

**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”),

**Governor’s Academy
1 Elm Street
Byfield, Massachusetts 01922**

is authorized to discharge from the facility located at

**Governor’s Academy Wastewater Treatment Facility
Elm Street
Byfield, Massachusetts 01922**

to receiving water named

**Unnamed Tributary to the Mill River
Parker River Watershed**

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

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

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

This permit supersedes the permit issued on September 28, 2011.

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** (PFAS Analyte List) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

KENNETH
MORAFF

Digitally signed by KENNETH
MORAFF
Date: 2023.12.18 14:27:39 -0500

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

¹ Procedures for appealing EPA’s Final Permit decision may be found at 40 CFR § 124.19.

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 Unnamed Tributary to the Mill 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	0.052 MGD ⁵	---	---	Continuous	Recorder
Effluent Flow ⁵	Report MGD	---	Report MGD	Continuous	Recorder
BOD ₅	5.8 mg/L 2.5 lb/day	5.8 mg/L 2.5 lb/day	Report mg/L	1/Week	Composite
BOD ₅ Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	5.8 mg/L 2.5 lb/day	5.8 mg/L 2.5 lb/day	Report mg/L	1/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range ⁶	6.5 - 8.3 S.U.			5/Week	Grab
<i>Enterococci</i> ⁷	35 cfu/100 mL	---	104 cfu/100 mL	1/Week	Grab
Fecal Coliform ⁷	14 cfu/100 mL	---	28 cfu/100 mL	1/Week	Grab
Dissolved Oxygen (April 1 - October 31)	≥ 5.0 mg/L			5/Week	Grab
Ammonia Nitrogen	1 mg/L	1 mg/L	1.5 mg/L	1/Week	Composite
Total Copper	13 µg/L	---	20 µg/L	2/Month	Composite
Total Lead ¹¹	5 µg/L	---	---	2/Year	Composite
Total Kjeldahl Nitrogen ⁸	Report mg/L	---	Report mg/L	1/Quarter	Composite
Nitrate + Nitrite ⁸	Report mg/L	---	Report mg/L	1/Quarter	Composite
Total Nitrogen ⁸	Report mg/L Report lb/day	---	Report mg/L	1/Quarter	Calculation
PFAS Analytes ⁹	---	---	Report ng/L	2/Year	Grab
Adsorbable Organic Fluorine ¹⁰	---	---	Report ng/L	2/Year	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Whole Effluent Toxicity (WET) Testing^{11,12}					
LC ₅₀	---	---	≥ 100 %	2/Year	Composite
C-NOEC	---	---	≥ 100 %	2/Year	Composite
Hardness	---	---	Report mg/L	2/Year	Composite
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Composite
Total Aluminum	---	---	Report mg/L	2/Year	Composite
Total Cadmium	---	---	Report mg/L	2/Year	Composite
Total Copper	---	---	Report mg/L	2/Year	Composite
Total Nickel	---	---	Report mg/L	2/Year	Composite
Total Lead	---	---	Report mg/L	2/Year	Composite
Total Zinc	---	---	Report mg/L	2/Year	Composite
Total Organic Carbon	---	---	Report mg/L	2/Year	Composite

Ambient Characteristic ¹³	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Hardness	---	---	Report mg/L	2/Year	Grab
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Grab
Total Aluminum	---	---	Report mg/L	2/Year	Grab
Total Cadmium	---	---	Report mg/L	2/Year	Grab
Total Copper	---	---	Report mg/L	2/Year	Grab
Total Nickel	---	---	Report mg/L	2/Year	Grab
Total Lead	---	---	Report mg/L	2/Year	Grab
Total Zinc	---	---	Report mg/L	2/Year	Grab
Total Organic Carbon	---	---	Report mg/L	2/Year	Grab
Dissolved Organic Carbon ¹⁴	---	---	Report mg/L	2/Year	Grab
pH ¹⁵	---	---	Report S.U.	2/Year	Grab
Temperature ¹⁵	---	---	Report °C	2/Year	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
PFAS Analytes ⁹	---	---	Report ng/L	2/Year	Grab
Adsorbable Organic Fluorine ¹⁰	---	---	Report ng/L	2/Year	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
PFAS Analytes ⁹	---	---	Report ng/g	2/Year	Grab ¹⁶

Footnotes:

1. All samples shall be collected in a manner to yield representative data. 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. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and MassDEP (“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 either to 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 the following 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 monthly average limits for bacteria (including *E. coli* and fecal coliform) are expressed as a geometric mean. Fecal coliform and *enterococci* grab samples shall be taken at the same time during the 2 hour period of maximum diurnal flow.
8. 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.

$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$

$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \# \text{ of days in the month}] * 8.34$$

9. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment C. Monitoring and reporting shall be done twice per year, once in each 3rd calendar quarter and once in each 4th calendar quarter. This reporting requirement for the listed PFAS parameters takes effect the first full 3rd or 4th calendar quarter following six months after the effective date of the permit.
10. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. Monitoring and reporting shall be done twice per year, once in each 3rd calendar quarter and once in each 4th calendar quarter. This reporting requirement for the listed PFAS parameters takes effect the first full 3rd or 4th calendar quarter following six months after the effective date of the permit.
11. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia* only. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending June 30th and September 30th. 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.

Sampling to fulfill the lead 2/year monitoring requirement shall be done during the calendar quarters ending June 30th and September 30th.
12. 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.

13. 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.
14. 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.
15. 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.
16. 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>.

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 facility 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 facility by a source introducing pollutants into the facility 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 facility; and
 - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility.
9. Pollutants introduced into the facility by a non-domestic source (user) shall not pass through the facility or interfere with the operation or performance of the works.

10. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any Significant Industrial Users (SIUs) discharging into the facility subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.

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. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). Providing that it contains the information required in Part II.D.1.e, submission of the MassDEP SSO Reporting Form (described in Part I.B.3 below) may satisfy the requirement for a written report. 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 (including latitude and longitude) 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 TREATMENT AND CONTROL FACILITIES

1. Adaptation Planning
 1. *Adaptation Plan.* Within the timeframes described below, the Permittee shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS)² and/or sewer system³ that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on

² “Wastewater Treatment System” or “WWTS” means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

³ “Sewer System” refers to the sewers, pump stations, manholes and other infrastructure use to convey sewage to the wastewater treatment facility from homes or other sources.

EPA's Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

Component 1: Identification of Vulnerable Critical Assets. Within 24 months of the effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets⁴ and related operations⁵ within the WWTS and/or sewer system which they own and operate, as applicable, that are most vulnerable due to major storm and flood events⁶ under baseline conditions⁷ and under future conditions.⁸ This information shall be provided to EPA upon request. For these critical assets and related operations, the Permittee shall assess the ability of each to function properly in the event of impacts⁹ from major storm and flood events in terms of effluent flow (e.g., bypass, upset or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

*Component 2: Adaptive Measures Assessment.*¹⁰ Within 36 months of the effective date of the permit, the Permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an assessment of adaptive

⁴ A "critical asset" is an asset necessary to ensure the safe and continued operation of the WWTS or the sewer system and ensure the forward flow and treatment of wastewater in accordance with the limits set forth in this permit.

⁵ "Asset related operations" are elements of an asset that enable that asset to function. For example, pumps and power supply enable the operation of a pump station.

⁶ "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding, including flooding caused by sea level change. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal according to location and season.

⁷ "Baseline conditions" refers to the 100-year flood based on historical records.

⁸ "Future conditions" refers to projected flood elevations using one of two approaches: a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available; b) Freeboard Value and 500-year floodplain Approach: The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% -annual-chance flood) and selecting the higher of the two flood elevations.

⁹ "Impacts" refers to a strong effect on an asset and/or asset-related operation that may include destruction, damage or ineffective operation of the asset and/or asset operation. Impacts may be economic, environmental, or public health related.

¹⁰ The Permittee may complete this component using EPA's Climate Resilience Evaluation and Awareness Tool (CREAT) Risk Assessment Application for Water Utilities, found on EPA's website Creating Resilient Water Utilities (CRWU) (<https://www.epa.gov/crwu>), or methodology that provides comparable analysis.

measures,¹¹ and/or, if appropriate, the combinations of adaptive measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s). This information shall be provided to EPA upon request. The Permittee shall identify the critical assets and related operations at the highest risk of not functioning properly under such conditions and, for those, select the most effective adaptation measures that will ensure proper operation of the highest risk critical assets and the system as a whole.

Component 3: Implementation and Maintenance Schedule. Within 48 months of the effective date of the permit, the Permittee shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks¹² identified in Component 1, including the methodology and data used to derive future conditions¹³ used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed.

2. *Credit for Prior Assessment(s) Completed by Permittee.* If the Permittee have undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).
3. *Adaptation Plan Progress Report.* The Permittee shall submit an Adaptation Plan Progress Report on the Adaptation Plan for the prior calendar year that documents progress made toward completing the Adaptation Plan and, following its completion,

¹¹ “Adaptive Measures” refers to physical infrastructure or actions and strategies that a utility can use to protect their assets and mitigate the impacts of threats. They may include but are not limited to: building or modifying infrastructure, utilization of models (including but not limited to: flood, sea-level rise and storm surge, sewer/collection system, system performance), monitoring and inspecting (including but not limited to: flood control, infrastructure, treatment) and repair/retrofit.

¹² In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.

¹³ See footnote 8.

any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk assessment. The first Adaptation Progress Report is due the first March 31 following completion of the Identification of Critical Vulnerable Assets (*Component 1*) and shall be included with the annual report required in Part I.C.3 below each year thereafter. The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTs or sewer system.

2. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit. The Permittee shall complete the following activities for the collection system which it owns:

a. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

b. Preventive Maintenance Program

The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

c. Infiltration/Inflow

The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

d. Sewer System Mapping

Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The

sewer system information shown on the map shall be based on current conditions and shall be kept up-to-date. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;
- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);
- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) The scale and a north arrow; and
- (11) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee shall develop and implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns.

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

- i. A description of the collection system management goals, staffing, information management, and legal authorities;
 - ii. 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
 - iii. A schedule for the development and implementation of the full *Sewer System Operation and Maintenance Plan* including the elements in Parts I.C.2.e.(2)(i) through (2)(viii) below.
- b. The full Sewer 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:
 - i. The required submittal from Part I.C.2.e.(1) above, updated to reflect current information;
 - ii. A preventive maintenance and monitoring program for the collection system;
 - iii. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
 - iv. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
 - v. 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;
 - vi. 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; and
 - vii. An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

3. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its O&M Plans 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 Sewer System O&M Plan required by Part I.C.2.e.(2) 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;
- f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 0.052 MGD design flow (0.042 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.
- g. The Adaptation Plan Progress Report described in Part I.C.1.c above.

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS

1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 CFR § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

2. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.
3. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any SIUs discharging into the POTW or facility subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.
4. Beginning the first full calendar year after the effective date of the permit, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:
 - Commercial Car Washes
 - Platers/Metal Finishers
 - Paper and Packaging Manufacturers
 - Tanneries and Leather/Fabric/Carpet Treaters
 - Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
 - Landfill Leachate
 - Centralized Waste Treaters
 - Known or Suspected PFAS Contaminated Sites
 - Fire Fighting Training Facilities
 - Airports
 - Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment C. The industrial discharges sampled and the sampling results shall be summarized and submitted to EPA and copy the state as an electronic attachment to the March discharge monitoring report due April 15 of the calendar year following the testing.

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 § 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.

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.

G. SPECIAL CONDITIONS

There are no special conditions.

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 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/>.

4. 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 for reduction in testing frequency;
- (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing;
- (5) Report of new industrial user commencing discharge; and
- (6) Report received from existing industrial user.

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

5. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

6. 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**

7. 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
- c. The Permittee shall verbally notify the Massachusetts Division of Marine Fisheries within 4 hours of any emergency condition, plant upset, bypass, SSO discharges or other system failure which has the potential to violate bacteria permit limits. Within 24 hours a notification of a permit excursion or plant failure shall be sent to the following address:

**Division of Marine Fisheries
Shellfish Management Program
30 Emerson Avenue
Gloucester, MA 01930
978-491-6244**

I. STATE 401 CERTIFICATION CONDITIONS

This Permit has received state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate the following State water quality certification requirements into the Final Permit.

1. Pursuant to M.G.L. c. 21, §§ 26-53, and the Massachusetts Surface Water Quality Standards published at 314 CMR 4.00:
 - a. Notwithstanding any other provision of the 2023 NPDES permit to the contrary, PFAS monitoring results for the 2023 NPDES permit and for the 2023 Massachusetts Surface Water Discharge ("SWD") Permit shall be reported to MassDEP's electronic database (eDEP) in accordance with the information

available at the following website: the [https://www.mass.gov/how-to/submit-wastewater-residuals-pfas-data-via-edep.](https://www.mass.gov/how-to/submit-wastewater-residuals-pfas-data-via-edep), or as otherwise specified, within 30 days after the permittee receives the sampling results.

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:

<https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>

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°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 ADW with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 EPA Region 1 website at <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for important details on alternate dilution water substitution requests.

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS¹

1. Test type	Static, non-renewal
2. Temperature (°C)	20 ± 1°C or 25 ± 1°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 <u>Selenastrum</u> 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	≥ 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.

February 28, 2011
(updated links/addresses 2023)

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|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C)	20 + 1 ° C or 25 + 1°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	> 0.5, must bracket the permitted RWC

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|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
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:

- 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)
- 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
- 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-Kärber
- Trimmed Spearman-Kärber
- 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 <https://www.epa.gov/cwa-methods/whole-effluent-toxicity-methods>. 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° 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 with supporting documentation must be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

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 <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) 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 \geq 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.

<u>Parameter</u>	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 www.epa.gov/cwa-methods/whole-effluent-toxicity-methods

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-1-003, June 2002, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location: <https://www.epa.gov/aboutepa/epa-region-1-new-england> (click on NPDES, EPA Permit Attachments).

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 than 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: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

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¹Updated July 17, 2018 to fix typographical errors.

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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

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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

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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

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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

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- (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

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- 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

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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.

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- 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

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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

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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

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“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 96-483 and 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

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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

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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.

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC₅₀ = 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

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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).

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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

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(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

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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

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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.

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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

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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. MA0030350
GOVERNOR'S ACADEMY WASTEWATER TREATMENT FACILITY
BYFIELD, 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 Governor's Academy Wastewater Treatment Facility (WWTF) located in Byfield, 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 # MA0030350 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From May 1, 2023 through May 30, 2023, EPA solicited public comments on the Draft Permit.

EPA received comments from:

- The Governor's Academy, dated May 24, 2023

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 Michele Duspiva, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1682; Email duspiva.michele@epa.gov.

I. Summary of Changes to the Final Permit

1. Footnote 11 of Part I.A Table 1 has been updated to state that the lead monitoring should be done during the calendar quarters ending June 30th and September 30th. See Response 3.
2. The reference to the NH pH requirement has been removed from Footnote 6 of Part I.A Table 1 of the Final Permit. See Response 6.
3. Part I.C.2.e.(3).vii has been removed from the Final Permit. See Response 11.

4. The Major Storm and Flood Events Plan (now renamed Adaptation Plan) requirements at Part I.C.1 of the Final Permit have been revised as described in Appendix A of this Response to Comments.

II. Responses to Comments

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

A. Comments from Wendy Reed, Environmental Health and Safety Manager, The Governor's Academy:

Comment 1

WWTF Discharge Receiving Water – Part I.A.1. Page 2 of 26

The existing NPDES Permit identifies the WWTF's receiving water as an unnamed intermittent freshwater tributary to the Mill River. This unnamed tributary is actually a stormwater drainage channel that originates from a 24-inch culvert adjacent to Elm Street and runs approximately 450 feet along the fence line of the Academy's WWTF before receiving the WWTF discharge. The unnamed tributary then receives discharge from a second drainage channel along the west side of Route 1 and two additional stormwater catch basins at the intersection of Elm Street and Route 1 before passing through a culvert under Route 1. A drainage channel along the East side of Route 1 also discharges into the unnamed tributary before it reaches the Mill River. The total distance from the WWTF discharge to the Mill River is 480 feet. See Attachment 1 for an aerial map of this area.

Designating the unnamed tributary as the receiving water for the WWTF discharge does not take the local hydrology and true water quality impacts of the discharge into consideration. Both the short length of the unnamed tributary before discharging into the Mill River, and the multiple roadway runoff inputs from Route 1 and Elm Street before the unnamed tributary and Mill River confluence, minimize any effluent related impacts to the unnamed tributary before it reaches the Mill River. All of the water quality discussion in the Fact Sheet focuses on impacts to the Mill River instead of the unnamed tributary, and in fact, the Fact Sheet uses data provided by the Academy from monthly monitoring of the Mill River to demonstrate that the limitations are protective.

The Academy believes that a designation of the Mill River as the receiving water for permitted WWTF effluent discharge would provide a more practical and representative approach to permitting. The uses of the Mill River as it transitions to salt water and into the Parker River are what should drive the protectiveness needed in effluent limitations. If additional sampling and analysis of the Mill River were required to demonstrate that there is no impact to the ambient water quality or the various uses of the Mill River, the Academy would be agreeable to proposing and implementing such a program.

[EPA note: Attachment 1 was reviewed but not reproduced here.]

Response 1

EPA confirms that the receiving water for this discharge is the unnamed tributary. See Section 4.1 of the Fact Sheet. EPA highlights that from the point of discharge downstream before reaching the Mill River, water quality standards must be achieved given that this segment is relatively permanent based on the continuous discharge from this facility. Therefore, it is necessary to protect water quality to support designated uses within this tributary given the potential for exposure to aquatic life in accordance with 40 CFR 122.44(d).¹ Further, EPA confirms that the limits in the Draft Permit, as described in the Fact Sheet, were calculated to be protective of the immediate unnamed freshwater tributary as well as the downstream Mill River. Finally, EPA notes that the only way to change the receiving water designation to the Mill River would be to move the physical location of the outfall pipe into the Mill River.

Comment 2

Copper Limitations – Part I.A.1., Page 2 of 26

While not designed to remove the high concentrations of copper in the Byfield Water District drinking water used on campus, the WWTF currently removes about 80 percent of influent copper. Only a portion of the dissolved fraction of copper passes through the membrane bioreactor (“MBR”) wastewater treatment system and is discharged in the effluent. Because current and draft permit limitations are based on the unnamed tributary being the receiving water, however, the discharge typically exceeds permit limitations (see Comment #1). The Academy has conducted semi-annual Whole Effluent Toxicity (“WET”) Testing since 2005 and routinely meets the acute and chronic toxicity limitations of the permit. This demonstrates that the presence of dissolved copper in the WWTF effluent does not cause toxicity to aquatic organisms, even at concentrations in exceedance of the current and draft permit limitations.

The Academy has been collecting monthly samples of the Mill River for over a year and has shared this copper and hardness data, along with a calculation of 7Q10 for the Mill River, with the EPA. This data shows that current effluent copper concentrations do not increase the Mill River copper concentrations above current acute and chronic aquatic toxicity criteria.

We therefore request that the designation of the NPDES receiving water be changed to the Mill River and the effluent copper limitations recalculated. These would be entirely protective of the habitat and human uses of the Mill River and reflect actual water quality impacts of the presence of copper in the WWTF discharge.

Response 2

Regarding the receiving water, see Response 1.

Regarding the commenters assertion that copper limits are not necessary because the Facility has passed previous WET tests, EPA clarifies that the copper limits are necessary to protect state Water Quality Standards. The Clean Water Act (CWA) Section

¹ As noted in the Fact Sheet at 13, the receiving water is freshwater and is considered a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (“CMR”) 4.06(6)(b). The MA WQS at 314 CMR 4.05(3)(b) states that Class B “waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation.”

301(b)(1)(C) requires that NPDES permits include effluent limits to achieve state water quality standards whenever there is reasonable potential to exceed a state water quality standard, pursuant to 40 CFR § 122.44(d)(1)(i). The regulation states:

“Limitations must control all pollutants or pollutant parameters (either conventional, nonconventional or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including State narrative criteria for water quality.”

For pollutants with an existing water quality-based effluent limit (WQBEL), EPA notes that the analysis described in 40 CFR § 122.44(d)(1)(i) has already been conducted in a previous permitting action demonstrating that there is reasonable potential to cause or contribute to an excursion of water quality standards (WQS). Given that the permit already contains WQBELs for copper based on the prior analysis and copper continues to be discharged from the facility, EPA has determined that there is still reasonable potential for the discharge of copper to cause or contribute to an excursion of WQS in the unnamed tributary. Therefore, the copper limits will be carried forward.

