDM Smith/Army Corp Report*

		6/25/2014 (dry weather)			8/10/2016 (wet/dry weather)		
Station ID	Station Name	Salinity (ppt)	TN (mg/L)	Chl 'a' (ug/l)	Salinity (ppt)	TN (mg/L)	Chl 'a' (ug/l)
M026U	U/S Amesbury	0.55	1.44	19	0.29	1.67	17
M026D	D/S Amesbury	1.02	1.35	27	0.42	1.534	23
M028U	U/S Salisbury WWTP	15.75	0.78	24	12.75	1.296	16
M028D	D/S Salisbury WWTP	23.37	0.70	21	28.14	1.081	42
M029U	U/S Newburyport	18.015	0.76	30	25.55	0.497	14
M029D	D/S Newburyport	20.555	0.54	27	24.83	0.473	14
M027	Shellfish Bed/Newburyport Boatramp	30.505	0.47	4	29.36	0.442	4.3
M030	Shellfish Bed (Newburyport)	23.555	0.58	17	29.75	0.47	6.6

*Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017

Summary of Estuarine Data from 2017 EPA Field Study*

		7/31/2017 (dry weather)			8/14/2017 (dry weather)		
Station ID	Station Name	Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)	Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)
M018	Lawrence Community Boating, End of Dock in Lawrence, 1 Eaton Street	0.1	0.78	8	0.1	0.9	10
M025	Upstream of Merrimack Outfall	0.1	0.92	12	0.1	1.1	10
M026	Upstream of Amesbury Outfall	0.2	0.79	16	0.2	1	12
M028	Upstream of Newburyport	2.2	0.88	10	1	1.1	10
M029	Downstream of Newburyport Outfall	4.8	0.87	10	7	0.85	6
M030	Salisbury MA	15.3	0.73	7	2.8	1.2	11

		8/29/2017 (dry weather)			9/14/2017 (wet/dry weather)		
Station ID	Station Name	Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)	Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)
M018	Lawrence Community Boating, End of Dock in Lawrence, 1 Eaton Street	0.1	0.83	11	0.1	0.79	6
M025	Upstream of Merrimack Outfall	0.1	1.2	10	0.1	0.93	5
M026	Upstream of Amesbury Outfall	0.4	1	13	0.2	0.91	6
M028	Upstream of Newburyport	5.9	0.94	11	3.4	0.92	4
M029	Downstream of Newburyport Outfall	8.2	0.83	10	5.8	0.86	4

M030	Salisbury MA	15.3	0.62	8	9.6	0.73	4

Station ID	Station Name	9/26/2017 (dry weather)			10/11/2017 (dry weather)		
		Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)	Salinity (ppt)	TN (mg/L)	Chl 'a' (µg/l)
M018	Lawrence Community Boating, End of Dock in Lawrence, 1 Eaton Street	0.1	1.2	24	0.1	1.3	9
M025	Upstream of Merrimack Outfall	0.1	1.5	5	0.2	1.8	10
M026	Upstream of Amesbury Outfall	0.2	1.5	7	0.2	1.9	6
M028	Upstream of Newburyport	7.2	1.2	2	4.2	1.7	5
M029	Downstream of Newburyport Outfall	10.8	1.1	2	17.3	0.87	3
M030	Salisbury MA	17.9	0.74	2	9.8	1.3	3

Appendix D

EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

This regional interpretative statement provides notice to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that include municipal satellite sewage collection systems ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to include and regulate the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. EPA Region 1's decision in any particular case will be made by applying the law and regulations on the basis of specific facts when permits are issued.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

> "Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of …[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."[1]

Because ownership/operation of a regionally integrated POTW is divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O & M") procedures. Failure to properly implement O & M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal

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[1] *See Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. *See also* "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

satellite collection systems as co-permittees is consistent with the definition of "publicly owned treatment works," which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region's position is set forth in greater detail in *Attachment A*.

Attachment A

ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS

Exhibit A	List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy
Exhibit B	Analysis of extraneous flow trends for representative systems
Exhibit C	List of municipal satellite collection systems that have had SSOs
Exhibit D	Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board ("Board") issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. __ (*Order Denying Review in Part and Remanding in Part*, EAB, May 28, 2010).[2] While the Board "did not pass judgment" on the Region's position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that "where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant." *Id.*, *slip op.* at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

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[2] The decision is available on the Board's website via the following link: http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument.