With regards to the results of the WET tests, please be aware that since 1991, EPA has maintained a policy that biological toxicity assessments and chemical-specific tests are independently applicable. The “Policy on the Use of Biological Assessments and Criteria in the Water Quality Program” states, in part:

Because biosurvey, chemical-specific, and toxicity testing methods have unique as well as overlapping attributes, sensitivities, and program applications, no single approach for detecting impact should be considered uniformly superior to any other approach. EPA recognizes that each method can provide valid and independently sufficient evidence of aquatic life use impairment, irrespective of any evidence, or lack of it, derived from the other two approaches. The failure of one method to confirm an impact identified by another method would not negate the results of the initial assessment. This policy, therefore, states that appropriate action should be taken when any one of the three types of assessment determines that the standard is not attained. States are encouraged to implement and integrate all three approaches into their water quality programs and apply them in combination or independently as site-specific conditions and assessment objectives dictate.²

See the reference policy for further explanation and legal basis. Therefore, EPA finds that a record of meeting effluent limits for chronic and acute WET tests, does not negate the need for a copper limit.

EPA appreciates the data collection done by the Permittee in the Mill River and notes the data provided were used to confirm that the copper limits established to protect the

² 1991 Tudor-Davies Memo transmitting the “Final Policy on Biological Assessments and Criteria.” Available at <https://www.epa.gov/sites/default/files/2015-10/documents/final-policy-biological-memo.pdf>

unnamed tributary are also protective of downstream Mill River (using the same mass balance equation in Appendix B of the Fact Sheet). Therefore, the limits do not need to be more stringent.

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

Comment 3

Monitoring Clarifications – Part I.A.1, Pages 2 and 3 of 26

The Academy notes duplication in testing requirements for the following three parameters:

- a. **Lead** - the current permit includes effluent sampling and analysis for lead twice yearly and specifies March and December. There are no months noted for lead sampling in the Draft Permit and the Academy requests that the samples required for WET Testing be allowed to fulfill this requirement.
- b. **Ammonia Nitrogen** - weekly ammonia nitrogen sampling and analysis is required in the Draft Permit on page 2 and also as part of semi-annual toxicity testing on page 3. The Academy proposes using the same sample to fulfill both requirements that week.
- c. **Copper** – The Academy requests that the results from semi-monthly analysis for copper be used to satisfy WET testing requirements.

Response 3

Regarding lead monitoring, EPA confirms that the effluent lead samples taken for the WET tests may also be used to fulfill the twice per year lead effluent sampling requirement. To allow for this, footnote 13 of Part I.A Table 1 in the Final Permit has been updated to state that the lead monitoring should be done during the calendar quarters ending June 30th and September 30th.

Regarding ammonia nitrogen monitoring, EPA confirms that the effluent ammonia nitrogen monitoring required as part of a WET test may also be used to fulfill the weekly ammonia nitrogen monitoring requirement for that week. This allowance does not require any change to the Final Permit.

Regarding copper, EPA clarifies that results from the semi-monthly analysis of copper cannot be used to satisfy part of the WET testing requirements because effluent and ambient characteristics (metals, hardness, etc.) are required to be monitored as part of the WET test water chemistry analysis of the samples used for the WET test. However, EPA notes that the effluent WET testing results for copper could be used to fulfill one of the semi-monthly copper monitoring requirements. This allowance does not require any change to the Final Permit.

Comment 4

PFAS Monitoring, Sampling, and Analysis – Part I.A.1., Page 2 of 26

As a small WWTF without any industrial dischargers, it is unlikely that PFAS contaminants present in the WWTF influent, effluent or sludge originate from campus activities. The Academy understands the concern about the presence of these contaminants in the environment. The burden of participating in an effort to understand its movement through watersheds should not be placed on small dischargers, however, who already face high outside analytical laboratory costs to demonstrate permit compliance.

The Academy estimates that one round of sampling for PFAS contaminants could cost up to \$2,500, which is equivalent to the cost for three months of analytical laboratory services for NPDES permit reporting. It also seems excessive to sample in two consecutive quarters. The Academy requests that PFAS sampling in the Draft Permit be limited to one quarter during lowest ambient flow. The Academy also requests that provisions be added to the Draft Permit to allow for the elimination of sampling following the second year if such sampling shows that Academy operations do not significantly increase PFAS concentrations in its use of town drinking water.

Response 4

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See* CWA § 308. As discussed in the Fact Sheet at 24, 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.” These permitting decisions may include whether there is reasonable potential to cause or contribute to a violation of the State water quality standards in the next permit reissuance, and if there is, to inform the development of numeric effluent limits or pollutant minimization practices, or some combination.

Regarding cost, EPA acknowledges that PFAS testing entails an increased cost, however, EPA requires monitoring necessary to characterize the discharge and ensure sufficient data for future permitting decisions.

Regarding monitoring frequency, EPA notes that current guidance³ recommends quarterly PFAS monitoring. However, given that this facility is small (less than 1 MGD) EPA has proposed a frequency in this permit of twice per year. These data will enable EPA to obtain comprehensive and representative information on the sources and quantities of PFAS in the discharge and EPA will use these data to inform future permitting decisions. For these reasons and given the lack of available data at this time, EPA does not agree that a further reduction to once per year would yield sufficient data.

Finally, the comment suggested that EPA incorporate an off ramp to remove PFAS sampling if initial results are similar to town drinking water levels. Given that limited PFAS data for WWTFs are available and that this is a new monitoring requirement for all facilities, EPA does not consider it appropriate to provide any off ramps within this initial permit term. However, EPA will evaluate all available data in the next permit reissuance

³ December 6, 2022 memo, *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*, https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

and may reduce or remove PFAS monitoring depending on updated information and any water quality criteria that may be in effect at that time.

Comment 5

Dilution Water – Attachments A and B, Page 2

These attachments state that collection of dilution water should avoid “areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist”. As noted in Comment #1 of this letter, the drainage channel which the effluent discharges to is heavily impacted by road runoff. As long as this unnamed tributary is designated the receiving water for the Academy’s WWTF effluent, it will be impossible to collect upstream samples that are unaffected by road and storm sewer runoff. The Academy currently has written permission from the EPA to use laboratory prepared dilution water for toxicity testing and requests that this be continued in the Draft Permit.

Response 5

EPA confirms that alternate dilution water for WET tests should be used by a lab when receiving water samples are toxic or *unreliable*. Footnote 12 of Part I.A Table 1 in the Final Permit states, “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 Attachments A and B, Section IV., Dilution Water.” (emphasis added) EPA approvals for alternate dilution water only last for the permit term, as this permit is being renewed the Facility may follow the procedures outlined in Attachments A and B to apply for a new alternate dilution water approval.

Comment 6

Reference to NH – Part I.A.1. Footnote 6, Page 6 of 26

The footnote contains a reference to NH, which is not relevant for this Draft Permit.

Response 6

EPA confirms that the reference to the NH pH requirement was an error, and it has been removed from the Final Permit.

Comment 7

Industrial Users – Part I.A.10., Page 9 of 26 and Part I.E., Page 21 of 26

The Academy owns and manages all land and structures within the WWTF collection system, and all wastewater entering the WWTF collection system originates from domestic and educational activities. There is no possibility that an alternate use such as industrial discharge would occur as long as the Academy is in operation as an educational institution. Many of the requirements in the Draft Permit reflect the range of users in a municipal setting and the lack of control that a POTW has over what types of users might discharge into their collection system. We request that the references to and conditions for Industrial Users be deleted from the Draft Permit.

Response 7

EPA acknowledges that the Facility does not currently accept any industrial wastewater flows and that the Facility has no plans to do so in the future. Therefore, EPA notes that

Parts I.A.10 and I.E do not require the Permittee to do anything. However, the requirements are maintained in the Final Permit in case the Facility accepts industrial wastewater in the future.

Comment 8

Unauthorized Discharges – Part I.B.2., Page 9 of 26

The requirement to provide notice on a public website for 12 months following an unauthorized discharge is not relevant for a private WWTF such as the Academy's. While the Academy's website is open to the public, it is focused on prospective students and their families, who do not live on campus or even necessarily within Massachusetts. It is not comparable to a municipality's website where notices of such unauthorized discharges might be useful to the general public. The Academy believes that the notices to the EPA and State required in the Draft Permit are adequate to protect the public and the environment. We therefore request that this requirement be omitted from the Draft Permit.

Response 8

EPA disagrees that public notification of SSOs that impact a surface water or the public are "not relevant for a private WWTF such as the Academy's." Rather, EPA considers it a necessary protection of public health to notify the public of unauthorized discharges to surface waters that the public may be planning to use, as specified in the Draft Permit, regardless of the size or type of the facility. EPA has authority under the CWA to impose conditions related to the proper operation and maintenance of the treatment plant, and an SSO may be the result of an operation and maintenance malfunction within the collection system.

Further, EPA does not consider notices to EPA and the State sufficient given that neither the DMR reports nor the verbal notification would be available to the public to make timely decisions about recreational use of the water body. Therefore, timely notice on a publicly available website is necessary. However, EPA notes that the permit does not require public notification of every SSO. Instances when an SSO does not impact a surface water or the public, such as a low volume SSO at a manhole cover, do not need to be posted. Therefore, this comment does not result in any change to the Final Permit.

If the Permittee considers that the Academy's existing website is inappropriate for these notices, they are welcome to create an alternate website to make these notices publicly available or to coordinate with the local municipality to post these notices on the municipality's website, as appropriate.

Comment 9

WWTF and Sewer System Major Storm Events Plans/Annual Reporting – Parts I.C.1.a., Page 10 of 26 and I.C.2.e.(2), Page 15 of 26

Development of these Plans represent a significant engineering level effort, which is far beyond the technical skills and part time staffing levels of the Academy's WWTF staff. We note that these requirements were not included in the General NPDES Permit for Small Facilities in MA and NH, and question why they are being imposed in this Draft Individual Permit. The Academy's annual average daily flow is less than 24,000 gallons per day, and while we are

beginning to think about climate change impacts and how best to protect our system, we do not believe that the type of evaluation and the regulated time lines proposed in the Draft Permit are appropriate for such a small WWTF. We therefore ask that these requirements, as well as the associated annual reporting requirements, be removed.

Response 9

Regarding the comment that this requirement was not included in the Small WWTF General Permit, EPA notes that this requirement is newly developed in 2023 and was not included in any previous permits. Going forward, EPA will require Adaptation Plans be developed under NPDES permits for all wastewater treatment plants in Massachusetts because, as described in Appendix A below, resilience planning is an important aspect of operation & maintenance and compliance with effluent limitations.

Nevertheless, EPA considered the points raised in this comment and has made several updates to improve and clarify the requirements accordingly. See Appendix A below.

Comment 10

Sewer System Mapping – Part I.C.2.d., Page 14 of 26

The Academy currently has and maintains an engineered map of the collection system which is used for annual Infiltration and Inflow Reporting. As a private WWTF, we do not have access to the GIS systems used for municipal mapping such as MiMAP. Creating a GIS sewer system map is beyond the skills and resources of our staff, and hiring a contractor to do so would require a significant expenditure. Because the existing collection system map well serves the requirements of our system, we do not believe that creating a GIS map for public use is a useful or necessary effort and request that this requirement be removed.

Response 10

The intention of this requirement is to ensure the Permittee has a thorough knowledge of the collection system in order to perform proper operation and maintenance practices that may prevent violations of water quality standards in the future. EPA agrees with the comment and has removed the requirement for a publicly available GIS map from the Final Permit. Rather, the owner of the collection system is free to prepare the map in whatever way they deem appropriate to best aid the proper operation and maintenance of the collection system.

See Appendix A below.

Comment 11

Educational Public Outreach - Part I.C.2.e.(3)vii, page 19 of 26

The Educational Public Outreach program targeted at reducing inflow is not relevant for the Academy. The Academy owns all buildings and residences on campus and is responsible for their maintenance and upkeep. Because we have control over the installation and use of sumps and roof drains on campus, there is no direct benefit to educating the public about their use. As part of the Inflow and Infiltration Plan completed under the current NPDES Permit, all sumps and roof drains have been removed from the WWTF collection system. Our staff are well aware of the need to maintain this and would not benefit from such an education program, and we ask that this requirement be removed.

Response 11

EPA agrees that an educational public outreach program is not necessary for this Facility as it owns and maintains all of the properties discharging to the WWTF. Part I.C.2.e.(3).vii has been removed from the Final Permit.

Comment 12

Overflow Emergency Plan – Part I.C.2.e. (3)viii, page 20 of 26

The content of or need for an Overflow Emergency Plan in the Sewer System O&M Plan is unclear. Notification to the EPA, Ma DEP and Division of Marine Fisheries in the event of an overflow, unanticipated bypass or upset is already required as part of the Draft Permit. Any further action would be specific to the event and difficult to identify ahead of time in a comprehensive plan. This requirement seems redundant and we ask that it be removed from the O&M Plan requirements.

Response 12

EPA disagrees that this requirement is redundant and instead clarifies that the goal of this Overflow Emergency Response Plan is for the Permittee to consider the potential types of emergency overflows that may occur (*e.g.*, from floods or plant failure) and to be prepared to respond in a manner that minimizes impact to public health and the environment. If further clarification is needed to develop this plan, the Permittee should feel free to contact EPA and MassDEP.

Appendix A

General Response to Comments on the Appropriateness of, and the Authority for, the Inclusion of the Wastewater Treatment System and Sewer System Adaptation Plan (“General Response”)

EPA recognizes that the Major Storm and Flood Events Plan (in the Final Permit, and in this Response to Comments, that plan is now referred to as an “Adaptation Plan”) proposed in the Draft Permit and finalized here is a new requirement that builds on existing operation and maintenance practices.⁴ EPA provides this General Response to further explain the basis for and importance of this provision. In so doing, EPA also responds to many of the comments raised regarding the Draft Permit.

In Section A of the General Response, EPA discusses the necessity for requiring Adaptation Plans at wastewater treatment systems (“WWTS”) and sewer systems⁵ and provides some examples of how major storm and flood events can impact facility operations. In Section B of the General Response, EPA discusses the various components and proper scope of the Adaptation Plans. In Section C of the General Response, EPA sets forth the legal basis for its decision to require wastewater treatment systems and sewer systems to develop Adaptation Plans.

A. Necessity for Wastewater Treatment System and Sewer System Adaptation Planning

Wastewater treatment systems and sewer systems are crucial in helping protect human health and the environment and providing critical services to the communities that they serve. Many wastewater treatment facilities and associated sewer system pump stations are located at low elevations (to maximize flow via gravity) within riverine or coastal floodplains and are at risk of increased flooding and other impacts from major storm events. As noted in a 2016 report by the New England Interstate Water Pollution Control Commission⁶ wastewater systems are already facing severe effects due to major storm and flood events and need to better adapt to this new reality:

⁴ For brevity, this Response to Comments document refers to “Permittee” throughout; however, this reference also includes all “Co-Permittee(s)” subject to the applicable permit requirements.

⁵ The Clean Water Act authorizes EPA, as permit issuer, to issue permits for “publicly owned treatment works” (POTWs). CWA § 402. POTWs comprise wastewater treatment systems and sewer systems. 40 C.F.R. §§ 122.2, 403.3(q); *In re Charles River Pollution Control District*, 16 EAD 623, 635 (EAB 2015) (“POTW treatment plants, like the satellite sewage collection systems that convey wastewater to the plants, are components of a POTW.”) To more precisely and accurately describe the permit requirements, the Permit and this Response to Comments refer to “wastewater treatment system(s)” and “sewer system(s)” or, in some instances, both.

“Wastewater Treatment System” or “WWTS” means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

⁶ “Preparing for Extreme Weather at Wastewater Utilities: Strategies and Tips, New England Interstate Water Pollution Control Commission” (September 2016) pg. 2, https://www.neiwpcc.org/neiwpcc_docs/9-20-2016%20NEIWPCC%20Extreme%20Weather%20Guide%20for%20web.pdf

In the Northeast and throughout the world, extreme storm events are growing in frequency and force. Hurricanes and blizzards threaten the operation of wastewater infrastructure and in some cases the infrastructure itself. Consequently, wastewater facilities should be made more resilient through preparedness planning and physical upgrades.

In the Northeast in the last five years Hurricanes Irene (2011) and Sandy (2012), and winter blizzards such as the February 2013 northeaster, produced widespread economic harm. Sandy caused nearly 11 billion gallons of sewage to be released into coastal waters, rivers, and other bodies of water as power outages and storm surge overwhelmed wastewater-treatment plants. 94% of these releases were a result of flooding and storm surge as waters overwhelmed sewage-treatment plants.

As a result, addressing the ongoing challenges and the increasing risks faced by wastewater infrastructure systems nationwide - reduction or failure of system services resulting in discharges of untreated or partially treated sewage, flooding, physical damage to assets, impacts to personnel, to name just some of the possible outcomes - are a priority for EPA and a host of federal and state agencies, as well as regional and local governmental bodies. Addressing these challenges is also a priority for many wastewater treatment managers across the country. As noted in a 2019 study,⁷ which surveyed wastewater treatment systems in Connecticut, 78% of wastewater managers had made adaptive changes that ranged from low-cost temporary adaptive changes to a few who described major changes that addressed redesign or the rebuilding of WWTPs; of those who had made changes, half “did so to improve resiliency to withstand the worst storm experienced by the wastewater system to date.”⁸

Flooding and other major storm events can lead to a variety of, and more frequent, WWTS and sewer system failures. One recent analysis suggests that one-third of 5,500 wastewater treatment plants analyzed from around the country would be at risk of flooding in the event of a major storm.⁹ System failures, such as backups of untreated wastewater into the collection system and potentially into buildings and connections, bypasses of pollution treatment, and/or discharges of raw sewage into the environment are some of the potential impacts that may become more frequent.¹⁰

⁷ “Kirchhoff, C.J. and P.L. Watson. 2019. “Are Wastewater Systems Adapting to Climate Change?” *Journal of the American Water Resources Association*, 1-12. pg.1. <https://doi.org/10.1111/1752-1688.12748>. (Citations omitted in quote).

⁸ *Id.* at pgs. 5, 8.

⁹ “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the U.S.” (August 10, 2023), <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e>

¹⁰ See EPA’s [Resilient Strategies Guide](https://www.epa.gov/crwu/resilient-strategies-guide-water-utilities#/resources/646) (noting that “[u]tilities are increasingly recognizing that future extreme weather events, energy prices and ecological conditions may not be predictable based on historical observations. These shifts may require utilities to change how they operate and manage their resources.”) <https://www.epa.gov/crwu/resilient-strategies-guide-water-utilities#/resources/646>; EPA Memorandum, “Re-Instatement of Federal Flood Risk Management Standard for State Revolving Fund Programs,” Thompkins, Anita Maria and Stein, Raffael to Water Division Directors (April, 2022) <https://www.epa.gov/dwsrf/federal-flood-risk-management-standard-srf-programs> (noting that “[f]looding is one of the most common hazards in the United States accounting for roughly \$17 billion in damage annually between 2010-2018 according to [FEMA], and it will continue to be an ongoing challenge for water infrastructure” with impacts that “can include physical damage to

In New England, as well as elsewhere throughout the country,¹¹ storms and flooding have caused damage to, and in some cases total failure of, wastewater treatment systems and sewer systems. Implementing adaptive measures so that a wastewater treatment plant's wastewater infrastructure may withstand increasingly frequent heavy precipitation and major storm and flood events is, therefore, a critical step in a system's maintenance. Additionally, EPA notes that sometimes, mitigation measures based on adaptation/mitigation plans that were at one point sufficient and that were based on historic, local major storm and flood predictions, may now be insufficient given actual experience with major storms and flooding, the emergence of new data that was not previously available, and more recent projections. And while EPA also acknowledges that it may not always be possible to anticipate all future events (i.e., speed or direction of the wind, temperature fluctuations, the uprooting of trees, etc.) that can exacerbate, or alleviate, the outcomes of major storm and flood events, as illustrated in the examples below, it is important to ensure that existing adaptation plans reflect, as best as possible, all relevant data.

Many New England WWTSs have been negatively impacted by major storm and flood events in recent years. In one notable example from Rhode Island in 2010, historically high flood waters (known as "the Great Flood of 2010") severely impacted several wastewater treatment facilities, including the Warwick Rhode Island Wastewater Treatment Facility.¹² After repetitive flood damages to the WWTS, the City of Warwick had constructed a protective berm, or levee, in the mid-1980s to protect the WWTS from future damages. The levee, originally designed for the 100-year flood at that time, plus three feet of freeboard, was breached by repeated heavy rain events in March 2010. The flooding caused catastrophic impacts to the WWTS which led to the "unthinkable" - the decision to evacuate the plant as the Pawtuxet River crested at 20.79 feet.¹³ The impact to the treatment plant was extreme:

While the flood waters caused no structural damages to the facility's tanks or buildings, anything electrical and everything that was not metal or concrete was ruined. It was at least two days before the river had subsided to the point where staff could begin to access the facility.¹⁴

With a tremendous amount of work and rebuilding, the facility was dewatered, and primary and then secondary treatment were restored. The facility was unable to achieve full compliance with

assets, soil and streambank erosion and contamination of water sources, loss of power and communication, loss of access to facilities, saltwater intrusion, and dangerous conditions for personnel." See also, National Association of Clean Water Agencies ("NACWA"), "NACWA Principles on Climate Adaptation and Resiliency" (noting that "[f]or many clean water agencies, changing weather patterns have become a management reality and responsibility.") https://www.nacwa.org/docs/default-source/conferences-events/2018-ulc/nacwa-statement-of-principles-on-climate_.pdf?sfvrsn=2

¹¹ National Association of Clean Water Agencies ("NACWA") Fact Sheet: "10 Extreme Rain and Flood Events in the US – All in 2022" (listing the "top 10 flood events of 2022" and their effects on water infrastructure from across the country, including the devastating impacts that include loss of life, estimated damages in the range of millions to billions of dollars, and extreme impacts to system services.)

¹² Holbrook, Nicolas Q., The Flood Crews of 2010: A History of Rhode Island's 2010 Floods as Told By The State's Wastewater Collection and Treatment Operators, Rhode Island DEM, Office of Water Resources (2017) <https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/floodcrews2010.pdf>

¹³ Id. at 13.

¹⁴ Id.

its permit limits for a period of about 80 days.¹⁵ Due to this flooding, the facility updated their flood protection plans based on local storm and flooding data and implemented improvements for the WWTS, including raising the levee to protect the WWTS from inundation caused by a 500-year flood event.¹⁶



Figure 1: The flooded Warwick wastewater facility on Wednesday, March 31, 2010. (State of Rhode Island)

More recently, in July 2023, Vermont experienced a major storm and flooding event characterized by the National Weather Service as “catastrophic flash flooding and river flooding” with upwards of three to nine inches of rain falling in 48 hours, an amount that in some places of Vermont, amounted to the “greatest calendar day rainfall “since records began in 1948.”¹⁷ According to local reporting, operations at 33 wastewater treatment systems were disrupted, and several facilities, like those in the towns of Ludlow and Johnson, were rendered inoperable and will need significant reconstruction.¹⁸ As one news outlet reported about the conditions in Ludlow:

¹⁵ Burke, Janine L., Executive Director, Warwick Sewer Authority, “The Great Flood of 2010: A Municipal Response,” pg. 237 Journal NEWEA (September 2012)
<https://www.warwicksewerauthority.com/pdfs/floodmitigation/NEWEA%20Journal%20Article%20on%20WSA%20Flood%20Response.pdf>

¹⁶ Preliminary Design Report, Wastewater Treatment Facility Flood Protection and Mitigation Design, Warwick, Rhode Island (Prepared by AECOM for Warwick Sewer Authority, July 12, 2012)
<https://www.warwicksewerauthority.com/pdfs/floodmitigation/Warwick%20Flood%20Mitigation%20PDR%207-24-12%20with%20Appendices.pdf>; [Warwick Wastewater Treatment Facility – Climate Vulnerability Summary https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/cvswarwick.pdf](https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/cvswarwick.pdf)

¹⁷ Banacos, Peter, “The Great Vermont Flood of 10-11 July 2023: Preliminary Meteorological Summary” National Oceanic and Atmospheric Administration, National Weather Service, pg. 2 (August 5, 2023)
<https://www.weather.gov/btv/The-Great-Vermont-Flood-of-10-11-July-2023-Preliminary-Meteorological-Summary> (noting that damage “rivaled and in some areas exceeded – Tropical Storm Irene in 2011”)

¹⁸ Robinson, Shaun, “Total Destruction:’ Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere” (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/> (“Across Vermont, 33 wastewater treatment facilities were impacted by the flooding ...according to Michelle Kolb, a supervisor in the state Department of Environmental Conservation’s wastewater program.”)

[t]he facility that keeps the village’s drinking water safe was built at elevation and survived. But its sewage plant fared less well. Flooding tore through it, uprooting chunks of road, damaging buildings and sweeping sewage from treatment tanks into the river. Even [over three weeks after the storm event] the plant can only handle half its normal load.¹⁹



Figure 2: Ludlow Wastewater Treatment Plant (photo August 2, 2023, taken after July storm event)²⁰

The wastewater treatment plant in Johnson, Vermont was similarly devastated with the Assistant Plant Manager reporting to a local news outlet, “Total destruction. The only thing we have left is the shell of a building.”²¹

According to officials from Vermont DEC, both the Ludlow and Johnson WWTSS had some flood protections in place prior to this event: Ludlow built a new influent pump station designed to withstand a 500-year flood event in 2020-21.²² While its plant was rendered inoperable immediately after the early July flood, it came back on-line in late July. For the Johnson Wastewater Treatment Plant, this was the 6th flooding event at the plant since it was built in 1995. In the assessment that occurred by state and federal officials after the most recent flood,

¹⁹ Naishadham, Suman, Peterson, Brittany, Fassett, Carnille, “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the US,” Vermont Public, <https://www.vermontpublic.org/local-news/2023-08-10/ludlow-vermont-rising-flood-risks-threaten-many-water-and-sewage-treatment-plants-across-the-us>

²⁰ <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e> (picture captions: Joe Gaudiana, the Ludlow, VT. Chief Water and Sewer Operator, left, surveys damage with Elijah Lemieux, of the Vermont Rural Water Association, at the wastewater treatment plant following July flooding, Wednesday, Aug. 2, 2023, in Ludlow. (AP Photo/Charles Krpa))

²¹ Robinson, Shaun, “Total Destruction: “Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere” (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/>

²² Telephone conversation with Vermont Department of Conservation officials, Heather Collins and Michelle Kolb (September 25, 2023).

long-term recommendations ranged from more minor fixes (i.e., replacing the gravity line with a pump station and force main) to undertaking an assessment that would compare the cost of moving the facility against the already-significant cost of just repair and construction, estimated to be at least \$2 million.²³ As the officials emphasized, short of relocating, or finding significant additional resources, for some of Vermont’s impacted facilities, there are no easy fixes and future adaptations might mean preparing “to-go bags,” and installing “redundant pipes,” submersible pumps, waterproof electrical boxes or, in some cases, possibly building a second story on an existing plant.

Even more recently, in September 2023 the City of Leominster in central Massachusetts experienced a flash flooding event.²⁴ Previously, the city had identified a riverbank section of the North Nashua River, near the WWTS, that had eroded and was continuing to be eroded and was heading towards a buried sewer main. As detailed in the summary of work report,²⁵ “[l]eft unabated, the stream would likely carve a new path into the sewer line, potentially causing a break.” To mitigate this potential problem, the city completed a riverbank stabilization project under FEMA’s Hazard Mitigation Grant Program to protect the main sewer line that was identified as vulnerable to flooding and failure. That line was unimpacted by the recent flash flooding in September and the stabilization work is still intact while other infrastructure in the area suffered significant flood damages. In addition to illustrating the potential impacts of a recent flooding event on a WWTF, this example - of identifying a risk to increased flooding and consequent mitigation measure - exemplifies the process that EPA envisions for the Adaptation Plan.

EPA acknowledges and appreciates that many WWTSs and sewer systems are currently designed with some flood protections to combat the increasing frequency of major storm and flood events and the resulting impacts to wastewater treatment systems and sewer systems. To address the current and future risks associated with these more frequent and intense storms occurring in the region, EPA finds that the development of an Adaptation Plan is necessary in order to ensure the proper operation and maintenance of WWTSs and sewer systems.

B. Requirement to Develop an Adaptation Plan

EPA received a comment regarding the requirements in the Permit to develop an Adaptation Plan (referred to as a “Major Storm and Flood Events Plan” in the Draft Permit).

While EPA believes the proposed permit language was set forth with reasonable clarity, in the Final Permit the three components of the Adaptation Plan have been revised and re-organized to define the requirements even more clearly. The goal of these changes is to simplify and better-define the components of the required Adaptation Plan, discussed in more detail below, and to establish a standard of work that allows greater latitude for the Permittee to determine how to

²³ Johnson Village Wastewater Post July 2023 Flood Treatment Plant Assessment Lamoille County, Vermont, NPDES Permit Number Vermont 0100901 (August 9, 2023)

²⁴ Derrick Bryson Taylor and Johnny Diaz, “Massachusetts Cities Declare Emergency After ‘Catastrophic’ Flash Flooding” <https://www.nytimes.com/2023/09/12/us/leominster-massachusetts-flash-flooding.html>

²⁵ City of Leominster, North Nashua River Riverbank Stabilization Project: Summary of Work (prepared by GZA GeoEnvironmental, Inc.) (February 2023)

meet permit requirements (which includes allowing the Permittee to use qualifying prior assessments in satisfaction of some or all the Permit's Adaptation Plan components.)

To support the Permittees' development of an Adaptation Plan, EPA Region 1 has developed a companion document: *Recommended Procedures and Resources for the Development of Adaptation Plans* ("Recommended Procedures")²⁶ to assist owners and operators of wastewater treatment systems and/or sewer systems to develop adaptation plans that meet the requirements included in Region 1 NPDES permits. The document provides recommendations and procedures for the use of a free EPA tool developed specifically for water utilities. Permittees may use the recommended tool and the associated procedures or they may use other approaches providing comparable analyses, as discussed in more detail below, to satisfy permit requirements.

In the Final Permit the three components of the Adaptation Plan include the following (additional detail, including definitions of certain terms, is included in the Final Permit):

- Component #1: Requires the Permittee to develop and sign, within 24 months of the effective date of the permit, an identification of critical assets and related operations within the WWTS and/or sewer system which they own and/or operate that are most vulnerable to major storm and flood events under baseline and future conditions and to assess the ability of each to function properly in the event of major storm and flood events in terms of effluent flow, sewer flow, and discharges of pollutants;
- Component #2: Requires the Permittee to develop and sign, within 36 months of the effective date of the permit, an assessment of adaptive measures, and/or, if appropriate, the combination of adaptative measures that minimize the impact of future conditions on the critical assets and related operations of the WWTS and/or sewer system(s); and
- Component #3: Requires the Permittee to submit a proposed schedule for implementation and maintenance of adaptive measures within 48 months of the effective date of the permit.

As described above, the final requirements of the Adaptation Plan have been revised to address a variety of concerns raised by the commenter. EPA explains its rationale for specific revisions and definitions in more detail below. EPA notes that while there have been several organizational changes and other edits to further clarify the three components of the Adaptation Plan, the framework proposed in the Draft Permit is maintained.²⁷

²⁶ Available at: <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

²⁷ The comments on the Draft Permit did not appear to raise substantial new questions on the Permit. 40 C.F.R. § 124.14(b). The commenters' critiques of the proposed permit requirements did not raise substantial new issues but rather, for example, question EPA's authority to impose the requirements, or express concern regarding particular timeframes included in the requirements. The changes made in response to these and other comments were foreseeable. *See In re Concord*, 16 E.A.D. 514, 532 (EAB 2014) ("[I]t was foreseeable that the Region might alter [a certain permit] limit in light of public comments questioning the Region's rationale for setting [that limit].") The comments did not result in EPA substantially changing the permit requirements, but rather prompted EPA to refine the requirements already proposed in the Draft Permit, as described in more detail below. *See In re Carlota Copper Company*, 11 E.A.D. 692, 730-731 (EAB 2004) (permit issuer reopened public comment period after comments

- The commenter raised concerns about the ability of Permittees to implement all of the identified adaptive actions in the time frames set forth in the Draft Permit. EPA agrees with the concerns that were raised about the ability to implement all identified adaptive measures within those time frames and has, therefore, modified the Final Permit to require the Permittee to develop an implementation schedule itself rather than specify a particular schedule for implementation. EPA notes that the Final Permit also requires that the Permittee report annually on “any progress made toward implementation of adaptive measures.” This leaves the Permittee free to evaluate other considerations when determining when and how to implement adaptive measures. EPA encourages Permittees to move forward with implementation actions that address the vulnerabilities identified as part of its Adaptation Plan in as timely a manner as possible and to prioritize addressing the most impactful vulnerabilities.
- In an additional effort to clarify and simplify the Adaptation Plan requirements, the two previously separate wastewater treatment system and sewer system provisions have now been combined into one section in the Final Permit.
- After reviewing the comment received, EPA has determined it is more appropriate at this time to use terminology that is defined in and consistent with the federal flood standards, to ensure eligibility for federal funding and to specify the data acceptable for use when conducting an assessment of vulnerable assets. Therefore, to clarify the conditions that must be considered in a vulnerability assessment, EPA has removed the phrase “at a minimum, worst-case data” from the Final Permit and instead, the Final Permit requires that the Permittee evaluate asset vulnerability using baseline conditions and future conditions, as explained below.

The Final Permit defines baseline conditions as the 100-year flood based on historical records and future conditions as projected flood elevations using one of two approaches consistent with the federal flood standards:

- a) Climate Informed Science Approach (CISA): The elevation and flood hazard area that result from using the best-available, actionable hydrologic and hydraulic data and methods that integrate current and future changes in flooding based on climate science. These shall include both short term (10-25 years forward-looking) and long term (25-70 years forward-looking) relative to the baseline conditions and must include projections of flooding due to major storm and flood events using federal, state and local data, where available;

received during the first comment period prompted the permit issuer to require, for the first time, site remediation and to authorize discharge from a new outfall.) Because the public already had an opportunity to comment on these proposed requirements during the public comment period, a second public comment period would not be appropriate. *See id.* at 729-730 (“A second public comment period... does not provide an opportunity to raise any new issues regarding the permit, but instead provides only an opportunity to submit comments on the issues that caused the reopening of the comment period.”); 40 C.F.R. § 124.14(c) (Comments filed during the reopened comment period shall be limited to the substantial new questions that caused its reopening.)

b) Freeboard Value and 500-year floodplain Approach: The flood elevations that result from adding an additional 2 feet to the 100-year flood elevation for non-critical actions and by adding an additional 3 feet to the 100-year flood elevation for critical actions compared to the flood elevations that result from 500-year flood (the 0.2% - annual-chance flood) and selecting the higher of the two flood elevations.

This change in the Final Permit clearly defines what minimum conditions must be used to assess vulnerability under the Adaptation Plan, and EPA has provided tools and data references a Permittee may use to evaluate these conditions and meet the permit requirements. The flood elevations specified account for many of the storm and flood conditions that were listed in the Draft Permit; however, EPA notes that these data may not account for all potential instances of extreme precipitation. Currently, data sets or mapping tools that model changes to flood elevations in response to varying storm sizes are not readily available or simple to use. Therefore, EPA is not requiring facilities to identify or use such data in their analysis. However, EPA notes that there may be site-specific data available for use in a given municipality, and EPA encourages facilities to consider impacts from site-specific events for planning purposes if possible. One or more of the resources provided in the Recommended Procedures document, referenced in the Final Permit, may also account for impacts of extreme precipitation to an extent that is useful to facilities.

- Regarding timing, EPA agrees with the comment that 12-months may not be sufficient time to complete the Adaptation Plan, therefore, the Final Permit has been revised to allow additional time to complete the full Adaptation Plan. In the Final Permit, Component 1 is to be completed within 24 months of the effective date of the permit, Component 2 is to be completed within 36 months of the effective date of the permit, and Component 3 is due within 48 months of the effective date of the permit. EPA considers that this change will allow adequate time to initiate the necessary funding and procurement processes (which EPA understands must line-up with local requirements which can take place over many months or even years) in order to develop the plans (either in-house or through professional engineering services). EPA also considers this additional time will alleviate the impact to other ongoing municipal projects. Regarding annual reporting, the first of those reports is now due on March 31 following the completion of Component #1 of the Adaptation Report. EPA has modified the requirement and will now require a report “for the prior calendar year that documents any progress made toward implementation of adaptive measures, and any changes to the WWTS or other assets that may impact the current risk assessment.”
- Regarding the cost of developing the Adaptation Plan, there are costs and other resources that Permittees must allocate to comply with all permit requirements. EPA considers proper operation and maintenance of the WWTS as well as the collection system to include addressing major storm and flood events that would impair operation of the system. EPA acknowledges that the Permittee will incur costs and other potential resource expenditures to develop a plan related to these events but considers these expenditures to be necessary in order to prevent impacts during such events (e.g., bypass, upset or failure of the WWTS, overflow, or increased inflow and infiltration in the sewer

system, and discharges of pollutants that exceed effluent limits), which would adversely affect human health or the environment.

However, EPA appreciates the regulated community's concerns regarding costs and has taken the commenter's concern – that the Adaptation Plan requirements would result in “significant expenditures” – into consideration and has accordingly made changes to the permit as described below.

1. In order to minimize costs and provide additional clarity to Permittees, EPA has developed a companion document, *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*, (“Recommended Procedures”), which a Permittee could elect to use to guide it through development of the Adaptation Plan. The document instructs Permittees on the use of EPA's CREAT tool, which is free to use by Permittees and will help Permittees navigate through much of the analysis needed to develop an Adaptation Plan. It is EPA's intention that a Permittee could use these tools to develop an Adaptation Plan in an effort to reduce costs and possibly to eliminate or reduce the need to hire external contractors.
2. Additionally, EPA has removed the requirement that a “qualified person” conduct the assessment work, since this Draft Permit term created the misimpression that an outside contractor would be required to perform the work necessary to develop an Adaptation Plan. Rather, it is EPA's expectation that a person knowledgeable and familiar with the Permittee's wastewater treatment system and/or sewer system undertake the assessments necessary to develop a meaningful and useful Adaptation Plan.
3. The provision of the Draft Permit that required that the plan be revised “as data sources used for such evaluations are revised or generated,” has been removed in the Final Permit. This requirement could create the constant need to check for new data, which would be costly and was not EPA's intent. Instead, the Final Permit has been updated to require evaluating the vulnerability of assets once during the permit term (during the development of the Adaptation Plan). Additional revision of the Adaptation Plan during the permit term would only be required during the permit term if there has been a significant change to the infrastructure of the system to update the description of the assets removed or updated, to incorporate any new assets into the documentation, and describe any effects these changes have on the asset and/or system vulnerability. Specifically, the Final Permit states:

The Adaptation Plan shall be revised if on- or off-site structures are added, removed, or otherwise significantly changed in any way that will impact the vulnerability of the WWTS or sewer system.

4. EPA has removed the requirement to make a GIS system map publicly available online as this requirement could create hardships for the regulated community. The

Permittee is still required by Part I.C.2.d. of the Permit to maintain such a map, but the map is not required to be in a GIS format, nor is it required to be posted online.

5. A provision has been added to the Final Permit that allows credit for prior work to eliminate potentially costly duplication of efforts. Specifically, the new language says in Part I.C.1.b:

Credit for Prior Assessment(s) Completed by Permittee or Co-permittee. If the Permittee [and/or Co-permittee(s)] has [have] undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee [and/or Co-permittee(s)] may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee [and/or Co-permittee(s)] explains how its prior assessments specifically meet the requirements set forth in this permit and how the Permittee [and/or Co-permittee(s)] will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).

It is EPA's intention to provide Permittees with technical assistance for the development of the Adaptation Plan. EPA has many on-line training tools,²⁸ some of which have been utilized by New England WWTSs²⁹ and also plans (in accordance with available funding and agency priorities) to offer: a New England-based virtual workshop training series for WWTS operators and others on the use of the CREAT tool which EPA expects will commence in early 2024 (which will be recorded to maximize its utility for those who may want to access the information at a later date); in-person technical assistance sometime in mid- 2024 and telephone assistance on the use of the CREAT tool. In recommending Permittees use this tool and by providing procedures for using it, EPA hopes to both enable Permittees to develop robust Adaptation Plans themselves, but also to reduce the costs, including the costs associated with outside contractors.

Additionally, EPA notes that there may be federal, state or local funding sources available to assist entities with adaptation planning.³⁰

- With regards to the cost of implementing adaptation measures, the selection and deadlines for implementing specific adaptation measures are not included as requirements in the permit since those will only be known after the completion of the Adaptation Plan. EPA expects that the Permittee will begin implementation of those measures in the

²⁸ <https://www.epa.gov/crwu/training-and-engagement-center>; see also, the Resources Section in the Recommended Procedures for additional resources that Permittees might find useful.