(2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the "collection system" end and the "user" begin?

(3) Do municipal satellite collection systems "discharge [ ] a pollutant" within the meaning of the statute and regulations?

(4) Are municipal satellite collection systems "indirect dischargers" and thus excluded from NPDES permitting requirements?

(5) Is the Region's rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to "municipality" in the regulatory definition of POTW, and the definition's statement that "[t]he term also means the municipality…which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works"?

(6) Is the Region's rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board's decision. It details the legal and policy bases for regulating as co-permittees publicly owned treatment works ("POTWs") that include municipal satellite collection systems. Region 1's analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity's municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems are subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).[3] The purpose of these systems is

[3] A combined sewer, on the other hand, is a type of sewer system that collects and conveys sanitary sewage and stormwater runoff in a single-pipe system to a POTW treatment plant. *See generally* Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A "satellite" community is a sewage collection system owner/operator that does not have ownership of the treatment facility and a specific or identified point of discharge but rather the responsibility to collect and convey the community's wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing deterioration due to I/I-related hydraulic overloading.

Despite their critical role in the nation's infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed "sanitary sewer overflows" (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation's sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many

municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal collection systems influence the performance of sewage treatment plants. When the structural integrity of a sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.[4]

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows ("SSOs") in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a

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[4] In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem). [BP: Is there anything more recent?]

direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

II. EPA Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

EPA Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, EPA Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant. As the permit conditions were focused on the treatment plant itself, this was sufficient to ensure that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

> ((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittees effluent limitations, or cause overflows from the permittees collection system.

As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, EPA Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request that the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") be included as co-permittees, based on evidence provided by MWRA that its specific relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. EPA Region 1 also put satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to EPA Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. *See Exhibit B* (Municipal satellite collection systems with SSOs). Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit C* (Analysis of extraneous flow trends for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered, and serve the largest population centers.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.[5] In light of its past permitting experience and the need to effectively address the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems.[6] Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 25 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A*. The 25 permits include a total of 55 satellite collection systems as co-permittees.

III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, EPA Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

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[5] Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. EPA Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

[6] EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.").

(1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?

The scope of NPDES authority extends beyond the owners/operators of the treatment plant to include to owners/operators of portions of the wider POTW, for the reasons discussed below.

The CWA prohibits the "discharge of any pollutant by any person" from any point source to waters of the United States, except, *inter alia,* in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b). Where there is a discharge of pollutants, NPDES regulations require the "operator" of the discharging "facility or activity" to obtain a permit in circumstances where the operator is different from the owner. *Id.* § 122.21(b). "Owner or operator" is defined as "the owner or operator of any 'facility or activity' subject to regulation under the NPDES program," and a "facility or activity" is "any NPDES 'point source' or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program." *Id.* § 122.2.

"Publicly owned treatment works" are facilities subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 402(a)(1) ("[t]he Administrator may…issue a permit for the discharge of any pollutant….upon condition that such discharge will meet (A) all applicable requirements under [section 301]…"); § 301(b)(1)(B) ("In order to carry out the objective of this chapter there shall be achieved…for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]"); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) ("…each NPDES permit shall include…[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act") and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the "POTW" as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a), (requiring "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information).

A municipal satellite collection system is part of a POTW under applicable law. The CWA and its implementing regulations broadly define "POTW" to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the plants. Under NPDES regulations at 40 C.F.R. §§ 122.2 and 403.3(q), the term "Publicly Owned Treatment Works" or "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 502(4) of the Act)." Under section 212 of the Act,

> "(2)(A) The term 'treatment works' means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid

> nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.
>
> (B) In addition to the definition contained in subparagraph (A) of this paragraph, 'treatment works' means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title."

Under the NPDES program regulations, this definition has been interpreted as follows:

> "The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]…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."

See 40 C.F.R. § 122.2, cross-referencing 403.3(q).

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems. Municipal satellite collection systems are part of a POTW by definition (*i.e.*, they are "sewage collection systems" under section 212(A) and "sanitary sewer systems" under section 212(B)). They are also conveyances that send wastewater to a POTW treatment plant for treatment under 40 C.F.R. 403.3(q)). The preamble to the rule that created the regulatory definition of POTW supports the reading that the treatment plant comprises only a portion of the POTW. *See* 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).[7]

[7] "A new provision…defining the term 'POTW Treatment Plant' has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). …[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term "POTW

Consistent with EPA Region 1's interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.[8]

(2) If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the "collection system" end and the "user" begin?