²⁹ See https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea_March_2016.pdf;]; see also, the Resources Section of the Recommended Procedures document for more New England case studies and other useful resources.

³⁰ EPA included a link to EPA's website for Federal Funding for Water and Wastewater Utilities in National Disasters (Fed FUNDS). The website, while no longer listed in the Final Permit can be accessed at: <https://www.epa.gov/fedfunds>. Potential resources may also be available through the State of Massachusetts.

coming years. However, since the Permittee will be setting the prioritizations and scheduling for implementing the measures based on their own risks and vulnerabilities to major storm and flood events, they may incorporate affordability and funding availability into their considerations.

EPA notes, that in developing the Adaptation Plan, the Permittee may, as part of the process, be comparing the potential economic costs of the baseline condition, or “no action alternative,” with those of possible adaptation measures, under current and predicted risks of major storm and flood events. This option is available in the use of the adaptation planning approach as outlined in the companion document to this Final Permit entitled *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*. Depending on site-specific circumstances, the Permittee may find that the cost of not implementing adaptation measures is greater than the cost of implementing them.

C. Legal Authority

The Adaptation Plan permit conditions are necessary to further the overarching goal of the CWA³¹ “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” and derive from the same authorities as all other standard operation and maintenance requirements. CWA § 101(a), 40 C.F.R. §§ 122.41(d), (e), (n). The Adaptation Plan requirements are an iterative update to EPA’s standard O&M permit provisions and intend to address serious and increasingly prevalent threats to Permittees’ compliance with permit effluent limitations. As illustrated by the recent examples detailed in Section A, major storm and flood events can gravely impact discharges from WWTSs and thus water quality. That is, plant and/or sewer system failure due to storms, increased precipitation/floods, storm surge, and sea level rise can and do lead to bypasses, upsets, and violations of some or all of the permit limits, including water quality-based limits and limits based on secondary treatment standards. The Adaptation Plan is designed to reduce and/or eliminate noncompliant discharges that result from impacts of major storm or flood events through advanced planning and adaptation measures and is authorized by both EPA regulations and the CWA.

EPA recognizes that larger scale planning may be necessary to address some issues and agrees that requiring the same would be beyond the scope of this NPDES permit. This NPDES permit does not intend to address all issues caused by major storm and flood events. To the contrary, the Adaptation Plan O&M requirements intend to address one specific issue that EPA has witnessed in New England, as described in Section A: the operability of the WWTS and/or sewer system during and after major storm and flood events. This issue is appropriate for an NPDES permit because it is central to the Permittee’s compliance with the Permit’s effluent limitations and other Permit conditions, and thus central to EPA’s obligation to issue permits that assure

³¹ Congress has recently expressly affirmed that natural hazard adaptation measures for POTWs appropriately fall within the scope of the CWA: Congress added section 223 to the CWA via the Infrastructure Investment and Jobs Act, creating a grant program to support, *inter alia*, “the modification or relocation of an existing publicly owned treatment works, conveyance, or discharge system component that is at risk of being significantly impaired or damaged by a natural hazard[.]” Pub. L. 117-58, 135 Stat. 1162 (codified at 33 U.S.C. § 1302a(c)(4))(2021).

compliance with Water Quality Standards and other applicable laws. For the reasons described in this Section, EPA is well within its CWA-based authority to impose the Adaptation Plan requirements.

EPA's O&M regulations authorize EPA to impose the Adaptation Plan requirement. 40 C.F.R. § 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 of the permitted facilities and systems inherently includes adaptation planning. As illustrated in the examples in Section A, if a WWTS is unable to operate properly as designed due to impacts from a major storm or flood event, the discharge of pollutants in violation of both its permit and applicable water quality standards is highly likely to occur and with increasing frequency. In other words, the Permittee cannot satisfy its obligation to operate properly "at all times" if it cannot do so during and after major storms or flooding events. The new Adaptation Plan requirements are an iterative extension of the previous permit's requirements that "The permittee will maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure."³² Major storm and flood events represent an increasing cause of WWTS malfunctions and failures and thus EPA added the Adaptation Plan requirements to the O&M requirements to more specifically address this issue.

EPA is well within its CWA-based authority to include these permit conditions which are necessary to reduce the frequency or likelihood of bypass or upset and otherwise achieve compliance with the permit's effluent limits, and thus also assure compliance with water quality standards and other CWA requirements. CWA § 402(a)(2) ("[EPA] shall prescribe conditions for [NPDES] permits to assure compliance with the [applicable CWA] requirements... as he deems appropriate."); CWA §§ 301(b)(1)(C), 401(a)(1)-(2); *see also* 40 C.F.R. § 122.4(d) ("No permit may be issued... When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States"); *See also* 40 C.F.R. § 122.44(d)(1). The provisions are reasonable measures rooted in the permitting requirements to properly operate and maintain all facilities and the duty to take all reasonable steps to minimize or prevent any discharge in violation of the permit. 40 C.F.R. § 122.41(d), (e).

The Agency relied on the same CWA-based authority when it promulgated the O&M regulations:

Many commenters expressed doubt whether EPA is legally authorized to require proper operation and maintenance of facilities. This requirement is clearly authorized for NPDES permittees by section 402(a)(2) of CWA which requires the Administrator to prescribe permit conditions which will assure compliance with the requirements of CWA section 402(a)(1).

45 Fed. Reg. 33290, 33303-04 (May 19, 1980). In 1980 and now, the proper operation and maintenance of a facility – including the Adaptation Plan requirements – effectuates the permit

³² NPDES Permit No. MA0030350 issued to Governor's Academy, Sept. 28, 2011 (available at: <https://www3.epa.gov/region1/npdes/permits/2011/finalma0030350permit.pdf>)

limits on all addressed pollutants and protects all applicable water quality standards, as they assure that such limits will be met, even in times of major storms or during flood events. CWA § 402(a)(2). It is well-established that EPA may include specific permit conditions that ensure the preconditions or assumptions underlying EPA’s pollutant effluent flow calculations remain constant, thus ensuring the permit, as a whole, assures compliance with WQS and other applicable CWA requirements. *See In re: City of Lowell*, 2020 WL 3629979 at *35,18 E.A.D. 115, 156 (EAB 2020) (affirming effluent flow limit as a proper exercise of the Agency’s 40 C.F.R. § 122.41(e) authority in part on the basis that the permit’s pollutant effluent limits were calculated based on a presumed maximum wastewater effluent discharge from the facility, and thus “If flow limits exceed the assumed maximum flow, ... then the Region may have erroneously concluded that a pollutant did not have a reasonable potential to cause or contribute to an exceedance of water quality standards or that the permit’s pollutant effluent limits assure compliance with Massachusetts’ water quality standards.”) Likewise, The Adaptive Plan O&M requirements ensure the basic, necessary preconditions (i.e., the plant’s operability) to compliance with the permit’s effluent limits and other requirements of the CWA. Given the importance of WWTS and sewer system operability to compliance with this NPDES permit, it is not unreasonable for EPA to impose the Adaptation Plan O&M requirements. *C.f. In re Avon Custom Mixing Services, Inc.*, 17 E.A.D. 700, 709 (EAB 2002) (“Given the importance of monitoring to the integrity of NPDES permits, and the broad authority the CWA confers on the Region to impose monitoring requirements in NPDES permits, it does not strike us as unreasonable that the Region has decided to include new monitoring requirements in the reissued permit.”)

The EAB has affirmed the Agency’s authority to require the preparation and submission of a plan as part of the Operation & Maintenance requirements of an NPDES permit. *In Re City of Moscow, Idaho*, 10 E.A.D. 135, 169-172 (EAB 2001) (affirming O&M permit provision that required development and submission of a quality assurance project plan, “[t]he primary purpose of [which] shall be to assist in planning for the collection and analysis of samples in support of the permit...”³³ under the O&M regulations, stating “it seems plain that the CWA and its implementing regulations authorize the Region to include permit requirements like the QAPP here in conjunction with the ultimate goal of assuring compliance with the CWA.”). Like the O&M planning requirement in *Moscow*, the primary purpose of the Adaptation Plan in this permit is to assist in planning for compliance with the permit – in this instance, by ensuring the facility remains operable even during flooding or other major storm events – and the ultimate goal of the requirement is to assure compliance with the CWA.

40 C.F.R. § 122.41(d) also authorizes EPA to impose the Adaptation Plan requirement. (“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.”) It is a reasonable step for EPA to require a Permittee to create an Adaptation Plan to minimize facility disruptions during major storm and flood events. For example, if a Permittee identifies that an asset critical to its WWTS is extremely vulnerable to a major storm and that loss of the asset would result in the inoperability

³³ NPDES Permit issued to City of Moscow, Idaho, Part I.E (March 12, 1999) (available at: <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15509>)

of the WWTS and thus discharges in violation of permit limits, then mitigating those risks reasonably minimizes or prevents harmful discharges in violation of the permit.

EPA also has broad authority for data and information collection, reporting, and “such other requirements as [the delegated permit authority] deems appropriate” to carry out the objectives of the Act.” CWA § 402(a)(2). *See also In re Moscow*, 10 E.A.D. at 171. Components 1 and 2 of the Adaptation Plan require the Permittee to collect and report to EPA data and information that are appropriate to carry out the objectives of the CWA. This information and data will allow the Permittee to identify assets which are vulnerable to flooding and adaptive measures appropriate to address those vulnerabilities. As described elsewhere in this General Response, facility vulnerabilities threaten compliance with permit requirements and thus CWA objectives. Conversely, information about appropriate adaptive measures will facilitate compliance with both.

Regarding provisions that require consideration of discharges occurring 100 years from now, EPA notes the changes made to the permit with regard to these provisions. See Part B of the General Response defining “future conditions”. Second, EPA notes that although the CWA limits the terms of NPDES permits to five years, CWA § 402(b)(1)(B), such a limitation does not logically constrain the permitting authority from requiring the Permittee to consider future conditions beyond the five-year term. Third, EPA expects Permittees to fully comply with the Adaptation Plan provision within the five-year term of the permit, meaning it does not impose any obligations on the Permittee beyond the five-year permit term. A five-year permit term limitation was not intended to prevent permit authorities from considering time-frames greater than five years in permitting. One directly relevant example for WWTSs are Combined Sewer Overflow Long-Term Control Plans (LTCPs). The CSO Policy, 59 Fed. Reg. 18688 (April 19, 1994), which Congress expressly incorporated directly into the CWA at § 402(q), requires the development of LTCPs to ultimately come into compliance with the Act, recognizing that such schedules will (and have) in many instances span multiple permit terms. That Congress directly amended the CWA to require compliance with the CSO Policy, including its long-term permitting approaches, demonstrates that the Act does not constrain permitting authorities from considering timeframes outside of the five-year permit term. Another example of permissible permit timeframes that extend beyond the five-year permit term are compliance schedules, which may go beyond the expiration date of the permit if consistent with applicable state law. *See In Re Moscow*, 10 E.A.D. at 153 (“...a Region’s authority to provide for compliance schedules in EPA-issued permits is limited to those circumstances in which the State’s water quality standards or its implementing regulations ‘can be fairly construed as authorizing a schedule of compliance.’”) (citations omitted). The WWTS Adaptation Plan reasonably also requires *consideration* of long-term horizons as the planning and actions needed to address increasing major storms and flood events will be in many instances long-term as well.

The commenter suggests that the Adaptation Plan requirements should be removed from the permit. However, because adaptation planning is a critical step in complying with the permit’s effluent limitations, EPA has determined that it is appropriate to include the Adaptation Plan requirements in the Permit itself even if similar requirements also derive from other obligations. Major storm and flood events are of urgent concern, and EPA does not believe it would be sufficient to rely entirely on non-Permit obligations to address these threats to the proper

operation and maintenance of WWTSs and/or sewer systems, especially because not all Permittees may otherwise be obligated to engage in adaptation planning, or may not be required to do so at this time. EPA has determined that planning for major storm and flood events must be done by all facilities now to avoid negative impacts. In recognition of the fact that Permittees may complete similar assessments to satisfy other obligations, the Final Permit allows the Permittee to use qualifying assessments done for other programs or obligations to satisfy some or all of the components of the Adaptation Plan requirements. EPA considers its approach to be appropriate and reasonable to ensure consistent operation and maintenance of permitted facilities. Therefore, EPA will require Adaptation Plans be developed under NPDES permits for all wastewater treatment plants in Massachusetts. *Cf. In re Springfield Water and Sewer Commission*, 18 E.A.D. 430, 475 (EAB 2020) (finding no clear error “when a permitting authority agrees to a permit applicant’s request for relief but decides on a different vehicle than the one proposed to provide that relief.”)

**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”),

**Governor’s Academy
1 Elm Street
Byfield, Massachusetts 01922**

is authorized to discharge from the facility located at

**Governor’s Academy Wastewater Treatment Facility
Elm Street
Byfield, Massachusetts 01922**

to receiving water named

**Unnamed Tributary to the Mill River
Parker River Watershed**

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

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

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

This permit supersedes the permit issued on September 28, 2011.

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** (PFAS Analyte List) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

¹ Pursuant to 40 Code of Federal Regulations (CFR) § 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. Procedures for appealing EPA’s Final Permit decision may be found at 40 CFR § 124.19.

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 Unnamed Tributary to the Mill 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	0.052 MGD ⁵	---	---	Continuous	Recorder
Effluent Flow ⁵	Report MGD	---	Report MGD	Continuous	Recorder
BOD ₅	5.8 mg/L 2.5 lb/day	5.8 mg/L 2.5 lb/day	Report mg/L	1/Week	Composite
BOD ₅ Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	5.8 mg/L 2.5 lb/day	5.8 mg/L 2.5 lb/day	Report mg/L	1/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range ⁶	6.5 - 8.3 S.U.			5/Week	Grab
<i>Enterococci</i> ⁷	35 cfu/100 mL	---	104 cfu/100 mL	1/Week	Grab
Fecal Coliform ⁷	14 cfu/100 mL	---	28 cfu/100 mL	1/Week	Grab
Dissolved Oxygen (April 1 - October 31)	≥ 5.0 mg/L			5/Week	Grab
Ammonia Nitrogen	1 mg/L	1 mg/L	1.5 mg/L	1/Week	Composite
Total Copper	13 µg/L	---	20 µg/L	2/Month	Composite
Total Lead	5 µg/L	---	---	2/Year	Composite
Total Kjeldahl Nitrogen ⁸	Report mg/L	---	Report mg/L	1/Quarter	Composite
Nitrate + Nitrite ⁸	Report mg/L	---	Report mg/L	1/Quarter	Composite
Total Nitrogen ⁸	Report mg/L Report lb/day	---	Report mg/L	1/Quarter	Calculation
PFAS Analytes ⁹	---	---	Report ng/L	2/Year	Grab
Adsorbable Organic Fluorine ¹⁰	---	---	Report ng/L	2/Year	Grab

Effluent Characteristic	Effluent Limitation			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Whole Effluent Toxicity (WET) Testing^{11,12}					
LC ₅₀	---	---	≥ 100 %	2/Year	Composite
C-NOEC	---	---	≥ 100 %	2/Year	Composite
Hardness	---	---	Report mg/L	2/Year	Composite
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Composite
Total Aluminum	---	---	Report mg/L	2/Year	Composite
Total Cadmium	---	---	Report mg/L	2/Year	Composite
Total Copper	---	---	Report mg/L	2/Year	Composite
Total Nickel	---	---	Report mg/L	2/Year	Composite
Total Lead	---	---	Report mg/L	2/Year	Composite
Total Zinc	---	---	Report mg/L	2/Year	Composite
Total Organic Carbon	---	---	Report mg/L	2/Year	Composite

Ambient Characteristic ¹³	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
Hardness	---	---	Report mg/L	2/Year	Grab
Ammonia Nitrogen	---	---	Report mg/L	2/Year	Grab
Total Aluminum	---	---	Report mg/L	2/Year	Grab
Total Cadmium	---	---	Report mg/L	2/Year	Grab
Total Copper	---	---	Report mg/L	2/Year	Grab
Total Nickel	---	---	Report mg/L	2/Year	Grab
Total Lead	---	---	Report mg/L	2/Year	Grab
Total Zinc	---	---	Report mg/L	2/Year	Grab
Total Organic Carbon	---	---	Report mg/L	2/Year	Grab
Dissolved Organic Carbon ¹⁴	---	---	Report mg/L	2/Year	Grab
pH ¹⁵	---	---	Report S.U.	2/Year	Grab
Temperature ¹⁵	---	---	Report °C	2/Year	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
PFAS Analytes ⁹	---	---	Report ng/L	2/Year	Grab
Adsorbable Organic Fluorine ¹⁰	---	---	Report ng/L	2/Year	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
PFAS Analytes ⁹	---	---	Report ng/g	2/Year	Grab ¹⁶

Footnotes:

1. All samples shall be collected in a manner to yield representative data. 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. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and MassDEP (“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 either to 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 the following 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.). For NH: See Part I.G.1 below for a provision to modify the pH range.
7. The monthly average limits for bacteria (including *E. coli* and fecal coliform) are expressed as a geometric mean. Fecal coliform and *enterococci* grab samples shall be taken at the same time during the 2 hour period of maximum diurnal flow.
8. 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.

$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$

$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \# \text{ of days in the month}] * 8.34$$

9. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment C. Monitoring and reporting shall be done twice per year, once in each 3rd calendar quarter and once in each 4th calendar quarter. This reporting requirement for the listed PFAS parameters takes effect the first full 3rd or 4th calendar quarter following six months after the effective date of the permit.
10. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. Monitoring and reporting shall be done twice per year, once in each 3rd calendar quarter and once in each 4th calendar quarter. This reporting requirement for the listed PFAS parameters takes effect the first full 3rd or 4th calendar quarter following six months after the effective date of the permit.
11. The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) in accordance with test procedures and protocols specified in Attachment A and B of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia* only. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending June 30th and September 30th. 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.
12. 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.

13. 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.
14. 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.
15. 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.
16. 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>.

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 facility 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 facility by a source introducing pollutants into the facility 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 facility; and
 - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the facility.
9. Pollutants introduced into the facility by a non-domestic source (user) shall not pass through the facility or interfere with the operation or performance of the works.

10. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any Significant Industrial Users (SIUs) discharging into the facility subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.

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. The Permittee must provide verbal notification to EPA within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). Providing that it contains the information required in Part II.D.1.e, submission of the MassDEP SSO Reporting Form (described in Part I.B.3 below) may satisfy the requirement for a written report. 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 (including latitude and longitude) 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 TREATMENT AND CONTROL FACILITIES

1. Wastewater Treatment Facility

Operation and maintenance (O&M) of the wastewater treatment facility² (WWTF) owned and/or operated by the Permittee shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit.

² Wastewater Treatment Facility means any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It does not include sewers, pipes and other conveyances to the wastewater treatment facility.

- a. *WWTF Major Storm and Flood Events Plan.* Within 12 months of the effective date of this Permit, the Permittee shall develop and submit a *WWTF Major Storm and Flood Events Plan* and begin to implement mitigation measures consistent with the schedule contained in this paragraph. The Plan shall contain three components: (1) an asset vulnerability evaluation, (2) a systemic vulnerability evaluation³ of the assets, and (3) a mitigation measures alternatives analysis. The Plan shall include resiliency and implementation planning informed by an evaluation of all WWTF vulnerabilities to major storm and flood events⁴. The planning process shall be iterative, and re-evaluations shall be conducted; (1) if on- or off-site structures are added, removed or significantly changed in any way that will impact the vulnerability of the WWTF; and (2) as data sources used for such evaluations are revised, or generated. At a minimum, the Plan must take future conditions into consideration, specifically the midterm (i.e., 20-30 years) and long-term (i.e., 80-100 years) and, in the case of sea level change, the plan must consider extreme sea level change. The Plan shall be updated at least every five (5) years from the effective date of this Permit and must take future conditions into consideration.⁵

- (1) *Component 1: Asset Vulnerability Evaluation.* This first component of the *WWTF Major Storm and Flood Events Plan* must assess the vulnerability of individual WWTF-related assets. The Permittee may find EPA's guide: *Flood Resilience: A Basic Guide for Water and Wastewater Utilities*⁶ and EPA's website⁷ *Creating Resilient Water Utilities (CRWU)* helpful for completing this component.

³ To determine the vulnerabilities to the facilities from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, inland flooding, sewer flow and inflow and infiltration and relevant to the facilities from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a five-year basis considering 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) set midterm (i.e., 20-30 years) and long term (i.e., 80-100 years) ranges.

⁴ "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. "Extreme/heavy precipitation" does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

⁵ It will be advantageous to the permittee to consider low, medium, high and extreme levels of sea level change to determine priority assets and plan for increasingly protective mitigation measures.

⁶ https://www.epa.gov/sites/default/files/2015-08/documents/flood_resilience_guide.pdf

⁷ <https://www.epa.gov/crwu>

The *Asset Vulnerability Evaluation* shall include, at a minimum, the following:

- i. Description of planning priorities related to major storm and flood event vulnerabilities presented by the location of the WWTF (e.g., proximity to waterbodies which may cause flooding).
- ii. Identification of all assets related to the WWTF (e.g., buildings, laboratories and offices, WWTF, septage collection facilities, etc.), the elevation of each asset, and if the asset falls into the 100-year flood map or the 500-year flood map;⁸
- iii. Description of structural improvements, either completed or planned, and/or other mitigation measures⁹ designed to minimize¹⁰ the impacts of major storm and flood events to each specific asset identified above.

The Permittee shall consider, at a minimum, the following measures:

- (a) Construction of flood barriers to protect infrastructure or reinforce existing structures to withstand flooding and additional exertion of force;
- (b) Establish remote locations for operations, equipment, records and data backups;
- (c) Plan and establish alternative or on-site power supply¹¹;
- (d) Relocate facilities and/or infrastructure to higher elevations;
- (e) Catalog emergency resources used during a major storm or flood event;
- (f) Develop emergency response plans;
- (g) Establish contracts for backup supplies of critical chemicals;
- (h) Establish mutual aid agreements with neighboring utilities;
- (i) Integrate long-term risks into capital improvement plans;
- (j) Participate in community planning and regional collaborations;
- (k) Conduct staff training for implementing your emergency procedures at regular intervals;

⁸ See https://www.epa.gov/sites/default/files/2015-08/documents/flood_resilience_guide.pdf for a basic guide to flood resiliency for water and wastewater utilities.

⁹ Mitigation measure can be, for example, an emergency planning activity, equipment modification/upgrade or new capital investment/construction project.

¹⁰ For the purposes of this provision, the term “minimize” means to reduce and/or eliminate to the extent achievable the impacts to the facilities.

¹¹ The Permittee shall clearly document measures taken specifically to manage energy system disruptions, such as a general power outage, as well as document whether and, if so, to what extent, power supply adequate to ensure safe and reliable operations of the facility is threatened during a major storm or flood. They shall clearly document measures that have been taken to address any risks the facility faces of losing power during a major storm or flood in a manner that could result in environmental or public health impacts.

- (1) When designing new or replacement facilities, strive to locate facilities above the relative base flood elevation¹² for both the 1% (100-year) and 0.2 % (500-year) chance storm events.
 - iv. Identify the source of data used to assess vulnerabilities to major storm and flood events.
 - v. Identify potential funding sources¹³ for resilience planning and implementation. (e.g., EPA, FEMA, MassDEP, capital planning, etc.).
- (2) *Component 2: Systemic Vulnerability Evaluation.* Upon completing assessment of the vulnerabilities of individual assets, the permittee shall evaluate the vulnerability of its WWTF system as a whole. This second component of the evaluation shall include, at a minimum, a systematic vulnerability evaluation for each asset identified in Part I.C.1.a.(1), including the following:
 - i. Define the criticality of the asset to overall treatment facility operations¹⁴.
 - ii. Identify the highest¹⁵ priority assets for the facility/system and the measures taken (or planned) to reduce facility vulnerability to risks that could degrade overall system operations in a manner that would result in environmental or public health impacts.
- (3) *Component 3: Mitigation Measures Alternatives Evaluation.* Upon completing assessment of the vulnerabilities of the WWTF system as a whole, the Permittee shall provide an assessment of asset-specific mitigation measures, and/or, if appropriate, combinations of mitigation measures to minimize the impact of major storm and flood events. The Permittee shall then select the most effective mitigation measure(s) and include a schedule for implementation. This third component shall include, at a minimum, the following:

¹² For activities proposed for MA facilities within Areas Subject to Protection under M.G.L. c. 131, § 40 or the 100-foot buffer zone, the Base Flood Elevation is defined at 310 CMR 10.04, Definitions of Special Flood Hazard Area, Velocity Zone, and Coastal High Hazard Area, Land Subject to Coastal Storm Flowage at 310 CMR 10.36 and Bordering Land Subject to Flooding, and Isolated Land Subject to Flooding at 310 CMR 10.57. Also refer to the Massachusetts State Building Code for any other required standards related to Base Flood Elevation.

¹³ See <https://www.epa.gov/fedfunds>

¹⁴ For example, an asset like a pumping station or headworks is often scored “high” for criticality, as the safe and reliable operation of many assets during a major storm or flood depend upon the continued operation of that particular asset. If a pump station is degraded or fails, many other assets operations can degrade or fail, resulting in environmental or public health impacts.

¹⁵ Based on the combined assessment of asset-level vulnerability today and in the midterm (i.e., 20-30 years) and long-term (i.e., 80-100 years), the criticality of that asset’s performance to the operations of the system today and in the midterm (i.e., 20-30 years) and long-term (i.e., 80-100 years).

- i. An evaluation of mitigation measure alternatives including a cost-effectiveness analysis and a review of technical, environmental, and institutional factors.
 - ii. For each mitigation measure, quantitatively document (including assumptions and methodologies) the residual risk today, in the midterm (i.e., 20-30 years) and the long-term (i.e., 80-100 years). The evaluation should include estimates of which customers and geographic areas bear the residual risk after implementation of the mitigation measures. Residual risk is a term that refers to the risk remaining for an asset or system, after mitigation measures are taken.
 - iii. Selection of mitigation measures to be undertaken, including:
 - a. a schedule¹⁶ of implementation for each selected mitigation measure¹⁷; and
 - b. a map showing the location of planned mitigation measure.
- (4) *Annual Report.* The Permittee shall submit an Annual Operation and Maintenance Report on the *WWTF Major Storm and Flood Events Plan* implementation and results for the prior calendar year including documenting any changes to the WWTF or other assets that may impact the current vulnerability evaluation. The first annual report is due the first March 31 following submittal of the *Wastewater Treatment Facility Major Storm and Flood Events Plan* and shall be included with the annual report required in Part I.C.3 below.

2. Sewer System

Operation and maintenance (O&M) of the sewer system shall be in compliance with 40 CFR § 122.41 (d) and (e) and the terms and conditions of the Part II Standard Conditions, B. Operation and Maintenance of Pollution Controls which is attached to this Permit. The Permittee shall complete the following activities for the collection system which it owns:

- a. Maintenance Staff

¹⁶ In describing the schedule to implement mitigation measures, the Permittee shall clearly document which mitigation measures identified in the Plan have or have not been integrated into that system's capital planning process. A mitigation measure is integrated when a budget line item in that system's current and adopted capital plan clearly identifies the year of completion and expenditure that has been budgeted and approved to complete that mitigation measure.

¹⁷ For all measures considered, the Permittee must document in the Plan the factual basis (i.e., the maps, data sets and calculations for the analysis), for either implementing or not implementing the measure. The factual basis and analysis must be presented in sufficient detail to allow EPA, the public, or an independent qualified person to evaluate the reasonableness of the decision. For measures already in place, including requirements from state, local or federal agencies, a description of the measures and how they meet the requirement(s) of this permit must be documented in the Plan.

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

b. Preventive Maintenance Program

The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

c. Infiltration/Inflow

The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Sewer System O&M Plan required pursuant to Part I.C.2.e. below.

d. Sewer System Mapping

Within 30 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system it owns. The map shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation for the general public. The sewer system information shown on the map shall be based on current conditions and shall be kept up-to-date. The Permittee shall make the map available online in a downloadable Geographic Information System (GIS) format, available to the public, in a manner where the system's performance can be independently assessed and analyzed. It should include as much information as listed below as possible, with full consideration given to concerns of security, where demonstrated. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

- (1) All sanitary sewer lines and related manholes;
- (2) All combined sewer lines, related manholes, and catch basins;
- (3) All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

- (4) All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;
- (5) All pump stations and force mains;
- (6) The wastewater treatment facility(ies);
- (7) All surface waters (labeled);
- (8) Other major appurtenances such as inverted siphons and air release valves;
- (9) A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;
- (10) The scale and a north arrow; and
- (11) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee shall develop and implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns.

- (1) Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:
 - i. A description of the collection system management goals, staffing, information management, and legal authorities;
 - ii. 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
 - iii. A schedule for the development and implementation of the full *Sewer System Operation and Maintenance Plan* including the elements in Parts I.C.2.e.(3)(i) through (3)(viii) below.
- (2) Within 12 months of the effective date of this Permit, the Permittee shall develop, submit and begin to implement a *Sewer System Major Storm and Flood Events Plan* as an element of the *Sewer System Operations and Maintenance Plan*. The Plan shall contain three components: (1) an asset vulnerability evaluation, (2) a systemic vulnerability evaluation of the system and (3) an alternatives analysis. The Plan shall include resiliency planning

and implementation informed by an evaluation¹⁸ of all sewer system vulnerabilities to major storm and flood events¹⁹. The planning process shall be iterative, and re-evaluations shall be conducted; (1) if on- or off-site structures are added, removed or significantly changed in any way that will impact the vulnerability of the sewer system and (2) as data sources used for such evaluations are revised or generated. At a minimum, the Plan must take future conditions into consideration, specifically midterm (i.e., 20-30 years) and long-term (i.e., 80-100 years) and, in the case of sea level change, the plan must consider extreme sea level change. The Plan shall be updated every five (5) years from the effective date of this Permit.

- i. *Component 1: Asset Vulnerability Evaluation.* The first component of the *Sewer System Operation and Maintenance Plan* must assess the vulnerability of individual sewer system-related assets. The Permittee may find EPA’s guide: *Flood Resilience: A Basic Guide for Water and Wastewater Utilities*²⁰ and EPA’s website²¹ *Creating Resilient Water Utilities (CRWU)* helpful for completing this component.

The Asset Vulnerability Evaluation shall include, at a minimum, the following:

- (a) Description of planning priorities related to the location of the sewer system;
- (b) Identification of all assets (e.g., pump stations, pipes, etc...), the elevation of the asset, and if the asset falls into the 100-year flood map or the 500-year flood map²²;

¹⁸ To determine the vulnerabilities to the facilities from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, inland flooding, sewer flow and inflow and infiltration and relevant to the facilities from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a five-year basis considering 1) historical observations from all years the Permittee has operated the facility prior to this permit’s term; 2) set midterm (i.e., 20-30 years) and long term (i.e., 80-100 years) ranges.

¹⁹ “Major storm and flood events” refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. “Extreme/heavy precipitation” refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. “Extreme/heavy precipitation” does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

²⁰ https://www.epa.gov/sites/default/files/2015-08/documents/flood_resilience_guide.pdf

²¹ <https://www.epa.gov/crwu>

²² See https://www.epa.gov/sites/default/files/2015-08/documents/flood_resilience_guide.pdf for a basic guide to flood resiliency for water and wastewater utilities.

- (c) Description of structural improvements, and/or other mitigation measures²³ to minimize²⁴ the impacts of major storm and flood events to each specific asset identified in Part I.C.2.e.(2).i.(b) above.

The Permittee shall consider, at a minimum, the following measures:

- (i) Construction of flood barriers to protect structure or reinforce existing structures to withstand flooding and additional exertion of force;
 - (ii) Establish remote locations for operations, equipment, records and data backups;
 - (iii) Plan and establish alternative or on-site power supply²⁵;
 - (iv) Relocate facilities and/or infrastructure to higher elevations;
 - (v) Catalog emergency resources used during a major storm or flood event;
 - (vi) Develop emergency response plans;
 - (vii) Establish mutual aid agreements with neighboring utilities;
 - (viii) Integrate long-term risks into capital improvement plans;
 - (ix) Participate in community planning and regional collaborations;
 - (x) Conduct staff training for implementing your emergency procedures at regular intervals;
 - (xi) When designing new or replacement facilities, strive to locate facilities above the base flood elevation²⁶
- (d) Identify the source of data used to assess vulnerabilities to major storm and flood events.
- (e) Identify the potential funding sources²⁷ for resilience planning and implementation (e.g., EPA, FEMA, MassDEP, capital planning, etc.).

²³ Mitigation measure can be an emergency planning activity, equipment modification/upgrade or new capital investment/construction project.

²⁴ For the purposes of this provision, the term “minimize” means to reduce and/or eliminate to the extent achievable the impacts to the facilities.

²⁵ The Permittee shall clearly document measures taken specifically to manage energy system disruptions, such as a general power outage, well as document whether and, if so, to what extent, power supply adequate to ensure safe and reliable operations of the facility is threatened during a major storm or flood. They shall clearly document measures that have been taken to address any risks the facility faces of losing power during a major storm or flood in a manner that could result in environmental or public health impacts.

²⁶ For MA facilities, For activities proposed within Areas Subject to Protection under M.G.L. c. 131, § 40 or the 100-foot buffer zone, the Base Flood Elevation is defined at 310 CMR 10.04, Definitions of Special Flood Hazard Area, Velocity Zone, and Coastal High Hazard Area, Land Subject to Coastal Storm Flowage at 310 CMR 10.36 and Bordering Land Subject to Flooding, and Isolated Land Subject to Flooding at 310 CMR 10.57. Also refer to the Massachusetts State Building Code for any other required standards related to Base Flood Elevation.

²⁷ See <https://www.epa.gov/fedfunds>

- ii. *Component 2: Systemic Vulnerability Evaluation.* Upon completing assessment of the vulnerabilities of individual assets, the Permittee shall evaluate the vulnerability of its sewer system as a whole. This second component of the shall include, at a minimum, a systematic vulnerability evaluation for each asset identified in Part I.C.2.e.(2).i.(b), including the following:
 - (a) Define the criticality of each asset to the overall sewer system operations
 - (b) Identify the highest priority assets for the sewer system and measures²⁸ taken to reduce system vulnerability to risks that could degrade the overall system operations in a manner that would result in environmental or public health impacts

- iii. *Component 3: Alternatives Evaluation.* Upon completing assessment of the vulnerabilities of the sewer system as a whole, the Permittee shall provide an assessment of individual asset-specific, and/or, if appropriate, combinations of mitigation measures must be presented in order to determine the most effective mitigation measures to minimize the impact of major storm and flood events.

This third component shall include, at a minimum, the following with regard to alternative evaluation, at a minimum

- (a) An evaluation of alternatives including a cost-effectiveness analysis and a review of technical, environmental, and institutional factors. The alternatives analysis should conclude with the development of a recommended plan.
- (b) For each alternative, quantitatively document (including assumptions and methodologies) the residual risk today and for the midterm (i.e., 20-30 years) and long-term (i.e., 80-100 yrsrs). The evaluation should include estimates of which customers and geographic areas bear the residual risk from the approach to resiliency planning in that system. Residual risk is a term that refers to the risk remaining for an asset or system, after mitigation measures are taken.
- (c) For each asset, document the total projected alternatives for implementing all planned mitigation measures identified in the *Sewer System Major Storm and Flood Events Plan*.
- (d) Selection of mitigation measures to be undertaken, including:

²⁸ For example, an asset like a pumping station or headworks is often ranked “high” for criticality, as the safe and reliable operation of many assets during a major storm or flood depend upon the continued operation of that particular asset. If a pump station is degraded or fails, many other assets operations can degrade or fail, resulting in environmental or public health impacts.

- (i) a schedule to implement each selected mitigation measure; and
 - (ii) a map showing the location of planned mitigation measures.
- iv. *Annual Report.* The Permittee shall submit an Annual Operation and Maintenance Report on the *Sewer System Major Storm and Flood Events Plan* implementation and results for the prior calendar year including documenting any changes to the sewer system or other assets that may impact the current vulnerability evaluation. The first annual report is due the first March 31 following submittal of the *Sewer System Major Storm and Flood Events Plan* and shall be included with the annual report required in Part I.C.3 below.
- (3) The full Sewer 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:
- i. The required submittal from Part I.C.2.e.(1) above, updated to reflect current information;
 - ii. A preventive maintenance and monitoring program for the collection system;
 - iii. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
 - iv. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
 - v. 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;
 - vi. 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;
 - vii. An educational public outreach program for all aspects of I/I control, particularly private inflow; and

- viii. An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

3. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its O&M Plans 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 O&M Plans required by Part I.C. 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 0.052 MGD design flow (0.042 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.
- g. The Annual Operation and Maintenance Report on the implementation and results of the *WWTF Major Storm and Flood Events Plan* (beginning the first March 31 following submittal of this Plan) for the prior calendar year; and
- h. The Annual Operation and Maintenance Report on the implementation and results of the *Sewer System Major Storm and Flood Events Plan* (beginning the first March 31 following submittal of this Plan) for the prior calendar year.

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS

1. The Permittee shall submit to EPA and the State the name of any Industrial User (IU) subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432, 447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended) who commences discharge to the facility after the effective date of this permit.

This reporting requirement also applies to any other IU who is classified as a Significant Industrial User which discharges an average of 25,000 gallons per day or more of process wastewater into the facility (excluding sanitary, noncontact cooling and boiler blowdown wastewater); contributes a process wastewater which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the facility; or is designated as such by the Control Authority as defined in 40 CFR § 403.3(f) on the basis that the industrial user has a reasonable potential to adversely affect the wastewater treatment facility's operation, or for violating any pretreatment standard or requirement (in accordance with 40 CFR § 403.8(f)(6)).

2. In the event that the Permittee receives originals of reports (baseline monitoring reports, 90-day compliance reports, periodic reports on continued compliance, etc.) from industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR chapter I, subchapter N (Parts 405-415, 417-430, 432-447, 449-451, 454, 455, 457-461, 463-469, and 471 as amended), or from a Significant Industrial User, the Permittee shall forward the originals of these reports within ninety (90) days of their receipt to EPA, and copy the State.
3. In accordance with 40 CFR § 122.44(j)(1) the Permittee must identify, in terms of character and volume, any SIUs discharging into the POTW or facility subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403. SIUs information shall be updated at a minimum of once per year or at that frequency necessary to ensure that all SIUs are properly permitted and/or controlled. The records shall be maintained and updated as necessary.
4. Beginning the first full calendar year after the effective date of the permit, the Permittee shall commence annual sampling of the following types of industrial discharges into the POTW:
 - Commercial Car Washes
 - Platers/Metal Finishers
 - Paper and Packaging Manufacturers
 - Tanneries and Leather/Fabric/Carpet Treaters

- Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or teflon type coatings (i.e. bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment C. The industrial discharges sampled and the sampling results shall be summarized and submitted to EPA and copy the state as an electronic attachment to the March discharge monitoring report due April 15 of the calendar year following the testing.

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 § 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.

- 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.

G. SPECIAL CONDITIONS

There are no special conditions.

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 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/>.

4. 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 for reduction in testing frequency;
 - (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing;
 - (5) Report of new industrial user commencing discharge; and

(6) Report received from existing industrial user.

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

5. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee shall submit required reports and notifications under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs) electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), which will be accessible through EPA's Central Data Exchange at <https://cdx.epa.gov/>.

6. 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**

7. 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

- c. The Permittee shall verbally notify the Massachusetts Division of Marine Fisheries within 4 hours of any emergency condition, plant upset, bypass, SSO discharges or other system failure which has the potential to violate bacteria permit limits. Within 24 hours a notification of a permit excursion or plant failure shall be sent to the following address:

**Division of Marine Fisheries
Shellfish Management Program
30 Emerson Avenue
Gloucester, MA 01930
978-491-6244**

I. STATE 401 CERTIFICATION CONDITIONS

1. This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate appropriate State water quality certification requirements (if any) into the Final 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°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 TESTS¹

1.	Test type	Static, non-renewal
2.	Temperature (°C)	20 ± 1°C or 25 ± 1°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 <u>Selenastrum</u> 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	≥ 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 TEST¹**

1. Test Type	Static, non-renewal
2. Temperature (°C)	20 ± 1 ° C or 25 ± 1°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	≥ 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.

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
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:

- 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)
- 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
- 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-Kärber
- Trimmed Spearman-Kärber
- 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° 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 \geq 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.

<u>Parameter</u>	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 than 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: PFAS Analyte List

Target Analyte Name	Abbreviation	CAS Number
Perfluoroalkyl carboxylic acids		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Fluorotelomer sulfonic acids		
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	8:2FTS	39108-34-4
Perfluorooctane sulfonamides		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methyl perfluorooctanesulfonamide	NMeFOSA	31506-32-8
N-ethyl perfluorooctanesulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols		
N-methyl perfluorooctanesulfonamidoethanol	NMeFOSE	24448-09-7
N-ethyl perfluorooctanesulfonamidoethanol	NEtFOSE	1691-99-2
Per- and Polyfluoroether carboxylic acids		
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

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

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¹Updated July 17, 2018 to fix typographical errors.