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, which are defined as sewers whose purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term "treatment works" is defined to include "sewage collection systems." CWA § 212. In order to define the extent of the sewage collection system for purposes of co-permittee regulation—*i.e.*, to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA's regulatory interpretation of the term "sewage collection system." In relevant part, EPA regulations define "sewage collection system" at 40 C.F.R. § 35.905 as:

> ".... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection "Y" fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition…."

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region's approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (i.e., common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW's collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type

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treatment plant" will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system."

[8] *See, e.g., United States v. Borowski, 977 F.2d 27, 30 n.5* (1st Cir. 1992) ("We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington's sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority's treatment works."); *Shanty Town Assoc. v. Envtl. Prot. Agency, 843 F.2d 782, 785* (4th Cir. 1988) ("As defined in the statute, a 'treatment work' need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.") (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of "treatment work").

of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users' wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA's reliance on the definition of "sewage collection system" from outside the NPDES regulations for interpretative guidance is reasonable as the construction grants regulations at 40 C.F.R. Part 35, subpart E pertain to grants for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term "sewage collection systems" expressly appears in the definition of treatment works under section 212 of the Act as noted above. Finally, this approach is also consistent with EPA's interpretation in other contexts, such as the SSO listening session notice, published in the Federal Register on June 1, 2010, which describes wastewater collection systems as those that "collect domestic sewage and other wastewater from homes and other buildings and convey it to wastewater sewage treatment plants for proper treatment and disposal." *See* "Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, Sanitary Sewer Overflows, and Peak Wet Weather Discharges From Publicly Owned Treatment Works Treatment Plants Serving Separate Sanitary Sewer Collection Systems," 75 Fed. Reg. 30395.[9]

(3) Do municipal satellite collection systems "discharge [] a pollutant" within the meaning of the statute and regulations?

Yes, because they are a part of the POTW, municipal satellite collection systems discharge pollutants to waters of the United States through one or more outfalls (point sources).

The "discharge of a pollutant," triggers the need for a facility to obtain an NPDES permit. A POTW "discharges [ ] pollutant[s]" if it adds pollutants from a point source to waters of the U.S. (See 40 C.F.R. § 122.2, section (a) of the definition of "discharge of a pollutant.") As explained above, municipal satellite collection systems are part of the POTW. The entire POTW is the entity that discharges pollutants to waters of the U.S. through point source outfalls typically located at the treatment plant but also occasionally through other outfalls within the overall system. The fact that a collection system may be located in the upstream portions of the POTW and not necessarily near the ultimate discharge point at the treatment plant is not material to the question of whether it "discharges" a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW. [10]

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[9] That EPA has in the past looked for guidance from Part 35 when construing the NPDES permitting program, for instance, in the context of storm water permitting, provides further support to the Region that its practice in this regard is sound. *See, e.g.*, "National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges," 55 Fed. Reg. 47990, 47955 (looking to the definition of "storm sewer" at 40 C.F.R. § 35.2005(b)(47) when defining "storm water" under the NDPES program).

[10] This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region argued that the treatment plant was the sole discharging entity for regulatory purposes. The Region has revised this view upon further consideration of the statute, regulations and case law and determined that the POTW as a whole is the discharging entity.

"Discharge of a pollutant" at 40 C.F.R. § 122.2 is also defined to include "… discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*"(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a "treatment plant" fall within the scope of "discharge of a pollutant." They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not "discharge [] pollutant[s]" and therefore are not subject to the NPDES permit requirements. This argument is flawed in that it incorrectly equates "treatment works," the term used in the definition above, with "treatment plant." To interpret "treatment works" as it appears in the regulatory definition of "discharge of a pollutant" as consisting of only the POTW treatment plant would be inconsistent with the definition of "treatment works" at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining "POTW Treatment Plant" as "*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste").

(4) Are municipal satellite collection systems "indirect dischargers" and thus excluded from NPDES permitting requirements?

No, municipal satellite collection systems are part of the POTW, not "indirect dischargers" to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the "introduction of pollutants into treatment works" that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines "indirect discharger" as "any non-domestic" source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an "industrial user." *Id*. at § 403.3(j). Under regulations governing the NPDES permitting program, the term "indirect discharger" is defined as "a non-domestic discharger introducing 'pollutants' to a 'publicly owned treatment works.'" 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements by the indirect discharger rule at 40 C.F.R. § 122.3(c), which provides, "The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers."

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not "introducing pollutants" to POTWs under 40 C.F.R. § 122.2; they are, instead, part of the POTW by definition. Similarly, they are not a non-domestic *source* that introduces pollutants into a POTW within the meaning of § 403.3(j), but as part of the POTW collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region's determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger.

The 1979 revision of the part 122 regulations defined "indirect discharger" as "a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a 'discharge of pollutants'…" *See* National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term "non-municipal" was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining "indirect discharger" as "a nondomestic discharger…"). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as "minor wording changes." 45 Fed. Reg. at 33346 (Table VII: "Relationship of June 7[, 1979] Part 122 to Today's Regulations"). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of "indirect discharger," which is limited to dischargers that introduce pollutants to POTWs.

The position that municipal satellite collection systems are part of, rather than discharge to, the POTW also is consistent with EPA guidance. EPA's 1994 Multijurisdictional Pretreatment Programs Guidance Manual, (EPA 833-B94-005) (June 1994), at p. 19, asserts that EPA has the authority to require municipal satellite collection systems to develop pretreatment programs by virtue of their being part of the POTW.

(5) How is the Region's rationale consistent with the references to "municipality" in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition's statement that "[t]he term also means the municipality….which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?"

There is no inconsistency between the Region's view that municipally-owned satellite collection systems are part of a POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region's co-permitting rationale is consistent with the first part of the pretreatment program's regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a "State or municipality (as defined by section 502(4) of the Act)." The term "municipality" as defined in CWA § 502(4) "means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes…" Thus, in order to qualify under this definition, a wastewater collection system need only be "owned by a State or municipality." There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region's view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that "POTW" may "also" mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word "also" (contrast this with the "only if" language in the preceding sentence of the regulatory definition).

(6) How does the Region's rationale comport with the permit application and signatory requirements under NPDES regulations?

EPA's authority to require municipal satellite collection systems to separately comply with the permit application requirements, or to provide waivers from these requirements where appropriate, is consistent with NPDES regulations, which provide that all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed, and municipal satellite collection systems are part of the POTW.

EPA has the authority to require municipal satellite collection systems to submit permit applications. These entities are operators of parts of the POTW. NPDES regulations characterize the operator "of the POTW" (which by definition includes the sewage collection system) as opposed to the operator "of the POTW treatment plant" as an appropriate applicant. *Id.* § 122.21(a), (requiring applicants for "new and existing POTWs" to submit information required in 122.21(j)," which in turn requires "all POTWs," among others, to provide permit application information). This reading of the regulation is in keeping with the statutory text, which subjects the POTW writ large to the secondary treatment and water quality-based requirements. *See* CWA § 301(b)(1)(B), (C). In fact, the NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. *See* 40 C.F.R. 122.21(j)(1).

Notwithstanding that EPA could require applications for all the municipal satellite collection systems, requiring such applications may result in duplicative or immaterial information. The Regional Administrator ("RA") may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). *See generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator's application.

In most cases, EPA Region 1 believes that having a single permit application from the POTW treatment plant operator will be more efficient in carrying out the regulation's intent than multiple applications from the satellite systems. (The treatment plant operator would of course be required to coordinate as necessary with the constituent components of the POTW to ensure that the information provided to EPA is accurate and complete). EPA Region 1 therefore intends to issue waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j). To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

The legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW is Section 402(a) of the CWA. This section of the Act authorizes EPA to issue a permit for the "discharge of pollutants" and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. *See* CWA § 301(b)(1)(B),(C).