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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

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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

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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

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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

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- (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

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- 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

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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.

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- 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

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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

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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

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“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 96-483 and 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

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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

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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.

LC₅₀ means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC₅₀ = 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

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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).

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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

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(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

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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

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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.

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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

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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: MA0030350

PUBLIC NOTICE START AND END DATES: May 1, 2023 to May 30, 2023

NAME AND MAILING ADDRESS OF APPLICANT:

Governor's Academy
1 Elm Street
Byfield, Massachusetts 01922

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Governor's Academy Wastewater Treatment Facility
Elm Street
Byfield, Massachusetts 01922

RECEIVING WATER AND CLASSIFICATION:

Unnamed Tributary to the Mill River (MA91-09)
Parker River Watershed
Class B

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Appendices

Appendix A – Monitoring Data Summary

Appendix B – Reasonable Potential and Limits Calculations

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 Governor's Academy Wastewater Treatment Facility (the Facility) into the unnamed tributary to the Mill River.

The permit currently in effect was issued on September 28, 2011, with an effective date of December 1, 2011, and expired on November 30, 2016 (the 2011 Permit). The Permittee filed an application for permit reissuance with EPA dated May 26, 2016, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on June 15, 2016, the Facility's 2011 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on March 22, 2023.

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 biochemical oxygen demand (BOD₅), total suspended solids (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 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 WQs, 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 WQs, the State waives, or is deemed to have waived, 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 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 WQSs 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

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)

§§ 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 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 through 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 level³ (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 136 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.

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).

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 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 2011 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.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and Outfall 001 to the unnamed tributary to Mill River are shown in Figure 1. The location of the outfall is latitude 42° 44' 53" and longitude 70° 53' 47".

The Governor's Academy is an independent secondary boarding school located in the Town of Byfield, MA. The school's facilities include classrooms, administrative buildings, cafeteria and sporting facilities, and residential units. These facilities occupy approximately 800 acres and serve about 600 students and employees. The remainder of the Academy's 540 acres of land is comprised of woodlands, marshlands and a golf course. The wastewater treatment facility

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

(WWTF) is located at the southeast corner of the campus and has a design flow of approximately 52,000 gallons per day (gpd).

The Permittee does not have any major industries contributing industrial wastewater to the WWTF, and thus is not required to have a pretreatment program.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from February 2018 through January 2023 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Governor's Academy WWTF applies biological treatment using membrane bioreactor (MBR) technology, which consists of one 27,000 gallon biological reactor holding 14 membrane modules. Wastewater is added to the biological reactor, which contains high concentrations of microorganisms, which provide biological treatment. Dissolved oxygen is provided through diffusers, which also maintain the biological solids in suspension. Effluent is withdrawn through hollow fiber strand membranes by permeate pumps. The membrane modules can be removed separately and cleaned or replaced. The biological process is operated to provide a high degree of nitrification, thereby minimizing effluent ammonia concentrations.

In December 2022, the facility added a further treatment process designed to achieve copper precipitation through an alum-based chemical addition (referred to as EPIC 2400) in an effort to comply with the copper limits from the existing 2011 Permit. See Section 5.1.9.2 below for a further discussion of the copper limits.

Effluent from the MBR process is pumped directly to the ultraviolet (UV) disinfection units. The effluent from the UV units is piped to a nearby outfall that discharges to an unnamed intermittent stream, a tributary to the Mill River. Sludge is removed from the facility and trucked to the Greater Lawrence Sanitary District WWTF where it is received into the treatment works as septage and subject to further treatment.

A flow diagram of the Treatment Facility is shown in Figure 2.

3.1.2 Collection System Description

The sewerage collection system serving the campus includes gravity sewers and five pump stations. Based on the 2022 Annual Infiltration and Inflow Summary Report, the annual average infiltration and inflow ("I/I") to the sewer system was 973 gpd.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Governor's Academy WWTF discharges through Outfall 001 into an unnamed intermittent tributary to the Mill River. This "unnamed tributary" to the Mill River is a stormwater drainage

channel that originates from a 24-inch culvert adjacent to Elm Street and runs along the fence line of the Academy’s treatment plant before passing under Route 1 and joining the Mill River. Effluent from the WWTF discharges through a 6-inch pipe into this drainage channel on the west side of Route 1. Stormwater run-off from two stormwater catch basins at the intersection of Elm Street and Route 1 enter this combined flow just before it crosses under Route 1. On the east side of Route 1, additional stormwater flow from a drainage channel joins the combined stormwater and effluent channel before the conveyance enters the Mill River approximately 270 feet away. The drainage channel discharges into Segment MA91-09 of the Mill River, which is designated as Class SA and continues to the confluence with the Parker River downstream. According to the MA WQS 314 CMR 4.06, Table 20 (Parker River Basin), this tidal portion of the Mill River is within the Great March Area of Critical Environmental Concern (ACEC), formerly referred to as the Parker River/Essex Bay ACEC.

The unnamed tributary is freshwater and is considered a Class B warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (“CMR”) 4.06(6)(b). The MA WQS at 314 CMR 4.05(3)(b) states that Class B *“waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06(1)(d)6. and (6)(b) as a “Treated Water Supply”, they shall be suitable as a source of public water supply with appropriate treatment. Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.”*

The tidal portion of the Mill River is considered Class SA in the Massachusetts WQSs, 314 CMR 4.06(6)(b). The MA WQS at 314 CMR 4.05(4)(a) states that Class SA *“waters are designated as an excellent 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. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated for shellfishing in 314 CMR 4.06(6)(b), these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value.”*

The Mill River at Segment MA91-09 is listed in the final *Massachusetts Integrated List of Waters for the Clean Water Act 2018-2020 Reporting Cycle* (“303(d) List”) as a Category 5 “Waters Requiring a TMDL.”⁵ The pollutant requiring a TMDL is fecal coliform. The status of each designated use is presented in Table 1.

Table 1 – Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Not Assessed
Fish Consumption	Not Assessed
Shellfish Harvesting	Impaired (Fecal Coliform)

⁵ *Massachusetts 2018-2020 Integrated List of Waters for the Clean Water Act 2018/2020 Reporting Cycle*, MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, December 2019.

Primary Contact Recreation	Not Assessed
Secondary Contact Recreation	Not Assessed
Aesthetics	Not Assessed

According to the *Parker River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report*⁶, designated uses of Segment MA91-09 of the Mill River for aquatic life, fish consumption, primary recreation, secondary recreation, and aesthetics have not been assessed; shellfish harvesting is impaired due to Fecal Coliform.

In January 2021, MassDEP published the *Final Pathogen TMDL for the Parker River Watershed*.⁷ Table ES-2 of the TMDL presents the wasteload allocation (WLA) for Fecal Coliform applicable to all NPDES WWTP discharges, which includes the Governor's Academy WWTF. The TMDL requires a geometric mean of 14 organisms per 100 ml and not more than 10% of the samples to be greater than or equal to 28 organisms per 100 ml. For further discussion, see Section 5.1.5 below.

4.2 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water⁸. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs require that

- (a) for rivers and streams, the lowest condition is the lowest 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)
- (b) in waters where flows are regulated by dams or similar structures, the lowest flow condition is the flow equaled or exceeded 99% of the time on a yearly basis, or another equivalent flow agreed upon by the State.

See 314 CMR 4.03(3)(b). The lowest flow in this case is the 7Q10 low flow.

Since the WWTF discharges into an intermittent tributary (as discussed in Section 4.1 above), the 7Q10 low flow is 0 under critical conditions. Therefore, the dilution factor (DF) was calculated using the design flow (Q_d) and the critical flow in the receiving water upstream of the discharge (Q_s) as follows:

$$DF = (Q_s + Q_d)/Q_e$$

Where:

Q_s = 7Q10 in million gallons per day (MGD)

Q_e = Discharge flow in MGD

⁶ Available at: <https://www.mass.gov/doc/parker-river-watershed-2004-2008-assessment-report-0/download>.

⁷ Available at: <https://www.mass.gov/doc/final-pathogen-tmdl-for-parker-river-basin/download>.

⁸ EPA Permit Writer's Manual, Section 6.2.4

Therefore:

$$DF = (0 \text{ MGD} + 0.052 \text{ MGD})/0.052 \text{ MGD} = 1$$

Therefore, under critical conditions the discharge does not have any dilution.

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 February 2018 to January 2023 (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 2011 Permit is 0.052 MGD, as a rolling annual average flow, based on the Facility’s design flow. The DMR data during the review period shows a maximum rolling annual average flow of 0.023 MGD. There have been no exceedances of the flow limit during the review period.

The Draft Permit continues the 0.052 MGD flow limit from the 2011 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 (BOD₅) and Total Suspended Solids (TSS) Limits

The average monthly and average weekly BOD₅ and TSS limits of 5.8 mg/L and 2.5 lbs/day in the 2011 Permit were carried forward from the 2003 Permit as water quality-based effluent limits (WQBELs) to achieve dissolved oxygen criteria and narrative criteria regarding benthic deposits and aesthetics.

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

Given that no new WLAs have been established, the Draft Permit proposes the same limits as in the 2011 Permit in accordance with antidegradation provisions discussed in Section 2.2.2 above and anti-backsliding regulations discussed in Section 2.6 above. The monitoring frequency remains once per week.

5.1.3 Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement

In accordance with the provisions of 40 CFR § 133.102(a)(3) and (b)(3), the Draft Permit requires that the 30-day average percent removal for BOD₅ and TSS be not less than 85%. This requirement was not required to be reported in the 2011 Permit so there is not DMR data to assess historic compliance. The Draft Permit requires monitoring of BOD₅ and TSS in the influent twice per month to calculate the percent removal as an average monthly value.

5.1.4 pH

Consistent with the requirements of Massachusetts WQS at 314 CMR 4.05(3)(b)(3), the Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.3 standard units at any time. DMR data during the review period show that there have been no exceedances of the pH limitations.

The pH limits in the 2011 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The monitoring frequency has been increased from once per week to five per week to ensure consistent compliance with water quality standards, which is particularly important in this case given the lack of dilution under critical flow conditions.

5.1.5 Bacteria

Enterococci

The 2011 Permit includes effluent limits for *Enterococci* bacteria to protect recreational uses. The limits are an average monthly of 35 colony forming units (cfu)/100 ml and a maximum daily of 104 cfu/100 ml. The DMR data during the review period shows no exceedances.

Updated Massachusetts WQS with respect to bacteria, 314 CMR 4.05(5)(f)1, were approved by EPA on March 31, 2022. Due to the proximity of both Class B and Class SA waters downstream, the discharge must comply with both Massachusetts WQS at 314 CMR 4.05(3)(b)4 (for Class B) and 4.05(4)(a)4.b (for Class SA). These provisions reference 314 CMR 4.05(5)(f)1. and 2., respectively, which both require *Enterococci* limits of 35 cfu/100 ml (average monthly) and 130 cfu/100 ml (maximum daily). Given that the existing limits of 35 cfu/100 ml and 104 cfu/100 ml are equal to or more stringent than these levels, they satisfy the updated WQS. Therefore, the existing limits are carried forward due to anti-backsliding regulations discussed in Section 2.6 above. Monitoring frequency remains once per week.

Fecal Coliform

The 2011 Permit includes effluent limits for fecal coliform with an average monthly limit of 14 cfu/100 ml and a maximum daily limit of 28 cfu/100 ml. These limits were based on the applicable WQS to protect shellfishing in Class SA waters, given the proximity of the tidal portion of the Mill River downstream of the discharge. The DMR data during the review period shows that there have been no violations of these limits.

In January 2021, MassDEP published the *Final Pathogen TMDL for the Parker River Watershed* which includes a WLA for fecal coliform identical to these limits to protect shellfish harvesting uses of the downstream waters. Further, the updated 2022 Massachusetts WQS at 3.05(4)(a)4.a require these same limits to continue to protect shellfishing uses downstream. Under the Massachusetts WQS, a shellfishing designation for a receiving water makes that receiving water subject to more stringent regulation regardless of whether shellfishing areas in the receiving water are approved for use by the Massachusetts Division of Marine Fisheries. Therefore, to be consistent with the 2021 TMDL as well as the 2022 WQS, the Draft Permit carries forward these limits. Monitoring frequency has been increased from once per week to three times per week based on the proximity to waters designated for shellfishing and the potential impact to human health.

5.1.6 Dissolved Oxygen

The 2011 Permit includes a dissolved oxygen minimum limit of 5.0 mg/L. This requirement was established to assure that dissolved oxygen levels remain above the Massachusetts WQS at 4.05(3)(b)1 of 5.0 mg/L, particularly during low flow periods.

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

The Draft Permit carries forward the DO limit. The monitoring frequency has been increased from once per week to five per week to ensure consistent compliance with water quality standards, which is particularly important in this case given the lack of dilution under critical flow conditions.

5.1.7 Ammonia

The 2011 Permit includes ammonia effluent limitations of 1.0 mg/L average monthly, 1.0 mg/L average weekly, and 1.5 mg/L maximum daily. The DMR data during the review period shows there were four exceedances of the average weekly and maximum daily limits and one exceedance of the average monthly limit.

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, temperature and whether early life stages of fish are present in the receiving water and the freshwater chronic criterion is

dependent on pH and temperature. The marine water quality criteria are dependent on pH and temperature.

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 2011 Permit already contained a limit for ammonia, the same mass balance equation is used to determine if a more stringent limit would be required to continue 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.

To determine the applicable ammonia criteria, EPA assumes a warm weather (April through October) temperature of 25° C and a cold weather (November through March) temperature of 5° C. As no ambient pH data in the vicinity of the outfall was available EPA used an assumed ambient pH of 7.0 S.U.

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 no need for more stringent limits to continue to protect WQS so the existing limits are being carried forward for the reasons specified in Appendix B.

Further, an analysis was done to ensure that these ammonia limits are protective of downstream marine waters. As mentioned previously, the discharge enters an unnamed tributary and then feeds into the Mill River, which has a 7Q10 just upstream of this confluence of approximately 0.28 MGD. The Permittee provided monitoring results for 20 consecutive months from July 2021 through February 2023 to assist in characterizing the Mill River. These data indicate a median hardness of 64.7 mg/L upstream of the confluence. EPA applied these data and critical flows using the same mass balance equation presented in Appendix B. The projected downstream ammonia concentrations under critical conditions were 0.2 mg/L (daily max) and 0.1 mg/L (monthly ave), which are far below the most stringent marine criterion of 6.6 mg/L. Therefore, EPA confirms that the existing limits are protective of the immediate freshwater tributary as well as the downstream marine waters.

Given the limited dilution and proximity of the discharge to an Area of Critical Environmental Concern (ACEC), the monitoring frequency will remain at once per week. Effluent and ambient monitoring for ammonia will also continue to be required in the quarterly WET tests.

5.1.8 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 freshwater ecosystems and nitrogen in marine or estuarine ecosystems. Given that this discharge is to an unnamed intermittent tributary that is only a few hundred feet long (partially underground through a culvert under Route 1, as shown in Figure 1) and then discharges into Segment MA91-09 of the Mill River which is designated as Class SA, phosphorus is not expected to impact designated uses downstream of the discharge and is not evaluated below. Thus, for this receiving water, only nitrogen is the nutrient of concern evaluated below.

5.1.8.1 Total Nitrogen

Excessive nitrogen loadings to waterways can cause water quality problems at estuaries. Several estuaries in New England, most notably Long Island Sound, Narragansett Bay, and Buzzards Bay experience eutrophication and are subject to Total Maximum Daily Loads (“TMDLs”) to reduce nutrient enrichment. If a facility discharges to a watershed that has an effective TMDL, the applicable Waste Load Allocation (“WLA”) for that facility must be included in the authorization to discharge under the WWTF GP.

The Governor’s Academy WWTF does not have a WLA as part of any effective TMDL but EPA is concerned about nitrogen discharges to estuaries that are not subject to TMDLs but may be experiencing nitrogen enrichment. This is especially important in this case given that the downstream receiving water is designated as an Area of Critical Environmental Concern (as discussed in Section 4.1 above).

To address this concern, the Draft Permit includes year-round monitoring and reporting requirements for total nitrogen. The frequency of such monitoring EPA requires in similar MA permits is based on the design flow of the facility. Facilities with a larger design flow are required to sample more frequently because their nitrogen load is expected to be more significant. Facilities with design flow less than 100,000 gpd typically receive quarterly monitoring; facilities with design flow greater than or equal to 100,000 gpd typically receive monthly monitoring. Given that the design flow of this facility is below 100,000 gpd, EPA considers that quarterly monitoring is sufficient to accurately quantify the nitrogen load from this facility. The results of this monitoring effort may be used in the future to determine whether nitrogen limitations are necessary to protect water quality standards downstream.

5.1.9 Metals

5.1.9.1 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 found at 314 CMR 4.06 Appendix C. The estimated hardness of the unnamed tributary 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 (assumed at 0 mg/L for a 7Q10 flow of 0 MGD) 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 155.0 mg/L and the corresponding criteria are also presented in Appendix B.

Based on the 2022 MA WQS update, the aluminum criteria are dependent on hardness, pH and dissolved organic carbon (DOC) as described at 314 CMR 4.06 Table 29. Given that there is limited site-specific data available, the watershed default values are used in the analysis below.

5.1.9.2 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 2011 Permit, the same mass balance equation is used to determine if a more stringent limit would be required to continue 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_e) allowable to meet WQS based on current conditions.

Based on the information described above, the results of this analysis for each metal are presented in Appendix B.

As shown, there is no reasonable potential to cause or contribute to an excursion of WQS for aluminum, cadmium, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals. Additionally, there is no need for more stringent copper or lead limits to continue to protect WQS so the existing limits are being carried forward for the reasons specified in Appendix B.

Further, an analysis was done to ensure that these copper and lead limits are protective of downstream marine waters. As mentioned previously, the discharge enters an unnamed tributary and then feeds into the Mill River, which has a 7Q10 just upstream of this confluence of approximately 0.28 MGD. The Permittee provided monitoring results for 20 consecutive months from July 2021 through February 2023 to assist in characterizing the Mill River. These data indicate a median hardness of 64.7 mg/L and a median copper concentration of 0 mg/L upstream

of the confluence. No ambient lead data were provided. EPA applied these data and critical flows using the same mass balance equation presented in Appendix B. The projected downstream copper concentrations under critical conditions were 2.5 ug/L (daily max) and 1.7 ug/L (monthly ave), which are below the marine criteria of 5.8 ug/L and 3.7 ug/L, respectively. The projected downstream lead concentration under critical conditions was 0.6 ug/L (monthly ave), which is well below the marine criterion of 8.5 ug/L. Therefore, EPA confirms that the existing limits are protective of the immediate freshwater tributary as well as the downstream marine waters. EPA also confirmed that no other metals limits are necessary to protect downstream marine criterion.

During the review period, the discharge was consistently above the copper limits and is operating under an administrative order with achievable interim limit. See Appendix A. EPA notes that in December 2022 the facility installed a treatment process designed to achieve copper precipitation using an alum-based coagulant (referred to as EPIC 2400) in an effort to comply with the existing copper limits. If this treatment process is successful, the interim limits will be lifted at the end of 2023 and the final effluent limits established in the 2011 Permit and carried forward in the Draft Permit will take effect. Given the compliance history, limited dilution, and proximity of the discharge to an ACEC, the monitoring frequency for copper is increased to twice per month.

During the review period, the discharge was consistently in compliance with the lead limit. See Appendix A. Therefore, the monitoring frequency of twice per year is carried forward.

Effluent and ambient monitoring for each of these metals will continue to be required in the WET tests.

5.1.10 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 policy⁹, 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 LC₅₀. 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 LC₅₀ limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2011 Permit are C-NOEC greater than or equal to 100% and LC₅₀ greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) as the test species. EPA notes the Facility had previously received a reduction from the four times per year testing requirement to only two times per year and a reduction from the two monitoring species testing requirement to only the daphnid. Additionally, the facility was allowed to perform modified acute toxicity testing. The Facility has consistently met the acute WET limit and violated the chronic WET limit once during the review period (Appendix A).

Based on the potential for toxicity, 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 2011 Permit including the test organism and the testing frequency.

However, a modified acute toxicity test based on the 48-hour endpoint of the chronic test is no longer acceptable as it did not comply with EPA’s toxicity policy as an acceptable acute toxicity test. Hence, the draft permit requires the permittee to conduct independent acute and chronic 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.

⁹ *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters*. February 23, 1990.

5.1.11 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, 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.¹⁰ 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.