The co-permittee requirements are required to assure continued achievement of secondary treatment requirements and water quality standards in accordance with sections 301 and 402 of the Act and to prevent unauthorized discharges of sewage from collection systems. With respect to secondary treatment, the inclusion of the satellite systems as co-permittees is necessary because high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology effluent limitations due to reduction in treatment efficiency), lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

As to water quality standards, the addition of the satellite systems as co-permittees is necessary to ensure collection system operation and maintenance, which will reduce extraneous flow entering the system and free up available capacity. This will facilitate compliance with water quality-based effluent limitations—made more difficult by reductions in treatment efficiency and also reduce water quality standard violations that result from the occurrence of SSOs. *See Exhibits B* (Municipal satellite collection systems with SSOs) and *C* (Analysis of extraneous flow trends for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Subjecting portions of an NPDES-regulated entity upstream of the ultimate discharge point is consistent with EPA's interpretation of the CWA in other contexts. For example, it is well established that EPA has the ability to apply discharge limitations and monitoring requirements to internal process discharges, rather than to outfalls, on the grounds that compliance with permit limitations "may well involve controls applied at points other than the ultimate point of discharge." *See Decision of the General Counsel No. 27 (In re Inland Steel Company)*, August 4, 1975 ("Limitations upon internal process discharges are proper, if such discharges would ultimately be discharged into waters of the United States, and if such limitations are necessary to carry out the principal regulatory provisions of the Act."). In the case of regionally integrated POTWs, placing conditions on satellite collection systems—though located farther up the system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute

that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that "apply to all NPDES permits," pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to 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 the permit." *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including "Publicly owned treatment works." *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA's authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety. The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

Other Considerations Informing EPA Region 1's Decision to Use a Co-permittee Permitting Structure for Regionally Integrated POTWs

In addition to consulting the relevant statutes, regulations, and preambles, Region 1 also considered other EPA guidance in coming to its determination to employ a co-permittee structure for regionally integrated POTWs. EPA's 1994 Multijurisdictional Pretreatment Programs Guidance Manual, p. 19, asserts that EPA has the authority to include municipal satellite collection systems as co-permittees by virtue of their being part of the POTW:

> If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW's NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.

The same logic that led EPA to conclude it had authority to require municipal satellite collection systems to develop a pretreatment program pursuant to an NPDES permit supports EPA Region 1's decision to impose permit conditions on such facilities to undertake proper O & M and to reduce inflow and infiltration.

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these

model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1's co-permitting approach.

Finally, in addition to federal requirements, EPA Region 1 considered the co-permittee approach in light of state regulations and policy pertaining to wastewater treatment works. The Region found its approach to be consistent with such requirements. Under Massachusetts law, "Any person operating treatment works shall maintain the facilities in a manner that will ensure proper operation of the facilities or any part thereof," where "treatment works" is defined as "any and all devices, processes and properties, real or personal, used in the collection, pumping, transmission, storage, treatment, disposal, recycling, reclamation or reuse of waterborne pollutants, but not including any works receiving a hazardous waste from off the site of the works for the purpose of treatment, storage or disposal, or industrial wastewater holding tanks regulated under 314 CMR 18.00" *See* 314 CMR 12.00 ("Operation and Maintenance and Pretreatment Standards for Wastewater Treatment Works and Indirect Dischargers"). MassDEP has also prioritized this area, issuing detailed operation and maintenance guidelines entitled "Optimizing Operation, Maintenance and Rehabilitation of Sanitary Sewer Collection Systems."

Exhibit A

Name	Issue Date
Massachusetts Water Resources Authority – Clinton (NPDES Permit No. MA0100404)	September 27, 2000
City of Brockton (NPDES Permit No. MA0101010)	May 11, 2005
City of Marlborough (NPDES Permit No. MA0100480)	May 26, 2005
Westborough Wastewater Treatment Plant (NPDES Permit No. MA0100412)	May 20, 2005
Lowell Regional Wastewater Utilities (NPDES Permit No. MA0100633)	September 1, 2005
Town of Webster Sewer Department (NPDES Permit No. MA0100439)	March 24, 2006
Town of South Hadley, Board of Selectmen (NPDES Permit No. MA0100455)	June 12, 2006
City of Leominster (NPDES Permit No. MA0100617)	September 28, 2006
Hoosac Water Quality District (NPDES Permit No. MA0100510)	September 28, 2006
Board of Public Works, North Attleborough (NPDES Permit No. MA0101036)	January 4, 2007
Town of Sunapee (NPDES Permit No. 0100544)	February 21, 2007
Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	March 3, 2007
City of Concord (NPDES Permit No. NH0100331)	June 29, 2007
City of Keene (NPDES Permit No. NH0100790)	August 24, 2007
Town of Hampton (NPDES No. NH0100625)	August 28, 2007
Town of Merrimack, NH (NPDES No. NH0100161)	September 25, 2007
City of Haverhill (NPDES Permit No. MA0101621)	December 5, 2007
Greater Lawrence Sanitary District (NPDES Permit No. MA0100447)	August 11, 2005

City of Pittsfield, Department of Public Works (NPDES No. MA0101681)	August 22, 2008
City of Manchester (NPDES No. NH0100447)	September 25, 2008
City of New Bedford (NPDES Permit No. MA0100781)	September 28, 2008
Winnipesaukee River Basin Program Wastewater Treatment Plant (NPDES Permit No. NH0100960)	June 19, 2009
City of Westfield (NPDES Permit No. MA0101800)	September 30, 2009
Hull Permanent Sewer Commission (NPDES Permit No. MA0101231)	September 1, 2009
Gardner Department of Public Works (NPDES Permit No. MA0100994)	September 30, 2009

Exhibit B

I/I Flow Analysis for Sample Regional Publicly Owned Treatment Works

I. Representative POTWS

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. Both of these facilities have been operating since 2001 under permits that place requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

II. Comparison of flows to standards for nonexcessive infiltration and I/I

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the Daily Maximum Flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

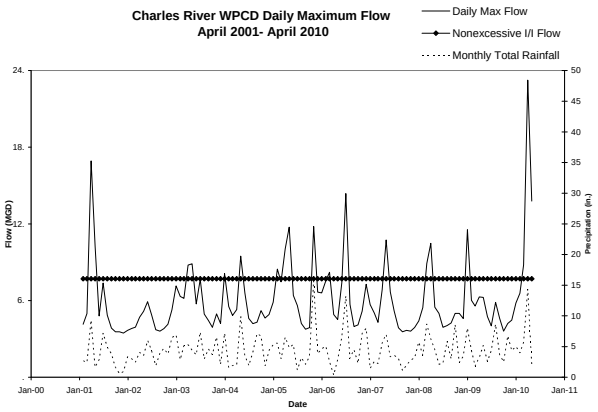
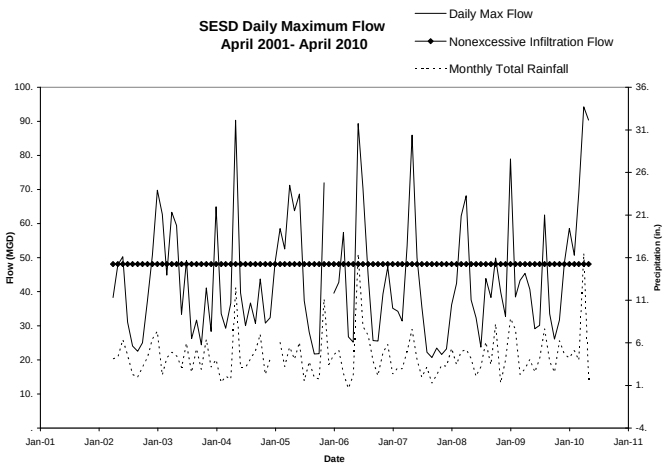


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the Average Monthly Flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

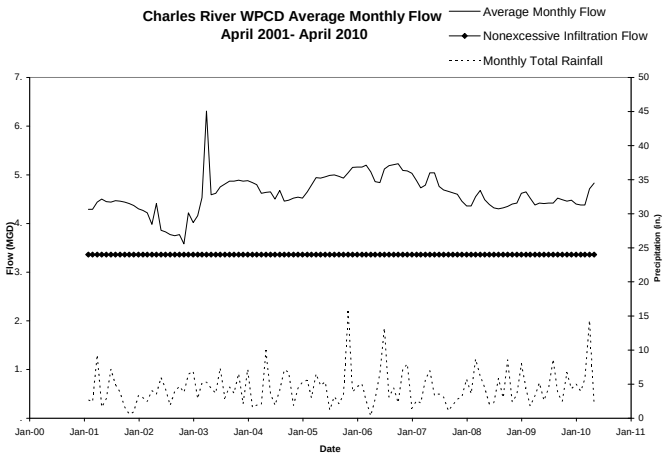
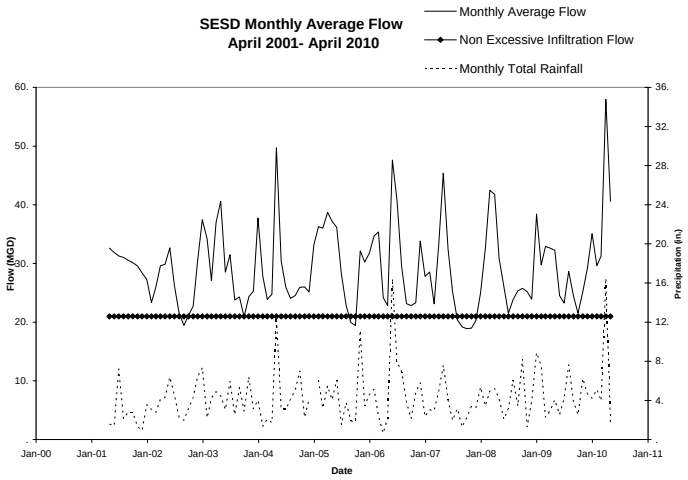


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



II. Flow Trends

Figures 5 and 6 show the trend in Maximum Daily Flows over the period during which these regional facilities have been responsible for implementing cooperative I/I reduction programs with the satellite collection systems. The Maximum Daily Flow reflects the highest wet weather flow for each month. The trend over this time period has been of increasing Maximum Daily Flow, indicating that I/I has not been reduced in either system despite the permit requirements.

Figure 5. CRPCD Daily Maximum Flow Trend

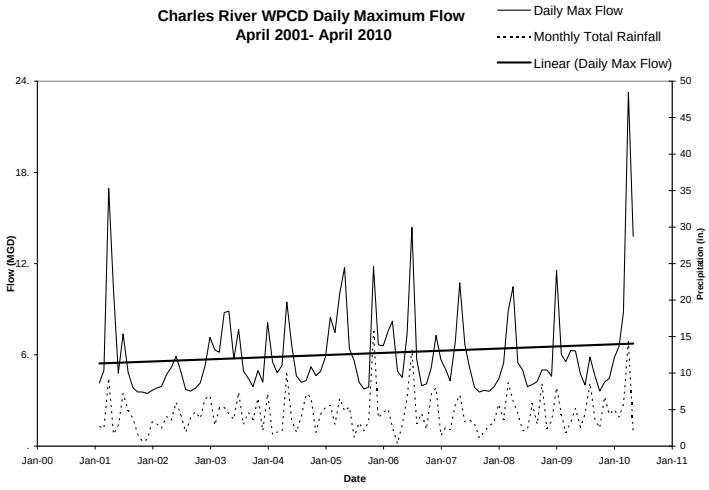
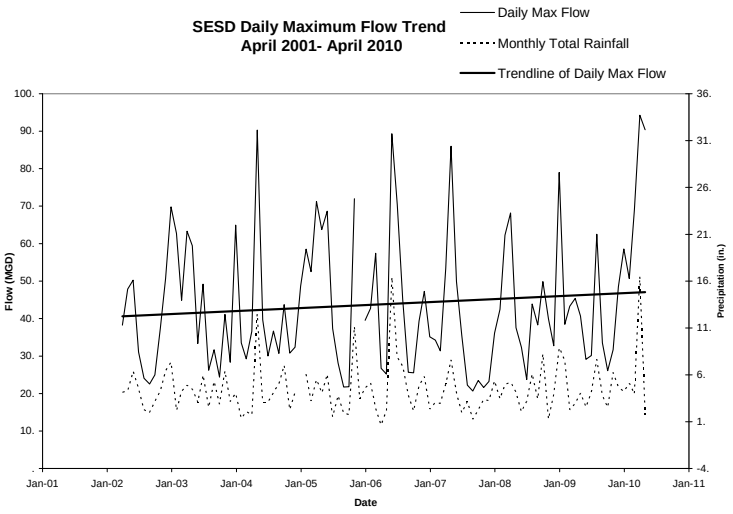


Figure 6. SESD Daily Maximum Flow Trend



III. Violations Associated with Wet Weather Flows

Both the CRPCD and SESD have experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Twelve of the sixteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

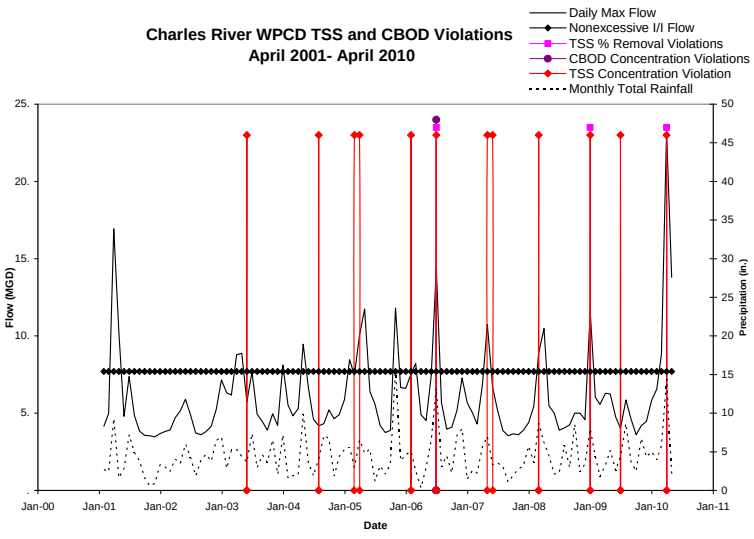
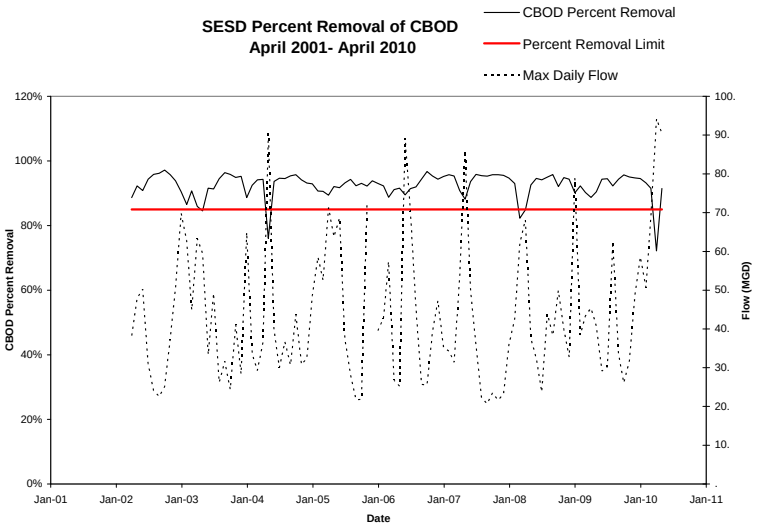


Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SESD system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, both Franklin and Bellingham have reported SSOs between 2006 and 2009.

Exhibit C

List of municipal satellite collection systems that have had SSOs

Exhibit D

Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]

Dear _____:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has "access to substantially identical information," the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver "substantially identical information," and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Contact] at [Contact Info].

Sincerely,

Regional Administrator

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

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

DATE OF PUBLIC NOTICE PERIOD: **October 8, 2020 - November 9, 2020**

PERMIT NUMBER: **MA0100412**

PUBLIC NOTICE NUMBER: **MA-001-21**

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Westborough
235 Turnpike Road
Westborough, MA 01581

NAME AND MAILING ADDRESS OF CO-PERMITEES:

Town of Shrewsbury
Department of Public Works
100 Maple Avenue
2nd Floor
Shrewsbury, MA 01545

Town of Hopkinton
Department of Public Works
83 Wood Street
Hopkinton, MA 01748

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Westborough Wastewater Treatment Facility
238 Turnpike Road
Westborough, MA 01581

RECEIVING WATER AND CLASSIFICATION:

Assabet River (Class B)

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Westborough WWTP, which discharges treated domestic and industrial wastewater. Sludge from this facility is transported to the Upper Blackstone Water Pollution Abatement District for incineration. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. The Massachusetts Department of Environmental Protection (MassDEP) cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft Permit that MassDEP finds necessary to meet these requirements. In addition, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

Evan Lewis
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-4)
Boston, MA 02109-3912
Telephone: (617) 918-1543
Lewis.evan@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by November 9, 2020**,** which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP.

Any person, prior to the close of the public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. 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 if 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.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

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 notify the applicant and each person who has submitted

written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY – REGION 1