Background Information

On October 20, 2020, MassDEP published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) for the sum of the following six PFAS. *See* 310 CMR 22.00.

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

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 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.

¹⁰ 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

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and consistent with recent EPA guidance,¹¹ the Draft Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users. The quarterly monitoring shall begin the first full calendar quarter beginning six months after the effective date of the permit. The annual monitoring for certain industrial users shall begin the first full calendar year following the effective date of the permit.

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;”.

(See 40 CFR § 122.21(e)(3)(ii) and 40 CFR § 122.44(i)(1)(iv)(B)).

In the absence of a final 40 CFR § 136 method for measuring PFAS in wastewater and sludge, the Draft Permit requires the use Draft Method 1633 or, when it becomes available, the multi-lab validated Method 1633. Monitoring should include each of the 40 PFAS parameters detectable by Method 1633 (see Draft Permit Attachment B for list of PFAS parameters) and the monitoring frequency is quarterly. All PFAS results must be reported on DMRs (see 40 CFR § 122.41)(1)(4)(i)). 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.

¹¹ Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 6, 2022, Subject: “Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs.” Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf

Additionally, EPA has recently published Method 1621 to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. The Permittee shall monitor Adsorbable Organic Fluorine using Method 1621 once per quarter concurrently with PFAS monitoring to screen for a broader range of these types of emerging contaminants. This requirement also takes effect the first full calendar quarter following six months after the effective date of the permit.

All monitoring results may be used by EPA in the next permit reissuance to ensure the discharge continues to protect designated uses.

5.2 Industrial Users and Pretreatment

The Permittee is not required to develop an industrial pretreatment program. There are no significant industrial users in the collection system. However, Part I.E of the Draft Permit includes conditions that are necessary to allow EPA and MassDEP to ensure that pollutants discharged to a facility by an industrial user will not pass through the facility and cause violations of water quality standards and/or sludge use and disposal difficulties, or cause interference with the operation of the treatment works. The Draft Permit requires Permittees to notify EPA and MassDEP whenever a process wastewater discharge to a facility from an industrial user within a primary industry category is planned or if there is any substantial change in the volume or character of pollutants being discharged into the facility by a source that was discharging at the time of the effective date of permit coverage. The Draft Permit requires Permittees to report to EPA and MassDEP the name(s) of all industrial users subject to Categorical Pretreatment Standards under 40 CFR § 403.6 and 40 CFR Chapter I, Subchapter N (Parts 405-415, 417-430, 432-447, 454, 455, 457-461, 463-469, and 471 as amended) who commence discharge to the facility after the effective date of permit coverage, and to forward any original pretreatment reports submitted by industrial users within ninety (90) days of their receipt to EPA and copy MassDEP in accordance with Part I.H.4 of the Draft Permit.

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 through 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

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.

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit (See Part II.B.). Specific permit conditions have also been included in Part I.C.1. & 2. of the Draft Permit. These requirements are included to minimize the occurrence of permit exceedances and unauthorized discharges that have a reasonable likelihood of adversely affecting human health or the environment.

5.5.1 Operation and Maintenance of the Wastewater Treatment Facility

The Draft Permit, in Part I.C.1. requires the Permittee to address major storm and flood events as part of their wastewater treatment facility operation and maintenance planning. The major storm and flood plan addresses risks to the facility and its infrastructure from extreme weather events¹². The Plan should address resiliency of the facility, evaluate¹³, and implement control measures to minimize¹⁴ the impacts of major storm and flood events at the wastewater treatment facility. The

¹² “Major storm and flood events” refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. “Extreme/heavy precipitation” refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. “Extreme/heavy precipitation” does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

¹³ To determine the vulnerabilities to the facilities from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, inland flooding, sewer flow and inflow and infiltration and relevant to the facilities from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a five-year basis considering 1) historical observations from all years the Permittee has operated the facility prior to this permit’s term; 2) the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur.

¹⁴ For the purposes of this provision, the term “minimize” means to reduce and/or eliminate to the extent achievable the impacts to the facilities.

plan's requirements include: an asset vulnerability evaluation, systemic vulnerability evaluation, and alternative evaluation. These requirements are included to ensure the proper operation and maintenance of the wastewater treatment facility and to minimize the impacts of major storm and flood events.

These requirements are new. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the wastewater treatment facility and has included schedules in the Draft Permit for completing these requirements.

5.5.2 Operation and Maintenance of the Sewer System

The Draft Permit, in Part I.C.2. requires the Permittee to address major storm and flood events as part of their sewer system operation and maintenance planning. The major storm and flood plan should address risks to the sewer system and its infrastructure from extreme weather events.¹⁵ The Plan should address resiliency of the system, evaluate, and implement control measures to minimize the impacts of major storm and flood events throughout the sewer system. The requirements include; an asset vulnerability evaluation, systemic vulnerability evaluation, and alternative evaluation. These requirements are included to ensure the proper operation and maintenance of the sewer system and to minimize the impacts of major storm and flood events.

Several of these requirements are new. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the wastewater treatment facility and has included schedules in the Draft Permit for completing these requirements.

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

6.1.1 Introduction

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to 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").

¹⁵ "Major storm and flood events" refer to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. "Extreme/heavy precipitation" does not necessarily mean the total amount of precipitation at a location has increased-just that precipitation is occurring in more intense or more frequent events.

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 Service (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species. These are collectively referred to as the Services.

The federal action being considered in this case is EPA's proposed NPDES permit for the Governor's Academy WWTF, which discharges through Outfall 001 into an unnamed tributary and ultimately the Mill River. The Draft Permit is intended to replace the 2011 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.

The treatment plant is located in Byfield, MA. Outfall 001 discharges to the unnamed tributary (0.1 miles) to the Mill River at latitude 42° 44' 53" and longitude 70° 53' 47". This location is approximately 12.3 river miles from the coast.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action areas of Outfall 001 to determine if EPA's proposed NPDES permit could potentially impact any such listed species.

6.1.2 USFWS Protected Species

For protected species under jurisdiction of the USFWS¹⁶, one protected mammal, the northern long-eared bat (*Myotis septentrionalis*), listed as endangered, has been identified as occurring in the vicinity of the Governor's Academy WWTF and the Mill River (MA91-09) in Byfield, MA.

According to the USFWS, the endangered northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action areas associated with the Mill River area may overlap with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Governor's Academy WWTF NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated April 24, 2023, that based upon a standing USFWS analysis, the permit reissuance has reached the determination of "No Effect" on the northern long-eared bat.¹⁷ The USFWS determination letter concluded EPA's consultation responsibilities for the Governor's Academy WWTF NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat. No ESA section 7 consultation is required with USFWS.

¹⁶ See USFWS Information for Planning and Consultation Mapper for more information:
<https://ecos.fws.gov/ipac/location/index>

¹⁷ USFWS Project code: 2023-0073414, April 24, 2023.

6.1.3 NOAA Fisheries Protected Species

Regarding protected species under the jurisdiction of NOAA Fisheries¹⁸, a number of federally protected anadromous and marine species and life stages are present in coastal Massachusetts waters. As noted above, Governor's Academy WWTF discharges through Outfall 001 to the unnamed tributary (0.1 miles) that then discharges into the Mill River. This location is approximately 12.3 river miles from the coast.

EPA delineated a preliminary action area based on the 52,000 gallon per day (0.08 cubic foot per second) discharge. This action area likely travels approximately 500 feet downstream from the point where the unnamed tributary meets the Mill River (12.3 miles from the mouth of the Mill River). The action area is approximately 3.5 miles upstream from the furthest point of all distinct population segments of the threatened and endangered Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) adult and subadult life stages and endangered shortnose sturgeon (*Acipenser brevirostrum*) adult life stages. Because the action area of the discharge is not expected to overlap with any threatened or endangered sturgeon species or critical habitats, consultation with NOAA Fisheries under Section 7 of the ESA is not required for this federal action.

6.1.4 Finding

EPA finds that adoption of the proposed permit will have no effect on any threatened or endangered species or critical habitat and ESA section 7 informal consultation with NOAA Fisheries or USFWS is not required.

At the beginning of the public comment period, EPA notified 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.

While initiation of ESA section 7 consultation is not required at this time with the Services, ESA consultation shall be requested by the EPA or by NOAA Fisheries and/or USFWS 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, re-initiation of consultation would be required.

¹⁸ See NOAA: ESA Section 7 Mapper for more information:
<https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27>

6.2 Essential Fish Habitat

6.2.1 Introduction

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 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." 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH 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), or 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. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions.¹⁹ In some cases, a narrative identifies rivers and other waterways that should be considered EFH due to present or historic use by federally managed species. In a letter to EPA New England dated October 10, 2000, NOAA Fisheries agreed that for NPDES permit actions, EFH initial notification for purposes of consultation can be accomplished in the EFH section of the Draft Permit's supporting Fact Sheet or Federal Register Notice.

6.2.2 Federal Action

The federal action being considered in this case is EPA's proposed NPDES permit for the Governor's Academy WWTF, which discharges through Outfall 001 to the unnamed tributary (0.1 miles) that then discharges into the Mill River. The Draft Permit is intended to replace the 2011 Permit in governing the Facility. The outfall is located at latitude 42° 44' 53" N and longitude 70° 53' 47" W. The reach of the Mill River receiving the discharge is designated as Segment MA91-09 in Byfield, MA.

A review of the relevant essential fish habitat information provided by NOAA Fisheries²⁰ indicates that the outfall exists in the tidal portion of the Mill River. This section of the river is not designated as EFH for Atlantic salmon.²¹

However, according to the EFH designation for riverine systems at latitude 42° 44' 47" N, and longitude 71° 6' 19" W, the outfall intersects with spatial data representing EFH for the 17 federally managed species/management units listed in Table 2. Therefore, consultation with

¹⁹ <https://www.nefmc.org/library/omnibus-habitat-amendment-2>.

²⁰ NOAA EFH Mapper available at <https://www.habitat.noaa.gov/apps/efhmapper/>

²¹ Omnibus Essential Fish Habitat Amendment 2 Volume 2: EFH and HAPC Designation Alternatives and Environmental Impacts; pp 179-181; Table 31.

NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required.

Table 2 – Species and life stages with designated EFH in the vicinity of the Governor’s Academy WWTF Outfall 001.

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Wolffish	ALL
Winter Flounder	Eggs, Juvenile, Larvae/Adult
Little Skate	Juvenile, Adult
Atlantic Herring	Juvenile, Adult, Larvae
Atlantic Cod	Larvae, Eggs
Pollock	Juvenile, Eggs, Larvae
Red Hake	Eggs/Larvae/Juvenile
Windowpane Flounder	Adult, Larvae, Eggs, Juvenile
Winter Skate	Juvenile
White Hake	Adult, Eggs, Juvenile
Thorny Skate	Juvenile
Northern Shortfin Squid	Adult
Longfin Inshore Squid	Juvenile, Adult
Atlantic Mackerel	Eggs, Larvae, Juvenile, Adult
Bluefish	Adult, Juvenile
Atlantic Butterfish	Adult
Spiny Dogfish	Sub-Adult Female, Adult Male, Adult Female

6.2.3 EPA’s Finding of All Potential Impacts to EFH Species

EPA has determined that the operation of this Facility, as governed by this permit action, may adversely affect the EFH of the 17 designated species listed in Table 2 in the Mill River. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH:

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- Flow, TSS, BOD, Fecal Coliform, *Enterococci*, pH, DO, Ammonia-Nitrogen, Total Copper and Total Lead are regulated by the Draft Permit to meet State water quality standards;

- EPA's evaluation indicates that there is no reasonable potential for the discharge to cause or contribute to an excursion above water quality criteria for aluminum, cadmium, nickel, or zinc, as the concentrations of these metals in the effluent were well below the maximum allowable concentrations that may be present in the discharge;
- The Draft Permit requires twice per year whole effluent toxicity (WET) testing to ensure that the discharge does not present toxicity problems;
- The Facility withdraws no water from the unnamed tributary to the Mill River, or the Mill River, so there will be no impact that reduces the quality and/or quantity of EFH from impingement and entrainment of organisms;
- The Draft Permit prohibits the discharge to cause a violation of State water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combinations 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 proposed Draft Permit requirements minimize any reduction in quality and/or quantity of EFH, either directly or indirectly.

EPA believes that the conditions and limitations contained within the Governor's Academy WWTF Draft Permit adequately protect all aquatic life, as well as the essential fish habitats identified above. 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 reinitiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and this 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 and sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

6.3 Coastal Zone Management (CZM) Consistency Review

The regulation at 40 CFR § 122.49(d) states "The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce) overrides the State's nonconcurrence.

The discharge is within the defined CZM boundaries. The Permittee has submitted a letter dated May 26, 2016 to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

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 the permit writer, Michele Duspiva at the following email address: duspiva.michele@epa.gov.

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 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.

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1682.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting Michele Duspiva at 617-918-1682 or via email to duspiva.michele@epa.gov.

May 2023
Date

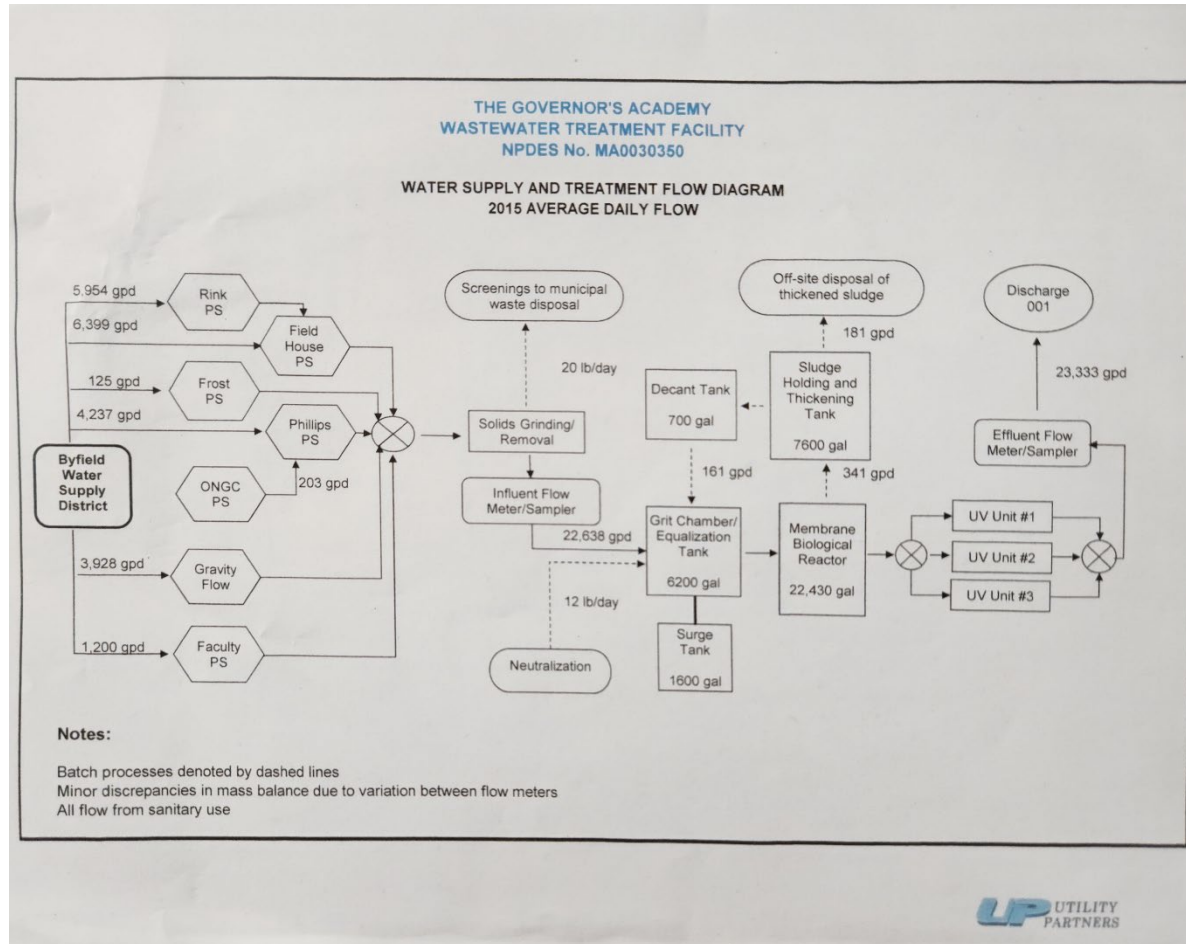
Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

Figure 1: Location of the Governor's Academy WWTF



Aerial View obtained from Google Maps (<http://maps.google.com>)

Figure 2: Flow diagram



Outfall 001

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	gal/d	gal/d	gal/d	lb/d	mg/L	mg/L	lb/d	lb/d
Effluent Limit	52000	Report	Report	2.5	5.8	5.8	2.5	Report
Minimum	12981	8835	13976	0	0	0	0	0
Maximum	22851	30920	63109	0.4	3.2	5	1.3	1.3
Median	21363	20512	29770	0	0	0	0	0
No. of Violations	0	N/A	N/A	0	0	0	0	N/A
2/28/2018	22175	25992	32696	0	0	0	0	0
3/31/2018	22228	20335	33676	0.1	1	2	0.3	0.3
4/30/2018	21677	27950	48056	0	0	0	0	0
5/31/2018	21356	25059	30108	0	0	0	0	0
6/30/2018	21109	14845	22564	0	0	0	0	0
7/31/2018	20974	19092	24488	0	0	0	0	0
8/31/2018	21003	11385	23204	0	0	0	0	0
9/30/2018	21296	25923	55112	0	0	0	0	0
10/31/2018	21350	24375	37356	0	0	0	0	0
11/30/2018	21957	27538	49744	0	0	0	0	0
12/31/2018	22205	19355	35968	0.2	1.8	3	0.4	0.4
1/31/2019	22289	25615	41484	0	0	0	0	0
2/28/2019	22299	26121	31584	0	0	0	0	0
3/31/2019	22205	19202	27680	0.2	1.5	2	0.5	0.5
4/30/2019	22119	26917	37884	0.2	1	2	0.5	0.5
5/31/2019	22117	26232	31760	0.1	0.4	2	0.4	0.4
6/30/2019	22335	16262	26476	0	0	0	0	0
7/31/2019	22461	20604	26736	0	0	0	0	0
8/31/2019	22457	11343	20640	0	0	0	0	0
9/30/2019	22124	21927	25460	0.4	2	3	0.6	0.6
10/31/2019	22069	23713	34072	0.3	1.4	3	0.7	0.7
11/30/2019	21568	21524	28536	0	0	0	0	0
12/31/2019	21568	24539	54904	0	0	0	0	0
1/31/2020	21892	24319	37724	0	0	0	0	0
2/29/2020	21909	26323	34888	0	0	0	0	0
3/31/2020	21589	15360	29380	0.1	1	2	0.2	0.2
4/30/2020	20615	15237	26020	0.04	0.4	2	0.2	0.2
5/31/2020	20615	12517	20020	0.1	0.8	3	0.3	0.3
6/30/2020	20615	9051	13976	0.1	2	3	0.2	0.2
7/31/2020	17893	8867	14452	0.2	3.2	5	0.3	0.3
8/31/2020	17893	8835	14452	0	0	0	0	0

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Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5
	Annual Rolling Ave	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max
Units	gal/d	gal/d	gal/d	lb/d	mg/L	mg/L	lb/d	lb/d
Effluent Limit	52000	Report	Report	2.5	5.8	5.8	2.5	Report
9/30/2020	16792	11251	14583	0.1	0.8	2	0.2	0.2
10/31/2020	16792	15932	21956	0	0	0	0	0
11/30/2020	15666	15792	24664	0	0	0	0	0
12/31/2020	15666	14890	37012	0.04	0.4	2	0.2	0.2
1/31/2021	12981	15085	21324	0	0	0	0	0
2/28/2021	13500	19208	29512	0.3	1.3	3	0.6	0.6
3/31/2021	13607	16651	30028	0.1	0.6	3	0.3	0.3
4/30/2021	14166	21939	35616	0.1	0.5	2	0.4	0.4
5/31/2021	15089	30920	23592	0.1	0.5	2	0.3	0.3
6/30/2021	15680	16682	23584	0.2	1	3	0.5	0.5
7/31/2021	17134	26322	57980	0.1	0.5	3	0.6	0.6
8/31/2021	17564	13965	23593	0	0.4	2	0.2	0.2
9/30/2021	18698	24857	32348	0	0	0	0	0
10/31/2021	19695	27900	46989	0	0	0	0	0
11/30/2021	20359	23752	32997	0	0	0	0	0
12/31/2021	20860	20901	32333	0.1	0.4	2	0.2	0.2
1/31/2022	21487	22610	32109	0	0	0	0	0
2/28/2022	22169	27398	34351	0.3	1.3	5	1.3	1.3
3/31/2022	22471	20274	35105	0.2	0.8	4	1	1
4/30/2022	22774	25577	32032	0.1	0.5	2	0.5	0.5
5/31/2022	22851	24517	30107	0.2	0.8	3	0.7	0.7
6/30/2022	22788	15382	20424	0	0	0	0	0
7/31/2022	22286	20294	24996	0	0	0	0	0
8/31/2022	22158	12431	23278	0	0	0	0	0
9/30/2022	21788	20420	27171	0	0	0	0	0
10/31/2022	21329	22397	27553	0	0	0	0	0
11/30/2022	21017	20003	28230	0	0	0	0	0
12/31/2022	20878	19231	27057	0	0	0	0	0
1/31/2023	21370	28515	63109	0.2	1	4	0.9	0.9

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Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	pH
	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Minimum
Units	mg/L	lb/d	mg/L	mg/L	lb/d	lb/d	mg/L	SU
Effluent Limit	Report	2.5	5.8	5.8	2.5	Report	Report	6.5
Minimum	0	0	0	0	0	0	0	6.5
Maximum	5	0.4	2	5	1.7	1.7	5	7.3
Median	0	0	0	0	0	0	0	6.7
No. of Violations	N/A	0	0	0	0	N/A	N/A	0
2/28/2018	0	0	0	0	0	0	0	6.6
3/31/2018	2	0	0	0	0	0	0	6.5
4/30/2018	0	0	0	0	0	0	0	6.6
5/31/2018	0	0.1	0.4	2	0.5	0.5	2	6.6
6/30/2018	0	0.1	0.5	2	0.4	0.4	2	6.8
7/31/2018	0	0	0	0	0	0	0	6.6
8/31/2018	0	0	0	0	0	0	0	6.7
9/30/2018	0	0	0	0	0	0	0	6.8
10/31/2018	0	0	0	0	0	0	0	6.8
11/30/2018	0	0	0	0	0	0	0	6.7
12/31/2018	3	0.1	0.5	2	0.4	0.4	2	6.6
1/31/2019	0	0	0	0	0	0	0	6.6
2/28/2019	0	0	0	0	0	0	0	6.6
3/31/2019	2	0.3	2	5	0.6	0.6	5	6.5
4/30/2019	2	0	0	0	0	0	0	6.5
5/31/2019	2	0	0	0	0	0	0	6.6
6/30/2019	0	0	0	0	0	0	0	6.6
7/31/2019	0	0.1	0.8	3	0.6	0.6	3	6.6
8/31/2019	0	0	0	0	0	0	0	6.8
9/30/2019	3	0	0	0	0	0	0	6.7
10/31/2019	3	0	0	0	0	0	0	6.7
11/30/2019	0	0	0	0	0	0	0	6.72
12/31/2019	0	0.15	0.5	2	0.6	0.6	2	6.6
1/31/2020	0	0	0	0	0	0	0	6.7
2/29/2020	0	0	0	0	0	0	0	6.7
3/31/2020	2	0	0	0	0	0	0	6.8
4/30/2020	2	0.04	0.4	2	0.2	0.2	2	7.01
5/31/2020	3	0	0	0	0	0	0	7
6/30/2020	3	0	0	0	0	0	0	7.2
7/31/2020	5	0	0	0	0	0	0	7
8/31/2020	0	0	0	0	0	0	0	7.1

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Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	pH
	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Minimum
Units	mg/L	lb/d	mg/L	mg/L	lb/d	lb/d	mg/L	SU
Effluent Limit	Report	2.5	5.8	5.8	2.5	Report	Report	6.5
9/30/2020	2	0.1	0.8	4	0.4	0.4	4	6.9
10/31/2020	0	0.1	0.5	2	0.3	0.3	2	7
11/30/2020	0	0	0	0	0	0	0	7
12/31/2020	2	0	0	0	0	0	0	7.3
1/31/2021	0	0	0	0	0	0	0	7.1
2/28/2021	3	0	0	0	0	0	0	7
3/31/2021	3	0	0	0	0	0	0	7.1
4/30/2021	2	0.3	1.5	4	1	1	4	6.9
5/31/2021	2	0	0	0	0	0	0	6.9
6/30/2021	3	0.1	0.4	2	0.4	0.4	2	6.9
7/31/2021	2	0.1	0.5	2	0.4	0.4	2	6.7
8/31/2021	2	0	0	0	0	0	0	6.9
9/30/2021	0	0	0	0	0	0	0	6.9
10/31/2021	0	0	0	0	0	0	0	6.6
11/30/2021	0	0.4	2	4	1	1	4	6.5
12/31/2021	2	0	0	0	0	0	0	6.9
1/31/2022	0	0.2	0.8	3	0.6	0.6	3	6.8
2/28/2022	5	0.3	1.3	5	1.2	1.2	5	6.6
3/31/2022	4	0	0	0	0	0	0	6.6
4/30/2022	2	0.3	1.3	3	0.6	0.6	3	6.7
5/31/2022	3	0	0	0	0	0	0	6.5
6/30/2022	0	0	0	0	0	0	0	6.5
7/31/2022	0	0.1	0.5	2	0.4	0.4	2	6.6
8/31/2022	0	0	0	0	0	0	0	6.8
9/30/2022	0	0	0	0	0	0	0	6.6
10/31/2022	0	0.4	1.8	5	1	1	5	6.7
11/30/2022	0	0	0	0	0	0	0	6.6
12/31/2022	0	0	0	0	0	0	0	6.6
1/31/2023	4	0.4	1	5	1.7	1.7	5	6.7

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Parameter	pH	Enterococci	Enterococci	Fecal Coliform	Fecal Coliform	DO	Ammonia	Ammonia
	Maximum	Daily Max	GEO MEAN	Monthly Geometric Mean	Daily Max	Minimum	Monthly Ave	Weekly Ave
Units	SU	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L
Effluent Limit	8.3	104	35	14	28	5	1	1
Minimum	7.1	0	0	0	0	5.3	0.1	0.1
Maximum	7.9	3	1.4	1	1	7.3	1.1	3.5
Median	7.4	0	1	1	0	5.9	0.3	0.5
No. of Violations	0	0	0	0	0	0	1	4
2/28/2018	7.3	0	1	1	0		0.4	0.5
3/31/2018	7.5	0	1	1	0		0.2	0.3
4/30/2018	7.2	0	1	1	0	5.8	0.3	0.4
5/31/2018	7.4	1	1	1	0	6.2	0.2	0.3
6/30/2018	7.6	0	1	1	0	6	0.3	0.4
7/31/2018	7.3	2	1.2	1	0	5.8	0.3	0.3
8/31/2018	7.5	0	1	1	0	5.9	0.3	0.3
9/30/2018	7.3	0	1	1	0	5.4	0.2	0.3
10/31/2018	7.4	0	1	1	0	5.6	0.3	0.3
11/30/2018	7.3	0	1	1	0		0.2	0.4
12/31/2018	7.4	0	1	1	0		0.1	0.3
1/31/2019	7.1	0	1	1	0		0.3	0.6
2/28/2019	7.1	0	1	1	0		0.4	0.5
3/31/2019	7.3	0	1	1	0		0.4	0.5
4/30/2019	7.2	0	1	1	0	5.8	0.6	0.7
5/31/2019	7.8	1	1	1	0	5.5	0.5	1
6/30/2019	7.3	0	1	1	0	5.4	0.4	0.5
7/31/2019	7.2	1	1	1	0	5.3	0.6	0.6
8/31/2019	7.3	2	1.1	1	0	5.5	0.5	1
9/30/2019	7.4	1	1	1	0	5.6	0.4	0.6
10/31/2019	7.4	0	1	1	0	5.6	0.8	1.7
11/30/2019	7.54	0	1	1	0		0.2	0.5
12/31/2019	7.4	0	1	1	0		0.2	0.2
1/31/2020	7.5	0	1	1	0		0.4	0.7
2/29/2020	7.1	0	1	1	0		0.5	0.7
3/31/2020	7.6	0	1	1	0		0.6	0.7
4/30/2020	7.58	0	1	1	0	7.3	0.4	0.5
5/31/2020	7.6	0	1	1	0	6.2	0.5	0.5
6/30/2020	7.7	2	1.2	1	1	6.4	0.4	0.4
7/31/2020	7.7	3	1.4	1	0	5.4	0.2	0.4
8/31/2020	7.8	0	1	1	0	6	0.2	0.2

Outfall 001

Parameter	pH	Enterococci	Enterococci	Fecal Coliform	Fecal Coliform	DO	Ammonia	Ammonia
	Maximum	Daily Max	GEO MEAN	Monthly Geometric Mean	Daily Max	Minimum	Monthly Ave	Weekly Ave
Units	SU	CFU/100mL	CFU/100mL	CFU/100mL	CFU/100mL	mg/L	mg/L	mg/L
Effluent Limit	8.3	104	35	14	28	5	1	1
9/30/2020	7.6	0	1	1	0	6.2	0.1	0.1
10/31/2020	7.5	0	1	1	0	6.4	0.1	0.1
11/30/2020	7.6	0	1	1	0		0.1	0.2
12/31/2020	7.7	0	1	1	0		0.1	0.3
1/31/2021	7.9	0	1	1	0		0.3	0.5
2/28/2021	7.4	0	1	1	0		1.1	3.5
3/31/2021	7.5	0	1	1	0		0.3	0.6
4/30/2021	7.3	0	1	1	0	6.42	0.5	0.9
5/31/2021	7.4	0	1	1	0	5.8	0.6	0.7
6/30/2021	7.5	0	1	1	0	5.9	0.2	0.4
7/31/2021	7.3	0	1	1	0	5.7	0.4	0.6
8/31/2021	7.7	0	1	1	0	5.8	0.5	0.6
9/30/2021	7.3	0	1	1	0	5.5	0.6	1.2
10/31/2021	7.4	0	1	1	0	6.6	0.3	0.5
11/30/2021	7.8	0	1	1	0		0.1	0.3
12/31/2021	7.6	0	1	1	0		0.4	1
1/31/2022	7.6	0	1	1	0		0.3	0.9
2/28/2022	7.5	0	1	1	0		0.7	1
3/31/2022	7.6	0	1	1	0		0.3	0.3
4/30/2022	7.2	0	1	1	0	6.4	0.8	1
5/31/2022	7.4	0	1	1	0	6.3	0.5	0.6
6/30/2022	7.2	0	1	1	0	6	0.1	0.3
7/31/2022	7.4	0	1	1	0	6	0.2	0.7
8/31/2022	7.3	0	0	0	0	6.4	0.1	0.1
9/30/2022	7.5	0	1	1	0	7.1	0.5	0.6
10/31/2022	7.2	0	1	1	0	6.3	0.4	1.1
11/30/2022	7.6	0	1	1	0		0.1	0.3
12/31/2022	7.5	0	1	1	0		0.1	0.3
1/31/2023	7.7	0	1	1	0		0.1	0.4

Outfall 001

Parameter	Ammonia	Copper	Copper	Copper	Copper	Copper	Copper	Lead
	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Max	Monthly Ave
Units	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	1.5	13	33	45	20	37	49	5
Minimum	0.1	12	6.7	18	12	11	18	0
Maximum	3.5	45	31	41.7	45	31	41.7	0.6
Median	0.5	27	17.15	22	27	19	22	0
No. of Violations	4	35	0	0	28	0	0	0
2/28/2018	0.5	12			12			
3/31/2018	0.3	24			24			0
4/30/2018	0.4	29			29			
5/31/2018	0.3	27			27			
6/30/2018	0.4	28			28			
7/31/2018	0.3	30			30			
8/31/2018	0.3	32			32			
9/30/2018	0.3	24			24			
10/31/2018	0.3	25			25			
11/30/2018	0.4	22			22			
12/31/2018	0.3	31			31			0
1/31/2019	0.6	29			29			
2/28/2019	0.5	26			26			
3/31/2019	0.5	28			28			0
4/30/2019	0.7	28			28			
5/31/2019	1	13			13			
6/30/2019	0.5	25			25			
7/31/2019	0.6	19			19			
8/31/2019	1	18			18			
9/30/2019	0.6	30			30			
10/31/2019	1.7	18			18			
11/30/2019	0.3	15			15			
12/31/2019	0.2	19			19			0.2
1/31/2020	0.7	18			18			
2/29/2020	0.7	21			21			
3/31/2020	0.7	19			19			0
4/30/2020	0.5	33			33			
5/31/2020	0.5	28			28			
6/30/2020	0.4	45			45			
7/31/2020	0.4	38			38			
8/31/2020	0.2	31			31			

Outfall 001

Parameter	Ammonia	Copper	Copper	Copper	Copper	Copper	Copper	Lead
	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max	Daily Max	Daily Max	Monthly Ave
Units	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	1.5	13	33	45	20	37	49	5
9/30/2020	0.1	38			38			
10/31/2020	0.1	38			38			
11/30/2020	0.2	31			31			
12/31/2020	0.3	24			24			0.6
1/31/2021	0.5	35			35			
2/28/2021	3.5	26			26			
3/31/2021	0.6			22			22	0.1
4/30/2021	0.9			22			22	
5/31/2021	1.1			18			18	
6/30/2021	0.4			18			18	
7/31/2021	0.6			18			18	
8/31/2021	0.8			32			32	
9/30/2021	1.2			41.7			41.7	
10/31/2021	0.5		24			24		
11/30/2021	0.3		21			21		
12/31/2021	1		19			19		0
1/31/2022	0.9		22			22		
2/28/2022	1.6		29			29		
3/31/2022	0.4		31			31		0.1
4/30/2022	1.8		19			19		
5/31/2022	0.6		28			28		
6/30/2022	0.3		13			14		
7/31/2022	0.7		10.3			14		
8/31/2022	0.1		10.3			14		
9/30/2022	1.1		11.8			13		
10/31/2022	0.6		15.3			20		
11/30/2022	0.3		11			13		
12/31/2022	0.3		6.7			11		0
1/31/2023	0.4		12			15		

WET Effluent

Parameter	LC50 Acute Ceriodaphnia	C-NOEC Chronic Ceriodaphnia	Aluminum	Cadmium	Copper	Lead	Nickel
	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	100	Report	Report	Report	Report	Report
Minimum	100	12.5	0	0	0.018	No Data	0.002
Maximum	100	100	0.014	0.00012	26.9	No Data	0.011
Median	100	100	0	0	0.0285	No Data	0.0035
No. of Violations	0	1	N/A	N/A	N/A	N/A	N/A
5/31/2018	100	100	0	0	0.028	0	0.0035
9/30/2018	100	100	0	0	0.029	0	0.0034
5/31/2019	100	100	0	0	0.022	0	0.0032
9/30/2019	100	12.5	0.014	0	0.028	0	0.0035
5/31/2020	100	100	0	0	0.034	0	0.011
9/30/2020	100	100	0	0	0.038	0	0.0046
5/31/2021	100	100	0.0052	0	0.018	0	0.002
9/30/2021	100	100	0	0.00012	0.042	0	0.005
5/31/2022	100	100	0.014	0.0001	0.028	0	0.003
9/30/2022	100	100	0	0	26.9	0	0.004

WET Effluent

Parameter	Zinc	Hardness
	Daily Max	Daily Max
Units	mg/L	mg/L
Effluent Limit	Report	Report
Minimum	0.016	130
Maximum	0.078	200
Median	0.0325	155
No. of Violations	N/A	N/A
5/31/2018	0.03	150
9/30/2018	0.034	160
5/31/2019	0.042	130
9/30/2019	0.078	
5/31/2020	0.031	150
9/30/2020	0.039	200
5/31/2021	0.031	130
9/30/2021	0.031	166
5/31/2022	0.035	180
9/30/2022	0.016	

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).

For any pollutant(s) with an existing WQBEL, EPA notes that the analysis described in 40 CFR § 122.44(d)(1)(i) has already been conducted in a previous permitting action demonstrating that there is reasonable potential to cause or contribute to an excursion of WQS. Given that the permit already contains a WQBEL based on the prior analysis and the pollutant(s) continue to be discharged from the facility, EPA has determined that there is still reasonable potential for the discharge of this pollutant(s) to cause or contribute to an excursion of WQS. Therefore, the WQBEL will be carried forward unless it is determined that a more stringent WQBEL is necessary to continue to protect WQS or that a less stringent WQBEL is allowable based on anti-backsliding regulations at CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). For these pollutant(s), if any, the mass balance calculation is not used to determine whether there is reasonable potential to cause or contribute to an excursion of WQS, but rather is used to determine whether the existing limit needs to be more stringent in order to continue to protect WQS.

From a technical standpoint, when a pollutant is already being controlled as a result of a previously established WQBEL, EPA has determined that it is not appropriate to use new effluent data to reevaluate the need for the existing limit because the reasonable potential to cause or contribute to an excursion of WQS for the uncontrolled discharge was already established in a previous permit. If EPA were to conduct such an evaluation and find no reasonable potential for the controlled discharge to cause or contribute to an excursion of WQS, that finding could be interpreted to suggest that the effluent limit should be removed. However, the new permit without the effluent limit would imply that existing controls are unnecessary, that controls could be removed and then the pollutant concentration could rise to a level where there is, once again, reasonable potential for the discharge to cause or contribute to an excursion of WQS. This could result in an illogical cycle of applying and removing pollutant controls with each permit reissuance. EPA's technical approach on this issue is in keeping with the Act generally and the NPDES regulations specifically, which reflect a precautionary approach to controlling pollutant discharges.

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.

Appendix B – Reasonable Potential and Limits Calculations

NPDES Permit No. MA0030350

Pollutant	Conc. Units	Q _s (MGD)	C _s ¹	Q _e (MGD)	C _e ²		Q _d (MGD)	C _d		Criteria		Reasonable Potential		Limits	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	C _e & C _d > Acute Criteria	C _e & C _d > Chronic Criteria	Acute	Chronic
Aluminum	µg/L	0	0	0.052	17.5	17.5	0.052	17.5	17.5	932.0	396.0	N	N	N/A	N/A
Cadmium	µg/L	0	0	0.052	0.12	0.12	0.052	0.12	0.12	2.9	1.1	N	N	N/A	N/A
Copper	µg/L	0	0	0.052	20.0	13.0	0.052	20.0	13.0	21.2	13.6	Y	Y	20.0	13.0
Lead	µg/L	0	0	0.052	0.5	5.0	0.052	0.5	5.0	142.6	5.6	N	Y	N/A	5.0
Nickel	µg/L	0	0	0.052	8.1	8.1	0.052	8.1	8.1	679.8	75.6	N	N	N/A	N/A
Zinc	µg/L	0	0	0.052	64.8	64.8	0.052	64.8	64.8	173.7	173.7	N	N	N/A	N/A
Ammonia (Cold)	mg/L	0	0	0.052	1.5	1.0	0.052	1.5	1.0	37.6	4.4	Y	Y	1.5	1.0
Ammonia (Warm)	mg/L	0	0	0.052	1.5	1.0	0.052	1.5	1.0	11.1	1.4	Y	Y	1.5	1.0

¹Median concentration for the receiving water just upstream of the facility’s discharge taken from the WET testing data during the review period.

²Values 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. If the pollutant already has a WQBEL (for either acute or chronic conditions), the value represents the existing limit.

UNITED STATES ENVIRONMENTAL
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5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION (MASSDEP)
COMMONWEALTH OF MASSACHUSETTS
100 CAMBRIDGE STREET, SUITE 900
BOSTON, MASSACHUSETTS 02114

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

PUBLIC NOTICE PERIOD: May 1, 2023 to May 30, 2023

NAME AND MAILING ADDRESS OF APPLICANT:

Governor's Academy
1 Elm Street
Byfield, Massachusetts 01922

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Governor's Academy Wastewater Treatment Facility
Elm Street
Byfield, Massachusetts 01922

RECEIVING WATER AND CLASSIFICATION:

Unnamed Tributary to the Mill 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 Governor's Academy WWTF, which discharges treated domestic wastewater. Sludge from this facility is transported to the Greater Lawrence Sanitary District WWTF where it is received into the treatment works as septage and subject to further treatment. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice and 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. Furthermore, 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:

Michele Duspiva
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-4)
Boston, MA 02109-3912
Telephone: (617) 918-1682
Email: Duspiva.michele@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 **May 30, 2023**, 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. All commenters who want MassDEP to consider their comments in the state decision-making processes (i.e., the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: <https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities>.

Any person, prior to the close of the EPA 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.

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

LEALDON LANGLEY, DIRECTOR
DIVISION OF WATERSHED MGMT
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION