

**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”),

City of Berlin, New Hampshire

is authorized to discharge from the facility located at

**Berlin Pollution Control Facility
10 Shelby Street
Berlin, NH 03570**

and from Combined Sewer Overflow (CSO) Outfall 002

to receiving water named

Androscoggin River

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 May 7, 2015.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (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 Androscoggin 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	3.0 MGD ⁵	---	---	Continuous	Recorder
Effluent Flow ⁵	Report MGD	---	Report MGD	Continuous	Recorder
BOD ₅	30 mg/L 660 lb/day	45 mg/L 991 lb/day	50 mg/L 1,102 lb/day	2/Week	Composite
BOD ₅ Removal	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 661 lb/day	45 mg/L 991 lb/day	50 mg/L 1,102 lb/day	2/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range ⁶	6.5 - 8.0 S.U.			1/Day	Grab
Total Residual Chlorine ^{7,8}	1.0 mg/L	---	1.0 mg/L	1/Day	Grab
<i>Escherichia coli</i> ^{7,8}	126/100 mL	---	406/100 mL	3/Week	Grab
Total Aluminum ⁹	87 µg/L	---	---	2/Month	Composite
Total Copper ⁹	2.4 µg/L	---	3.1 µg/L	2/Month	Composite
Total Phosphorus ¹⁰ (June 1 – September 30)	19.8 lb/day	---	Report lb/day	2/Month	Composite
PFAS Analytes ¹¹	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹²	---	---	Report ng/L	1/Quarter	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^{13,14}					
LC ₅₀	---	---	≥ 50 %	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 ¹⁵	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 ¹⁶	---	---	Report mg/L	2/Year	Grab
pH ¹⁷	---	---	Report S.U.	2/Year	Grab

Temperature ¹⁷	---	---	Report °C	2/Year	Grab
Total Phosphorus ¹⁸ (April 1 - October 31)	---	---	Report mg/L	1/Month	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
BOD ₅	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes ¹¹	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine ¹²	---	---	Report ng/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements ^{1,2,3}	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type ⁴
PFAS Analytes ¹¹	---	---	Report ng/g	1/Quarter	Grab ¹⁹

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)

2. During the period beginning on the effective date of the permit and lasting through the expiration date, the Permittee is authorized to discharge storm water and wastewaters into the Androscoggin River from CSO Outfall 002. These discharges are authorized only during wet weather. Such discharges shall be monitored by the Permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent. Additionally, monitoring results based on Parts I.G.5 below shall be reported in the monthly Discharge Monitoring Report (DMR) for Outfall 002.

Effluent Characteristic ¹⁹	Discharge Limitation	Monitoring Requirement	
	Wet Weather Event Maximum	Measurement Frequency	Sample Type ⁴
<i>Escherichia coli</i>	1,000/100 ml	1/Year	Grab ²⁰

See pages 6 through 9 for footnotes

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 NHDES ("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.). See Part I.H.1 below for a provision to modify the pH range.
7. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

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

8. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
9. See Part I.H.3 for details related to compliance schedules for the total aluminum and total copper limits.
10. Monthly average effluent loading shall be calculated as the average of the daily discharge concentrations times the average daily flow for the month, as shown below.

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

See Part I.H.4. regarding a compliance schedule for achieving the total phosphorus limit as well as interim reporting requirements.

11. 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 B. This reporting requirement for the listed PFAS

parameters takes effect the first full calendar quarter following six months after the effective date of the permit.

12. 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. This reporting requirement takes effect the first full calendar quarter following six months after EPA notifies the Permittee that a multi-lab validated method is available.
13. The Permittee shall conduct acute toxicity tests (LC50) in accordance with test procedures and protocols specified in Attachment A of this permit. The LC50 is defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending September 30th, and December 31st. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.
14. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, 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**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
15. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, 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**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.
16. Monitoring and reporting for dissolved organic carbon (DOC) are not requirements of the Whole Effluent Toxicity (WET) tests but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.
17. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.
18. See Part I.H.2. for special conditions regarding ambient phosphorus monitoring.

19. 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>.
20. The Permittee shall sample CSO Outfall 002 at least once per calendar year. All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences. The “event maximum” values for *Escherichia coli* shall be reported on the appropriate DMR for the month sampled. Report the appropriate No Data Indicator (NODI) code on the DMR for all other months.

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 substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.
4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.
5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.
6. The discharge shall not contain oil and grease or result in benthic deposits, color, turbidity, slicks, odors, or surface floating solids in the receiving water. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.
7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.
8. The Permittee must provide adequate notice to EPA-Region 1 and the State of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to Part 301 or Part 306 of the Clean Water Act if it were directly discharging those pollutants or in a primary industry category (see 40 CFR Part 122 Appendix A as amended) discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, and from CSO outfall 002, 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). See Part I.I. 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.

C. OPERATION AND MAINTENANCE OF THE TREATMENT AND CONTROL FACILITIES

1. Adaptation Planning
 - a. *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 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

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.

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 measures,¹¹ and/or, if appropriate, the combinations 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.

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.

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 and an evaluation of how each adaptive measure taken (or planned) will be funded.

- b. *Credit for Prior Assessment(s) Completed by Permittee.* If the Permittee has 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).
- c. *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, any progress made toward implementation of adaptive measures, and any changes to the WWTF or other assets that may impact the current risk

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.

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

The Permittee shall maintain 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 and available for review by federal, state, or local agencies. 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) Interconnections with collection systems owned by other entities;
- (11) The scale and a north arrow; and
- (12) 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 continue to update and implement a Sewer System Operation and Maintenance Plan it has previously submitted to EPA and the State for the portion of the system it owns. The Plan shall be available for review by federal, state and local agencies as requested. The Plan shall include:

- (1) A description of the collection system management goals, staffing, information management, and legal authorities;
- (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities;
- (3) A preventive maintenance and monitoring program for the collection system;
- (4) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
- (5) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- (6) 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;
- (7) 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;
- (8) An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- (9) 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 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 monthly average flow exceeded 80 percent of the facility's 3.0 MGD design flow (2.4 MGD) for three consecutive months in the previous calendar year, 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 (beginning the first March 31 following 24 months from the effective date of the permit).

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 B. 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.
8. The Permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by February 19 (see also “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted electronically using EPA’s Electronic Reporting tool (“NeT”) (see “Reporting Requirements” section below).
9. Compliance with the requirements of this permit or 40 CFR Part 503 shall not eliminate or modify the need to comply with applicable requirements under RSA 485-A and Env-Wq 800, New Hampshire Sludge Management Rules.

G. COMBINED SEWER OVERFLOWS

Effluent Limitations

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water and wastewaters from CSO outfall 002.

2. The effluent discharged from the CSO is subject to the following limitations:
 - a. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (“BPT”), Best Conventional Pollutant Control Technology (“BCT”) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgment (“BPJ”) determination that BPT, BCT, and BAT for combined sewer overflow (“CSO”) control includes the implementation of Nine Minimum Controls (“NMC”) specified below. These Nine Minimum Controls and the Nine Minimum Controls Minimum Implementation Levels which are detailed further in Part I.G.3. are requirements of this permit.
 - (1) Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows;
 - (2) Maximum use of the collection system for storage;
 - (3) Review and modification of the pretreatment program to assure CSO impacts are minimized;
 - (4) Maximization of flow to the POTW for treatment;
 - (5) Prohibition of dry weather overflows from CSOs;
 - (6) Control of solid and floatable materials in CSOs;
 - (7) Pollution prevention programs that focus on contaminant reduction activities;
 - (8) Public notification to ensure that the public receives adequate notification of CSO occurrences and impacts;
 - (9) Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.
 - b. The discharges shall not cause or contribute to violations of federal or state Water Quality Standards.
3. Nine Minimum Controls Minimum Implementation Levels
 - a. The Permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and NHDES or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the controls identified in Part I.G.3.b-g of this permit plus other controls the Permittee can reasonably undertake as set forth in the documentation.

- b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.
- c. **Annually, no later than January 15th**, the Permittee shall submit a certification to NHDES and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. NHDES and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee. Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).
- d. Dry weather overflows ("DWOs") are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and NHDES orally within 24 hours of the time the Permittee becomes aware of the circumstances and a report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using "NeT-Sewer Overflow" as described in Part I.J.6 below. See also Paragraph D.1.e. of Part II of this permit.
- e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.G.5.:
- Duration (hours) of discharge;
 - Volume (gallons) of discharge;
 - National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

- f. The Permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC # 8). The signs must be located at or near the combined sewer

outfall structures and easily readable by the public from the land and water. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF BERLIN
WET WEATHER
SEWAGE DISCHARGE
OUTFALL 002

The Permittee shall place signs in English and include a universal wet weather sewage discharge symbol.

Where there are easements over property not owned by the Permittee that must be obtained to meet this requirement, the Permittee shall identify the appropriate landowners and obtain the necessary easements, to the extent practicable.

g. Public Notification Plan

- (1) Within 180 days of the effective date of the permit, the Permittee shall submit to EPA and NHDES a Public Notification Plan describing the measures that will be taken to meet NMC #8 in Part I.G.2 of this permit. The public notification plan shall include the means for disseminating information to the public, including communicating the initial, supplemental, and annual notifications required in Part I.G.3.g.(2), (3), and (4) of this permit, as well as procedures for communicating with public health departments, including downstream communities, whose waters may be affected by discharges from the Permittee's CSOs.
- (2) Initial notification of a probable CSO activation shall be provided to the public as soon as practicable, but no later than, two (2) hours after becoming aware by monitoring, modeling or other means that a CSO discharge has occurred. In addition to posting this notification to a website, this information may also be communicated using other electronic means. The initial notification shall include the following information:
 - Date and time of probable CSO discharge
 - CSO number and location
- (3) Supplemental notification shall be provided to the public as soon as practicable, but no later than, twenty-four (24) hours after becoming aware of the termination of any CSO discharge(s). In addition to posting this notification to a website, this information may also be communicated using other electronic means. The supplemental notification shall include the following information:
 - CSO number and location

- Confirmation of CSO discharge
- Date, start time and stop time of the CSO discharge

(4) Annual notification - **Annually, by January 15th**, the Permittee shall post the annual report for the previous calendar year described in Part I.G.4 below on a publicly available website, and it shall remain on the website for a minimum of 24 months.

(5) The Public Notification Plan shall be implemented no later than 12 months following the effective date of the Permit.

4. Nine Minimum Controls Reporting Requirement

Annually, no later than January 15th, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include information on the locations of CSOs, a summary of CSO outfall monitoring data required by Part I.G.5 of this permit, status and progress of CSO abatement work, the impacts of CSOs on water quality of the receiving water.

5. Combined Sewer Overflow Outfall Monitoring

For CSO Outfall 002, the Permittee must monitor the following:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency	Sample Type
Total Flow	Report Gallons per Month	Daily, when discharging	Continuous
Total Flow Duration (Duration of flow through CSO)	Report Hours	Daily, when discharging	Continuous
Number of CSO Discharge Events	Report Monthly Count	Daily, when discharging	Count

- For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month.
- For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” for the outfall for which data was not collected.
- This information shall be submitted with each monthly DMR and submitted with the

annual report required by Part I.G.4. of this permit.

H. SPECIAL CONDITIONS

1. Provision to Modify pH Range

The pH range may be modified if the Permittee satisfies conditions set forth in Part I.J.5 below. Upon notification of an approval by NHDES, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

2. Ambient Phosphorus Monitoring

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

3. Compliance Schedule for Total Aluminum and Total Copper

The effluent limits for total aluminum and total copper shall become effective 24 months from the effective date of the permit. The following compliance schedule for achieving the total aluminum and total copper limits shall apply for the first 24 months from the effective date of the permit:

- a. Within twelve (12) months of the effective date of the permit, the Permittee shall evaluate options for reducing copper and aluminum in the discharge. This evaluation must include, at a minimum, an evaluation of methods for optimization of the treatment process and potential source reduction within the collection system. The Permittee shall submit a report to EPA and NHDES documenting the findings of this analysis within one year of the effective date of the permit.
- b. During the second year that the permit is in effect, the Permittee shall implement the findings of its evaluation.

- c. During the 24-month compliance schedule, the Permittee shall monitor the effluent (twice per month) and report ($\mu\text{g}/\text{L}$) the average monthly results for aluminum, and report ($\mu\text{g}/\text{L}$) both average monthly and maximum daily results for copper.

4. Compliance Schedule for Total Phosphorus

The effluent limits for total phosphorus shall become effective 12 months from the effective date of the permit. The following compliance schedule for achieving the total phosphorus limit shall apply for the first 12 months from the effective date of the permit:

- a. Within twelve (12) months of the effective date of the permit, the Permittee shall evaluate options for reducing total phosphorus in the discharge. This evaluation must include, at a minimum, an evaluation of methods for optimization of the treatment process and potential source reduction within the collection system. The Permittee shall submit a report to EPA and NHDES documenting the findings of this analysis within one year of the effective date of the permit.
- b. The Permittee shall implement the findings of its evaluation within one year of the effective date of the permit.
- c. During the 12-month compliance schedule, the Permittee shall monitor the effluent (twice per month from June through September) and report (lb/day) both average monthly and maximum daily results for total phosphorus.

I. 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. This includes the NHDES Monthly Operating Reports (MORs). See Part I.I.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report

submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of 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

Unless otherwise specified in this permit or by the State, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.I.3 through I.I.6 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division

(NHDES–WD) electronically to the Permittee’s assigned NPDES inspector at NHDES-WD or as a hardcopy to the following addresses:

**New Hampshire Department of Environmental Services
Water Division
Wastewater Engineering Bureau
29 Hazen Drive, P.O. Box 95
Concord, New Hampshire 03302-0095**

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
NHDES Assigned NPDES Inspector at 603-271-1494**

J. STATE 401 CERTIFICATION CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification of, or interfere with the uses assigned to, said water by the New Hampshire Legislature (RSA 485-A:12).
2. This NPDES discharge permit is issued by EPA under federal law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a state permit pursuant to RSA 485-A:13.
3. EPA shall have the right to enforce the terms and conditions of this permit pursuant to federal law and NHDES-WD shall have the right to enforce the permit pursuant to state law, if the permit is adopted. Any modification, suspension, or revocation of this permit shall be effective only with respect to the agency taking such action and shall not affect the validity or status of the permit as issued by the other agency.
4. Pursuant to New Hampshire Statute RSA 485-A:13, I(c), any person responsible for a bypass or upset at a wastewater facility shall give immediate notice of a bypass or upset to all public or privately owned water systems drawing water from the same receiving

water and located within 20 miles downstream of the point of discharge regardless of whether or not it is on the same receiving water or on another surface water to which the receiving water is tributary. Wastewater facility is defined at RSA 485-A:2XIX as the structures, equipment, and processes required to collect, convey, and treat domestic and industrial wastes, and dispose of the effluent and sludge. The Permittee shall maintain a list of persons, and their telephone numbers, who are to be notified immediately by telephone. In addition, written notification, which shall be postmarked within 3 days of the bypass or upset, shall be sent to such persons.

5. The pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES-WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES-WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which is the federal effluent limitation guideline regulation for pH for secondary treatment and is found in 40 CFR § 133.102(c).
6. Pursuant to New Hampshire Code of Administrative Rules, Env-Wq 703.07(a):

Any person proposing to construct or modify any of the following shall submit an application for a sewer connection permit to the department:
 - a. Any extension of a collector or interceptor, whether public or private, regardless of flow;
 - b. Any wastewater connection or other discharge in excess of 5,000 gpd;
 - c. Any wastewater connection or other discharge to a WWTP operating in excess of 80 percent design flow capacity or design loading capacity based on actual average flow or loading for 3 consecutive months;
 - d. Any industrial wastewater connection or change in existing discharge of industrial wastewater, regardless of quality or quantity;
 - e. Any sewage pumping station greater than 50 gpm or serving more than one building;
or
 - f. Any proposed sewer that serves more than one building or that requires a manhole at the connection.
7. For each new or increased discharge of industrial waste to the POTW, the Permittee shall submit, in accordance with Env-Wq 305.10(a) an "Industrial Wastewater Discharge Request."

8. Pursuant to Env-Wq 305.15(d) and 305.16(f), the Permittee shall not allocate or accept for treatment more than 90 percent of the headworks loading limits of the facility.
9. Pursuant to Env-Wq 305.21, at a frequency no less than every five years, the Permittee shall submit to NHDES:
 - a. A copy of its current sewer use ordinance if it has been revised without department approval subsequent to any previous submittal to the department or a certification that no changes have been made.
 - b. A current list of all significant indirect dischargers to the POTW. At a minimum, the list shall include for each significant indirect discharger, its name and address, the name and daytime telephone number of a contact person, products manufactured, industrial processes used, existing pretreatment processes, and discharge permit status.
 - c. A list of all permitted indirect dischargers; and
 - d. A certification that the municipality is strictly enforcing its sewer use ordinance and all discharge permits it has issued.
10. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 3.0 MGD design flow (2.4 MGD) or design loading capacity, the Permittee shall submit to the permitting authorities a projection of flows and loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans. Before the design flow will be reached, or whenever treatment necessary to achieve permit limits cannot be assured, the Permittee may be required to submit plans for facility improvements.

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)

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

Notes:

- 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: 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

**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: NH0100013

PUBLIC NOTICE START AND END DATES: January 23, 2024 to February 22, 2024

NAME AND MAILING ADDRESS OF APPLICANT:

City of Berlin
168 Main Street
Berlin, NH 03570

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Berlin Pollution Control Facility
10 Shelby Street
Berlin, NH 03570

And from Combined Sewer Overflow (CSO) designated Outfall 002

RECEIVING WATER AND CLASSIFICATION:

Androscoggin River (Hydrologic Basin Code: 0104000)
Class B

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Appendices

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Appendix C – Rationale on the Appropriateness of, and the Authority for, the Inclusion of the
Wastewater Treatment System and Sewer System Adaptation Plan Requirements

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 Berlin Pollution Control Facility (the Facility) into the Androscoggin River.

The permit currently in effect was issued on May 7, 2015 with an effective date of August 1, 2015 and expired on August 31, 2020 (the 2015 Permit). The Permittee filed an application for permit reissuance with EPA dated January 7, 2020, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on September 30, 2020, the Facility's 2015 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a virtual site visit on November 7, 2023.

The NPDES Permit is issued by EPA under federal law, New Hampshire construes Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal, to authorize the New Hampshire Department of Environmental Services (NHDES) to "consider" a federal NPDES permit to be a State surface water discharge permit. As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

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 to the extent authorized under specific provisions 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" on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). 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 Parts 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 Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. *See also* 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based effluent

limits (QBELs). See CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

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 the New Hampshire Code of Administrative Rules, Surface Water Quality Standards, Chapter Env-Wq 1700, *et seq.* See also *generally*, N.H. Rev. Stat. Title L, Water Management and Protection, Chapters 485-A, Water Pollution and Waste Disposal.

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.

The New Hampshire Antidegradation Policy, found at Env-Wq 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a water body from an existing activity. The antidegradation regulations focus on protecting high quality waters and maintaining water quality necessary to protect existing uses. Discharges that cause “significant degradation” are defined in NH WQS (Env-Wq 1708.09(a)) as those that use 20% or more of the remaining assimilative capacity for a water quality parameter in terms of either concentration or mass of pollutants or flow rate for water quantity. When NHDES determines that a proposed increase would cause a significant impact to existing water quality, the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, that it will provide net economic or social benefit in the area in which the water body is located, and that the benefits of the activity outweigh the environmental impact caused by the reduction in water quality. *See* Env-Wq 1708.10(b).

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State’s antidegradation requirements, including the protection of the existing uses of the receiving water.

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

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation’s waters. To meet this goal, the CWA requires states to develop

information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated “List of Waters” that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

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

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be “consistent with the assumptions and requirements of any available WLA”. 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations “must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality.” 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

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

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, 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 §§ 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

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)

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

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).

- 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.

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.

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2015 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 the outfall 001 to Androscoggin River are shown in Figure 1. The latitude and longitude of the outfall 001 is 44° 27' 14" N, 71° 11' 10" W. The latitude and longitude of the Combined Sewer Overflow discharge outfall (CSO) 002 is 44° 27' 17" N, 71° 11' 12" W.

The Berlin Pollution Control Facility is a secondary wastewater treatment facility with a conventional activated sludge system that is engaged in the collection and treatment of municipal wastewater. Currently, the Facility serves approximately 9,425 residents in the Town of Berlin.

The Facility has a design flow of 3 million gallons per day (MGD), the annual average daily flow reported in the 2020 application was 2.04 MGD and the median for the last 5 years has been 1.75 MGD. The system is about 95% separate and 5% combined sewers. Wastewater is comprised of mostly domestic sewage, industrial wastewater, and some commercial sewage.

The Permittee does not have any major industries contributing industrial wastewater to the WWTP, 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 August 2018 through September 2023 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The Berlin Pollution Control Facility (BPCF) is a 3 MGD secondary treatment facility with a conventional activated sludge system. This facility is engaged in the collection and treatment of domestic and commercial wastewaters from the City of Berlin as well as landfill leachate from the Androscoggin Valley Regional Refuse Disposal District and Dummer Yard. The collection system serving the facility includes combined sewers, which collect both sewage and storm water runoff. Approximately 5% of the collection system is a combined storm and sanitary sewer.

The influent flow (average 1.97 MGD) enters the plant via three redundant centrifugal influent pumps at the headworks where grit is removed in two redundant grit chambers. The wastewater then enters one of two redundant primary clarifiers (310,252 gallons each) via gravity. An average of 0.037 MGD of primary sludge is removed from the primary clarifiers where it is pumped by 3 redundant positive displacement diaphragm pumps to the gravity thickeners (2

redundant thickeners at 24,908 gallons each). The primary Effluent gravity feeds to the aeration tanks (three redundant aeration tanks at 288,700 gallons each) where it is biologically treated and then gravity feed to the secondary clarifiers (three redundant clarifiers at 388,605 gallons each). Approximately 0.98 MGD of return activated sludge (RAS) is removed from the secondary clarifiers by gravity and sent to the RAS well where an average of 0.027 MGD of waste activated sludge (WAS) is removed and sent to one of the two redundant WAS holding tanks with the remainder (0.95 MGD average) of the RAS pumped back to the aeration tanks via 4 redundant centrifugal RAS pumps. The secondary clarifier effluent is then disinfected with an average of 1.20 mg/L of sodium hypochlorite prior to entering 2 redundant chlorine contact chambers via gravity. The hypochlorite is injected via two redundant diaphragm pumps from two redundant hypochlorite tanks. At the effluent end of the contact chambers the effluent (1.95 MGD average) is dechlorinated via three redundant diaphragm bisulfite pumps with an average of 0.8 mg/L of sodium bisulfite from one of two redundant bisulfite tanks. The effluent is then discharged to the Androscoggin River at Outfall 001.

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

The primary sludge is thickened in one of the two redundant thickeners and drawn off in a batch scenario at 3,500 gallons per batch by two redundant rotary lobe pumps where it is mixed with WAS that has been pumped from the two redundant WAS storage tanks by two redundant centrifugal pumps and thickened in a rotary drum thickener to a thickness of approximately 4%. Approximately 4,700 gallons of thickened secondary (WAS) is added to the 3,500 gallons thickened primary batch by the two redundant rotary lobe pumps and mixed in one of two redundant batch holding tanks. The batch is then pumped into a screw press via one of three redundant progressive cavity pumps where it is dewatered to a thickness of at least 25% solids. The sludge is then transported to the Androscoggin Valley Refuse Landfill.

In the Generator room of the Administration and Control Building is a Detroit diesel powered generator capable of running the entire plant when power fails.

3.1.2 Collection System Description

The Berlin WWTF collection system consists of 95% separate sewer system and 5% combined sewer system.

A separate sanitary sewer conveys domestic, industrial and commercial sewage, but not stormwater. It is part of a “two pipe system” consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to a local water body.

A combined sewer system (CSS) is a wastewater collection system which conveys domestic, industrial and commercial sewage and stormwater through a single-pipe system to a wastewater treatment plant. A combined sewer overflow (CSO) is the discharge from a CSS at a point prior to the wastewater treatment plant. CSO discharges occur when the volume of wastewater exceeds the capacity of the CSS or treatment plant (e.g., during heavy rainfall events or

snowmelt). Section 5.6 below includes further discussion of Berlin’s combined sewer infrastructure.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Berlin PCF discharges through Outfall 001 and combined sewer overflow Outfall 002 to the Androscoggin River within Assessment Unit ID NHIMP400010606-03.

The Androscoggin River is classified as a Class B water by the State of New Hampshire According to New Hampshire’s WQS (RSA 485-A:8), *“Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation, and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 Escherichia coli per 100 milliliters, or greater than 406 Escherichia coli per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 Escherichia coli per 100 milliliters, or 88 Escherichia coli per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class.”*

The Androscoggin River assessment unit ID NHIMP400010606-3 is not listed in the Final New Hampshire Year 2020/2022 Integrated List of Waters (“303(d) List”) as a Category 5 “Waters Requiring a TMDL.”⁵ 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 Integrity	Insufficient Information/No data
Primary Contact Recreation	Not supporting, marginal (<i>E. coli</i>)
Secondary Contact Recreation	Insufficient Information/No data
Fish Consumption	Not supporting (Mercury – TMDL completed); marginal (dioxin)
Potential Drinking Water Supply	Full support
Wildlife	Insufficient Information/No data

⁵ 2020/2022 State of New Hampshire Section 303(d) Surface Water Quality List. NHDES. February 18, 2022 R-WD-20-18

The Androscoggin River assessment unit ID NHIMP400010606-3 is in full support of the potential drinking water supply designated use and is not supporting/marginal for the primary contact recreation and fish consumption. There is insufficient data to assess whether the receiving water is supporting the aquatic life, secondary contact recreation and Wildlife designated uses.

May 2010 *Addendum to the Androscoggin River 2005 Total Maximum Daily Load For Gulf Island Pond Lovemore Falls Impoundment*⁶ which includes wasteload allocations (WLA) for the Berlin PCF's discharges of biochemical oxygen demand and total phosphorus. Also, New Hampshire is covered under the Regional Northeastern Mercury Total Maximum Daily Load (TMDL)⁷.

4.2 Ambient Data

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

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected 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. NH State WQSs require that for non-tidal rivers and streams, permit limits for all aquatic life criteria and human health criteria for non-carcinogens shall be based on the 7Q10 flow (See Env-Wq 1705.2(d)).

The Berlin Pollution Control Facility (PCF) outfall is located just upstream of the USGS Androscoggin River near Gorham, NH Gage (01054000). Therefore, the 7Q10 at a location just downstream of the Berlin PCF outfall was calculated using the gage data, and the Dingman ratio proration method⁹ was not used. The calculated 7Q10 is 1070 cfs.

Note: The flow discharged from the Gorham Acquisition, LLC facility (5.09 cfs), located between the Berlin PCF outfall and the downstream gage, was taken into account in the 7Q10 calculations (subtracted from the gage flow).

Dilution Factor Calculation

The dilution factor for the Berlin PCF outfall was calculated using the following equation:

$$\text{Dilution Factor} = 0.9 \times Q_S / Q_D$$

⁶ [TMDL Link](https://attains.epa.gov/attains-public/api/documents/actions/MEDEP/38665/107080) (https://attains.epa.gov/attains-public/api/documents/actions/MEDEP/38665/107080)

⁷ https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=67750

⁸ EPA Permit Writer's Manual, Section 6.2.4

⁹ Dingman, S.L., and S.C Lawlor, 1995. Estimating Low-Flow Quantiles from Drainage-Basin Characteristics in New Hampshire and Vermont, American Water Resources Association, Water Resources Bulletin, pp 243-256.

where

$Q_S = 7Q_{10}$ flow of the Androscoggin River just downstream of outfall = 1,150 cfs

$Q_D =$ design flow of Berlin PCF = 3.0 mgd = 4.6 cfs

0.9 = factor to reserve 10% of the receiving water assimilative capacity

$$\text{Dilution Factor} = 0.9 \times 1,150 / 4.6 = \mathbf{225}$$

EPA used this dilution factor (DF) in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

5.0 Proposed Effluent Limitations and Conditions

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

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from September 2018 to August 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 2015 Permit is 3 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 2.22 MGD. There have been no exceedances of the flow limit during the review period.

The Draft Permit continues the 3 MGD flow limit from the 2015 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)

5.1.2.1 BOD₅ Concentration Limits

The average monthly and average weekly BOD₅ concentration limits in the 2015 Permit were based on the secondary treatment standards in 40 CFR § 133.102 and included as an average monthly limit of 30 mg/L, and an average weekly limit of 45 mg/L. The daily maximum limit of

50 mg/L was included as a state certification requirement and is carried forward to the Draft Permit based on anti-backsliding regulations discussed in Section 2.6 above.

The DMR data during the review period shows that there have been no violations of the BOD₅ concentration limits.

The Draft Permit proposes the same BOD₅ concentration limits as in the 2015 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance for facilities not using lagoons or sand filters for secondary treatment.

5.1.2.2 BOD₅ Mass Limits

The mass-based BOD₅ limits in the 2015 Permit are based on the concentration limits noted above and were calculated with a design flow of 2.64 MGD, which was the design flow of the facility prior to an expansion to 3 MGD.¹⁰ These are a monthly average of 661 lb/day, a weekly average of 991 lb/day, and a daily maximum of 1,102 lb/day.

The DMR data from the review period shows that was one exceedance of the BOD₅ mass limits.

Calculations of maximum allowable loads for average monthly and average weekly BOD₅ are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day

C_d = Maximum allowable effluent concentration for reporting period in mg/L
(reporting periods are average monthly and average weekly)

Q_d = Annual average design flow of Facility prior to the upgrade.

8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Summer Limits:

Average Monthly: 30 mg/L * 2.64 MGD * 8.34 = 661 lb/day

Average Weekly: 45 mg/L * 2.64 MGD * 8.34 = 991 lb/day

Maximum Daily: 50 mg/L * 2.64 MGD * 8.34 = 1,102 lb/day

EPA notes that the monthly average limit in the Draft Permit is 660 lb/day (rather than 661 lb/day) to be consistent with the BOD₅ allocation set forth in the May 2010 *Addendum to the Androscoggin River 2005 Total Maximum Daily Load For Gulf Island Pond Lovemore Falls Impoundment*, discussed in more detail in the Total Phosphorus section below.

¹⁰ The Permittee requested an increase in its design flow from 2.64 MGD to 3.0 MGD during the last permit issuance. NHDES's antidegradation review included a requirement to base the BOD₅ mass limits on the previous design flow of 2.64 MGD.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The average monthly and average weekly TSS concentration limits in the 2015 Permit were based on the secondary treatment standards in 40 CFR § 133.102 and included as an average monthly limit of 30 mg/L, and an average weekly limit of 45 mg/L. The daily maximum limit of 50 mg/L was included as a state certification requirement and is carried forward to the Draft Permit based on anti-backsliding regulations discussed in Section 2.6 above.

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

The Draft Permit proposes the same TSS concentration limits as in the 2015 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains twice per week, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance for facilities not using lagoons or sand filters for secondary treatment.

5.1.3.2 TSS Mass Limits

The mass-based TSS limits in the 2015 Permit are based on the concentration limits noted above and were calculated with a design flow of 2.64 MGD, which was the design flow of the facility prior to an expansion to 3 MGD¹¹. These are a monthly average of 661 lb/day, a weekly average of 991 lb/day, and a daily maximum of 1,102 lb/day.

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

Calculations of maximum allowable loads for average monthly and average weekly BOD5 are based on the following equation:

$$L = C_d * Q_d * 8.34$$

Where:

L = Maximum allowable load in lb/day

C_d = Maximum allowable effluent concentration for reporting period in mg/L
(reporting periods are average monthly and average weekly)

Q_d = Annual average design flow of Facility prior to the upgrade.

8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

¹¹ The Permittee requested an increase in its design flow from 2.64 MGD to 3.0 MGD during the last permit issuance. NHDES's antidegradation review included a requirement to base the TSS mass limits on the previous design flow of 2.64 MGD.

Summer Limits:

Average Monthly:	$30 \text{ mg/L} * 2.64 \text{ MGD} * 8.34 = 661 \text{ lb/day}$
Average Weekly:	$45 \text{ mg/L} * 2.64 \text{ MGD} * 8.34 = 991 \text{ lb/day}$
Maximum Daily:	$50 \text{ mg/L} * 2.64 \text{ MGD} * 8.34 = 1,102 \text{ lb/day}$

5.1.4 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 2015 Permit requires that the 30-day average percent removal for BOD₅ and TSS be not less than 85%. The DMR data during the review period shows that the median BOD₅ and TSS removal percentages are 92.9% and 97.4%, respectively. There were two violations of the 85% removal requirement for BOD₅ during the review period, and no violations of the 85% removal requirement for TSS during that period.

The requirement to achieve 85% BOD₅ and TSS removal has been carried forward into the Draft Permit.

5.1.5 pH

Consistent with the requirements of New Hampshire's WQS at RSA 485-A:8 II, "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." The monitoring frequency is once per day. The DMR data during the review period show that there have been two exceedances of the minimum pH limitation. The pH requirements in the 2015 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.6 Bacteria

The 2015 Permit includes effluent limits for bacteria using *Escherichia coli* (*E. coli*) bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E require a monthly geometric mean of 126 *E. coli* /100 ml and a maximum daily limit of 406 *E. coli*/100 ml.

The Draft Permit proposes maintaining the effluent limits for bacteria in the 2015 Permit. EPA has revised the units to reflect those in the NH WQS. The *E. coli* limits are a monthly geometric mean of 126 *E. coli*/100 ml and a maximum daily limit of 406 *E. coli*/100 ml. The sampling frequency for *E. coli* is three per week. These limits and sampling frequency are the same as in the 2015 Permit.

5.1.7 Total Residual Chlorine

The Permittee uses chlorine disinfection. The 2015 Permit includes effluent limitations for total residual chlorine (TRC) of 1.0 mg/L (average monthly and maximum daily). The DMR data during the review period show that there have been no exceedances of the TRC limitations.

The TRC permit limits are based on the instream chlorine criteria defined in the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1. These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor, as follows:

Chronic criteria * dilution factor = Chronic limit
11 µg/L * 225 = 2,475 µg/L (average monthly)

Acute criteria * dilution factor = Acute limit
19 µg/L * 225 = 4,275 µg/L (maximum daily)

To reduce the potential for the formation of chlorination byproducts during the wastewater disinfection process, EPA Region 1 has historically established a maximum daily total chlorine residual concentration of 1.0 mg/L whenever the average monthly and/or the maximum daily limit(s) allowed under NH Standards at Env-Wq 1703.21 and Table 1703-1, after factoring in available dilution, would be less stringent than 1.0 mg/L. This approach is consistent with the provisions at Section 101(a)(3) of the Act, and New Hampshire standards at Env-Ws 1703.21(a) which prohibit the discharge of toxic pollutants in toxic amounts. Therefore, the Draft Permit includes average monthly and maximum daily TRC limits of 1.0 mg/L. Additionally, maintaining the TRC limits that are in the 2015 Permit is consistent with the anti-backsliding requirements discussed in Section 2.6 above.

5.1.8 Ammonia

The 2015 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing.

Ambient data, taken upstream of the Berlin outfall in the Androscoggin River, is presented in Appendix A and shows the median concentration for the warm weather period (April 1 through October 31) is 0 mg/L and for the cold weather period (November 1 through March 31) is 0 mg/L.

The freshwater ammonia criteria in the NH WQS (Env-Wq 1703.25 & 1703.26) are dependent on pH and temperature and the acute criterion is also dependent on whether Salmonids are present in the receiving water.

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

To determine the applicable ammonia criteria, EPA assumes a warm weather (May through October) temperature of 25° C and a cold weather (November through April) temperature of 5°

C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 6.7 S.U. Additionally, the Androscoggin River in the vicinity of the Berlin PCF discharge is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving waters.

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 reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose ammonia limits.

Effluent and ambient monitoring for ammonia will continue to be required in the quarterly WET tests.

5.1.9 Nutrients

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

5.1.9.1 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities.

The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;¹² 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation, for instance, by fouling engines and propellers, making waters unappealing to swimmers, and interfering with fishing lures and equipment; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; and 6) producing toxic cyanobacteria during certain algal blooms. Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that

¹² “Algae” includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded.

results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (*i.e.*, anthropogenic) sources of nutrients in surface waters. See generally, *Nutrient Criteria Technical Guidance Manual – Rivers and Streams*, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

The New Hampshire Surface Water Quality Regulations contain a narrative criterion that limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) states that, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring." Env-Wq 1703.14(c), further states that, "Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards." Cultural eutrophication is defined in Env-Wq 1702.15 as, "... the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen." Cultural eutrophication also results in violations of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors and surface scum. The NH WQS at Env-Wq 1703.07(b)(2) require that dissolved oxygen have an instantaneous minimum concentration of at least 5 mg/L in Class B waters. Further, NH WQS at Env-Wq 1703.12(b) states that Class B waters "shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring." Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit, and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

When translating narrative phosphorus criteria into numeric values (and establishing WQBELs, if necessary), EPA looks to a wide range of materials, including nationally recommended criteria and other relevant materials, such as EPA nutrient technical guidance and information published under Section 304(a) of the CWA, peer-reviewed scientific literature and site-specific surveys and data to determine instream targets that are protective of water quality. See 40 CFR § 122.44(d)(1)(vi)(A), (B).

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides

a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

EPA follows an effects-based approach. EPA’s 1986 *Quality Criteria for Water* (the “Gold Book”) recommends maximum threshold concentrations that are designed to prevent or control adverse nutrient-related impacts from occurring. Specifically, the Gold Book recommends in-stream phosphorus concentrations of no greater than 0.1 mg/L for any stream not discharging directly to lakes or impoundments 0.05 mg/L in any stream entering a lake or reservoir, and 0.025 mg/L within a lake or reservoir. In this case, EPA is applying a target concentration of 0.025 mg/L because the receiving water is an impoundment.

As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. In this case, EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.

Sampling data from 1990 and 1998¹³, summarized in Table 2, reported six summer in-stream phosphorus concentrations collected at Station 08-AND located 6,350 feet upstream of the Berlin PCF.

Table 2 – Instream Total Phosphorus Concentrations (µg/L)

	08-AND 6350’ upstream of WWTF
5/31/1990	22
6/22/1990	18
7/25/1990	17
6/29/1998	15
7/29/1998	15
8/16/1998	12

¹³ <http://nhdesonestop.sr.unh.edu/html5viewer/>

In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for phosphorus, EPA used the mass balance equation presented in Appendix B to project the phosphorus 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.

Effluent reporting during the review period indicates that the maximum daily phosphorus loading ranged from 1.95 lb/day to 18.47 lb/day, with a median of 8.74 lb/day. The corresponding phosphorus concentration ranged from 0.2 mg/L to 1.56 mg/L, with a median of 0.52 mg/L.

Based on the phosphorus criterion described above, the ambient data presented above, the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation, the determination of whether there is reasonable potential to cause or contribute to an excursion of WQS and, if necessary, the limits proposed in the Draft Permit WQS. As shown, it was determined that the downstream concentration is 21 µg/L which does not exceed the instream target of 22.5 µg/L.¹⁴ Therefore, there is no reasonable potential to cause or contribute to an excursion of WQS in the immediate receiving water.

However, the BPCF is subject to a wasteload allocation set by the Maine DEP in the May 2010 *Addendum to the Androscoggin River 2005 Total Maximum Daily Load For Gulf Island Pond Lovemore Falls Impoundment*. The TMDL establishes a wasteload allocation for the Berlin PCF of 19.8 lb/day of total phosphorus from June through September of each year.

Therefore, in accordance with the TMDL, the Draft Permit includes a monthly average total phosphorus limit of 19.8 lb/day from June through September of each year, with a monitoring frequency of twice per month. Although the facility has been consistently below this level during the review period, EPA notes that two data points from the two months more recent than the review period indicate an increase in the total phosphorus discharged from the facility in September and October 2023 (45.8 lb/day and 25.2 lb/day, respectively) which are above the proposed limit. The Permittee indicated this increase was due to an increase in septage during these two recent months and that this increase is expected to continue in the future. Based on this information, EPA has determined that a 12-month compliance schedule is appropriate to allow time for the Permittee to come into consistent compliance with the proposed permit limit. The Permittee may choose to either optimize phosphorus treatment at the facility and/or reduce the amount of septage received at the facility to ensure consistent compliance with the limit once it becomes effective. Given that compliance is possible through source reduction, EPA considers that a compliance schedule longer than one year is not appropriate.

Additionally, the Draft Permit also includes an ambient monitoring requirement to ensure that current ambient phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle. Note that this ambient data will be used in the next permit reissuance, along with any other relevant information available at that time, to reevaluate whether a more stringent limit may be necessary to protect WQS. EPA notes that this ambient monitoring is particularly necessary in this case in order to better characterize the receiving water given that the best available data used above was from over 25 years ago.

¹⁴ Based on the Gold Book threshold of 0.025 mg/L times 0.9 (factor to reserve 10% assimilative capacity)

5.1.10 Metals

5.1.10.1 Applicable Metals Criteria

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007])). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically-available portion of metals in the receiving water. Regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

The criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations in NH Env Wq-1703. The estimated hardness of the Androscoggin River downstream of the treatment plant is calculated using the critical low flow (7Q10), the design flow of the treatment plant, and the median hardness for both the receiving water upstream of the discharge and the treatment plant effluent. Effluent and receiving water data are presented in Appendix A. Using the mass balance equation discussed in Appendix B, the resulting downstream hardness is 20.0 mg/L and the corresponding criteria are also presented in Appendix B. *See Env-Wq 1703.22(f).*

5.1.10.2 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, 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 2015 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 cadmium, lead, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals. However, EPA determined that there is reasonable potential to cause or contribute to an excursion of WQS for aluminum and copper, so the Draft Permit proposed a new aluminum limit of 87 $\mu\text{g/L}$ (average monthly) and new copper limits of 2.4 $\mu\text{g/L}$ (average monthly) and 3.1 $\mu\text{g/L}$ (maximum daily).

Given that the facility is not expected to be in compliance with these new limits upon the effective date of the permit, EPA has established a compliance schedule applicable to both the aluminum and copper limits. New Hampshire regulations for schedules of compliance in NPDES Permits can be found at Env-Wq 1701.03. Federal regulations regarding compliance schedules indicate that the permitting authority must make a reasonable determination that a schedule of compliance is “appropriate” and that the schedule proposed requires compliance “as soon as possible.” See 40 CFR § 122.47(a), (a)(1). In this case, EPA has determined that a 2-year compliance schedule is “appropriate” and is expected to result in permit compliance “as soon as possible” based on the following milestones. During the first year, the Permittee shall evaluate options for reducing aluminum and copper in the discharge. This evaluation must include, at a minimum, an evaluation of methods for optimization of the treatment process and potential source reduction within the collection system. The Permittee shall submit a report to EPA and NHDES documenting the findings of this analysis within one year of the effective date of the permit. During the second year, the Permittee shall implement the findings of its evaluation in order to comply with the effluent limits. The effluent limits shall take effect 2 years from the effective date of the permit. During these first two years, the Permittee shall be required to monitor (twice per month) and report the amount of aluminum and copper in the effluent.

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

5.1.11 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). New Hampshire statute and regulations state that, “all surface waters shall be free from toxic substances or chemical constituents in concentrations or combination that injure or are inimical to plants, animals, humans, or aquatic life....” (N.H. RSA 485-A:8, VI and the N.H. Code of Administrative Rules, PART Env-Wq 1703.21(a)(1)). 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, 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 greater than 100 require acute toxicity testing twice per year for two species with an LC₅₀ limit of greater than or equal to 50%.

The acute WET limit in the 2015 Permit is LC₅₀ greater than or equal to 50%, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has one violation of the fathead minnow test (43.6% in the 3rd quarter of 2019). See Appendix A.

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 209, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the effluent limits from the 2015 Permit including the test organism and the testing frequency. 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) of the Draft Permit.

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

5.1.12 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.¹⁵ 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.

¹⁵ 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

On September 30, 2019, NH DES adopted Maximum Contaminant Levels (MCLs) and Maximum Contaminant Level Goals (MCLGs) for drinking water at Env-DW 705.06 and Ambient Groundwater Quality Standards (AGQs) at Env-Or 603 for the following PFAS:

	<u>MCLs/AGQs</u>	<u>MCLGs</u>
Perfluorohexanesulfonic acid (PFHxS)	18 ng/L	0
Perfluorononanoic acid (PFNA)	11 ng/L	0
Perfluorooctanesulfonic acid (PFOS)	15 ng/L	0
Perfluorooctanoic acid (PFOA)	12 ng/L	0

The September 2019 PFAS regulations were challenged in state court and are currently enjoined pending resolution of the litigation. On July 23, 2020, the New Hampshire legislature enacted legislation establishing MCLs and AGQs for these PFAS in State statute at the identical levels as the challenged regulations. The statutory MCLs and AGQs became effective on July 23, 2020.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and consistent with recent EPA guidance,¹⁶ 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

¹⁶ Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 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

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. Reporting of all 40 PFAS analytes is necessary to address the emerging understanding and remaining uncertainties regarding sources and types of analytes of PFAS in wastewater and their impacts. While NHDES has currently adopted MCLs for only 4 of these analytes as described above, it is possible that MCLs, water quality criteria and/or effluent limitation guidelines could be adopted for many of the other 36 analytes measured by Method 1633 during the life of the permit. Therefore, EPA considers it prudent to require reporting for all 40 analytes that are measured using Method 1633 to ensure EPA has sufficient data to address each of these PFAS analytes in the future. This level of monitoring is recommended in EPA’s *October 2021 PFAS Strategic Roadmap*¹⁷ and in an EPA memo dated April 28, 2022, called *Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority*¹⁸.

All PFAS results must be reported on DMRs (see 40 CFR § 122.41(l)(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.

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 Pretreatment Program

The Permittee is not required to administer a pretreatment program pursuant to 40 CFR §403.8. However, the draft permit contains conditions that are necessary to allow EPA and NHDES-WD to ensure that pollutants from industrial users will not pass through the facility and cause water

¹⁷ https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

¹⁸ https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

quality standards violations and/or sludge use and disposal difficulties or cause interference with the operation of the treatment facility. The Permittee is required to notify EPA and NHDES-WD whenever a process wastewater discharge to the facility from a primary industrial category (see 40 CFR §122 Appendix A for list) 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 issuance of the permit. The permit also contains the requirements to: 1) report to EPA and NHDES-WD the name(s) of all Industrial Users subject to Categorical Pretreatment Standards (see 40 CFR §403 Appendix C for list) who commence discharge to the POTW after the effective date of the finally issued permit, and 2) submit copies of Baseline Monitoring Reports and other pretreatment reports submitted by industrial users to EPA and NHDES-WD.

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

5.5.1 Adaptation Planning for the Wastewater Treatment System (WWTS) and/or Sewer System

The Draft Permit, in Part I.C.1. requires the Permittee to develop an Adaptation Plan to address major storm and flood events as part of their operation and maintenance planning for the part of the WWTS and/or sewer systems that they each own and operate. These requirements are new. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the WWTS and/or sewer system and has included a schedule in the Draft Permit for completing these requirements.

See Appendix C for a further rationale regarding this Adaptation Plan.

5.5.2 Operation and Maintenance of the Sewer System

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

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Wastewater Treatment Facility and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Some of the requirements in the Draft Permit are not included in the 2015 Permit. EPA has determined that this additional requirement is necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the Draft Permit.

5.6 Combined Sewer Overflows

Description

The City of Berlin owns and operates a wastewater collection system comprised of 95 percent sanitary sewers, which carry domestic, commercial, and industrial wastewater; and 5 percent combined sewers, which carry domestic, industrial, and commercial wastewater plus stormwater runoff. According to the City of Berlin’s July 2011 Sewer Collection System Operations and Maintenance Plans, the collection system covers a service area of 61.7 square miles, serves approximately 10,000 people, has 3,460 service connections, consists of seven pumping stations and over 900 sewer manholes. There is one (1) combined sewer overflow (CSO) outfall in the Berlin wastewater collection system and interceptor network (Outfall 002 at the Watson Street Pump Station).

During periods of heavy rainfall or snowmelt, the combined stormwater and sanitary wastewater volume in the sewer line exceeds the pumping capacity at the pump station resulting in discharges from the CSO Outfall 002 to the Androscoggin River.

The 2015 permit authorizes discharges from this CSO Outfall 002 subject to technology-based requirements (the nine minimum controls described below and to requirements that the discharges may not cause violations of water quality standards.

A summary of CSO discharge data from 2016-2023 is presented below.

Table 3 – Berlin CSO Outfall 002 Annual Discharge Data: 2019-2023

Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a	Discharge (MG) ^a
2016	2017	2018	2019	2020	2021	2022	2023 ^c
0	10.274	0.6879	0	0.002	0	6.37	0.124

^a Discharge volume- Million Gallons (MG)

^b System experienced flooding/failure due to an extreme rain even

^c 2023 data is through June 2023.

Projects related to CSO abatement have focused on the reduction of I/I into the collection system. Based on the City’s 2022 Annual CMOM Report, inflow and infiltration into the City’s collection system continues to be a primary focus for identification and remediation. In 2022, Wright Pierce engineers completed a multi-year project known as the Sanitary/Infiltration Reduction Building Demolition Project. This project included demolition of 12 buildings with known illicit connections to the sewer collection system and were identified as being substantial contributors of I/I.

Further, the City successfully secured funding in 2022 for a CCTV trailer system. The City is in the process of developing a plan to CCTV inspect the entire collection system and record condition assessments. The City will use these findings to guide future capital investments in the collection system.

Additional measures the City has undertaken to reduce the frequency and volume of CSO discharges include the installation of a new tide flex-style valve in the CSO discharge pipe to prevent high river levels flooding back into the Pump Station (and into the collection system) as well as modifications to the SCADA system programming.

Regulatory Framework

CSOs are point sources subject to NPDES permit requirements for both water-quality based and technology-based requirements but are not subject to the secondary treatment regulations applicable to publicly owned treatment works in accordance with 40 CFR §133.103(a). Section 301(b)(1)(C) of the Clean Water Act of 1977 mandated compliance with water quality standards by July 1, 1977. Technology-based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable

(BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA). The framework for compliance with Clean Water Act requirements for CSOs is set forth in EPA's National CSO Control Policy, 59 Fed. Reg. 18688 (1994). It sets the following objectives:

- 1) To ensure that if the CSO discharges occur, they are only as a result of wet weather;
- 2) To bring all wet weather CSO discharge points into compliance with the technology-based requirements of the CWA and applicable federal and state water quality standards;

and

- 3) To minimize water quality, aquatic biota, and human health impacts from wet weather flows.

Among the elements established to achieve these objectives, the CSO Policy set forth the minimum BCT/BAT controls (*i.e.*, technology-based limits) that represent the BPJ of the Agency on a consistent, national basis. These are the Nine Minimum Controls ("NMCs") defined in the CSO Policy and set forth in Part I.B. of the Draft Permit: 1) proper operation and regular maintenance programs for the sewer system and the combined sewer overflows; 2) maximum use of the collection system for storage; 3) review and modification of the pretreatment programs to assure CSO impacts are minimized; 4) maximization of flow to the POTW for treatment; 5) prohibition of dry weather overflows; 6) control of solid and floatable materials in CSOs; 7) pollution prevention programs which focus on contaminant reduction activities; 8) public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts; and 9) monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

To reflect advances in technologies, the Draft Permit includes more specific public notification implementation level requirements to ensure that the public receives adequate notification of CSO occurrences and CSO impacts. The Draft Permit requires the Permittee to develop a public notification plan to fulfill NMC #8. As part of this plan, notification shall be provided electronically to any interested party, and a posting made on the permittee's website, of a probable CSO activation within two (2) hours of the initiation of any CSO discharge(s). Subsequently, within 24 hours of the termination of any CSO discharges(s), the Permittee shall provide follow-up information on their website and in a follow-up electronic communication to any interested party. EPA invites comment on this new requirement during the public comment period with a goal of a workable public notification plan.

The CSO Policy recommends that each combined sewer system develop and implement a long-term CSO control plan ("LTCP") that will ultimately result in compliance with the requirements of the CWA. In June 1998, the City of Berlin submitted a report (dated June 8, 1998) documenting implementation of the Nine Minimum Controls for their one CSO discharge. Subsequently, EPA issued an Administrative Compliance Order by Consent (Docket No. 11-004) in 2011 which required the City to submit a Scope of Work and Schedule for preparing a Long-Term CSO Control Plan ("LTCP SOW"), the submittal of a Collection System O&M Plan,

and the submittal of quarterly progress reports. On September 30, 2014, Berlin submitted to EPA and NHDES a CSO LTCP.

Permit Requirements

In accordance with the National CSO Policy, the Draft Permit contains the following conditions for the CSO discharges:

(i) Dry weather discharges from CSO outfalls are prohibited. Dry weather discharges must be immediately reported to EPA.

(ii) During wet weather, the discharges must not cause any exceedance of water quality standards.

(iii) The Permittee shall meet the technology-based Nine Minimum Controls described above and shall comply with the implementation levels as set forth in Part I.B. of the Draft Permit.

(iv) The Permittee shall review its entire NMC program and revise it as necessary. An annual report shall be provided by January 15th of each year which describes any revisions made to the NMC program and shall also include monitoring results from CSO discharges, and the status of CSO abatement projects.

5.7 Standard Conditions

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

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

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

The Federal action being considered in this case is EPA's proposed NPDES permit for the Berlin Pollution Control Facility. The Draft Permit is intended to replace the 2016 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, when required under Section 7(a)(2) of the ESA.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this section of the Androscoggin River (Assessment Unit ID NHIMP400010606-03).

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in New Hampshire waters. Various life stages of protected fish, sea turtles and whales have been documented in New Hampshire's coastal and inland waters, either seasonally or year-round. In general, adult and subadult life stages of Atlantic sturgeon (*Acipenser oxyrinchus*) and adult shortnose sturgeon (*Acipenser brevirostrum*) are present in coastal waters. These sturgeon life stages are also found in some river systems in New Hampshire, along with early life stages of protected sturgeon and juvenile shortnose sturgeon.

Protected marine species, including adult and juvenile life stages of leatherback sea turtles (*Dermochelys coriacea*), loggerhead sea turtles (*Caretta caretta*), Kemp's ridley sea turtles (*Lepidochelys kempii*) and green sea turtles (*Chelonia mydas*) are found in coastal waters and bays. Adult and juvenile life stages of North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus*) have also been documented in coastal waters and bays. Those coastal areas have been designated as critical habitat for North Atlantic right whale feeding.

In this case, the Facility's outfall and action area do not overlap with coastal waters where protected marine species are found. The Facility discharges directly into the Androscoggin River, which drains to the Kennebec River and subsequently the Gulf of Maine. The facility is located approximately 50 miles upstream from the boundary of the range of Atlantic Salmon in the Androscoggin River, which ends at Rumford Falls in Rumford, Maine.

On the basis of the evaluation, EPA's preliminary determination is that this action is not likely to adversely affect, the life stages of the protected species which are expected to inhabit the Androscoggin River in the vicinity of the action area of the discharge. Therefore, EPA has judged that a formal consultation pursuant to section 7 of the ESA is not required. EPA is seeking concurrence from NOAA Fisheries regarding this determination through the information in the Draft Permit and this Fact Sheet.

For protected species under the jurisdiction of the USFWS, one endangered species, the northern long-eared bat (*Myotis septentrionalis*), and one threatened species, the Canada lynx (*Lynx canadensis*) were identified as potentially occurring in the action area of the Facility's discharges.

According to the USFWS, the endangered northern long-eared bat is found “across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species’ range includes 37 states. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bat’s entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as seen in the Northeast.”

The Canada lynx (*Lynx canadensis*) is described by the USFWS as “a medium-sized cat with long legs, large, well-furred paws, long tufts on the ears, and a short, black-tipped tail... The distribution of lynx in North America is closely associated with the distribution of North American boreal forest. The range of lynx populations extends south from the classic boreal forest zone into the subalpine forest of the western United States, and the boreal/hardwood forest ecotone in the eastern United States. Forests with boreal features extend south into the contiguous United States along the North Cascade and Rocky Mountain Ranges in the west, the western Great Lakes Region, and northern Maine. Within these general forest types, lynx are most likely to persist in areas that receive deep snow and have high-density populations of snowshoe hares, the principal prey of lynx.”

Neither of these species is aquatic. However, because the Facility’s projected action area in Berlin, New Hampshire overlaps with their ranges, EPA submitted an evaluation on potential effects of the project to the Information for Planning and Consultation (IPaC) system provided by the USFWS. The USFWS system confirmed by letter that, based on the specific project information submitted, the project would have “no effect” on the northern long-eared bat¹⁹ and would not be likely to adversely affect the Canada lynx²⁰. This concluded EPA’s consultation responsibilities for the Berlin PCF NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat and Canada lynx.

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

EPA finds that adoption of the proposed permit is not likely to adversely affect any threatened or endangered species or its critical habitat and informal consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is required. Initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may

¹⁹ USFWS Project Code: 2024-0000421

²⁰ USFWS Project Code: 2024-0003424

be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

6.2 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq.*, 1998), EPA is required to consult with the 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.

EPA has determined that the Androscoggin River is covered by the EFH designation for riverine systems as determined by the NOAA EFH Mapper.²¹ Therefore, consultation with NMFS under the Magnuson-Stevens Fishery Conservation and Management Act is required.

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;
- The Facility withdraws no water from the Androscoggin River, so the EFH will not be reduced in quality and/or quantity through impingement or entrainment of EFH designated species or their prey;
- Acute toxicity tests will be conducted twice yearly to ensure that the discharge does not exhibit toxicity;
- Total suspended solids, biochemical oxygen demand, pH, *Escherichia coli*, total phosphorus, total aluminum, total copper, and acute toxicity are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life;
- The Draft Permit prohibits violations of the state water quality standards; and
- The Draft Permit requirements minimize any reduction in quality and/or quantity of EFH,

²¹ <https://www.habitat.noaa.gov/application/efhmapper/atlanticSalmonEFH.pdf>

either directly or indirectly.

- The Draft Permit requires monitoring for four Per- and Polyfluoroalkyl Substances (PFAS) in the influent, effluent, and sludge within 6 months of EPA's approval of wastewater and sludge analytical methods for these compounds.

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, Meridith Finegan at the following email address: Finegan.Meridith@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) 918-1533.

8.0 Administrative Record

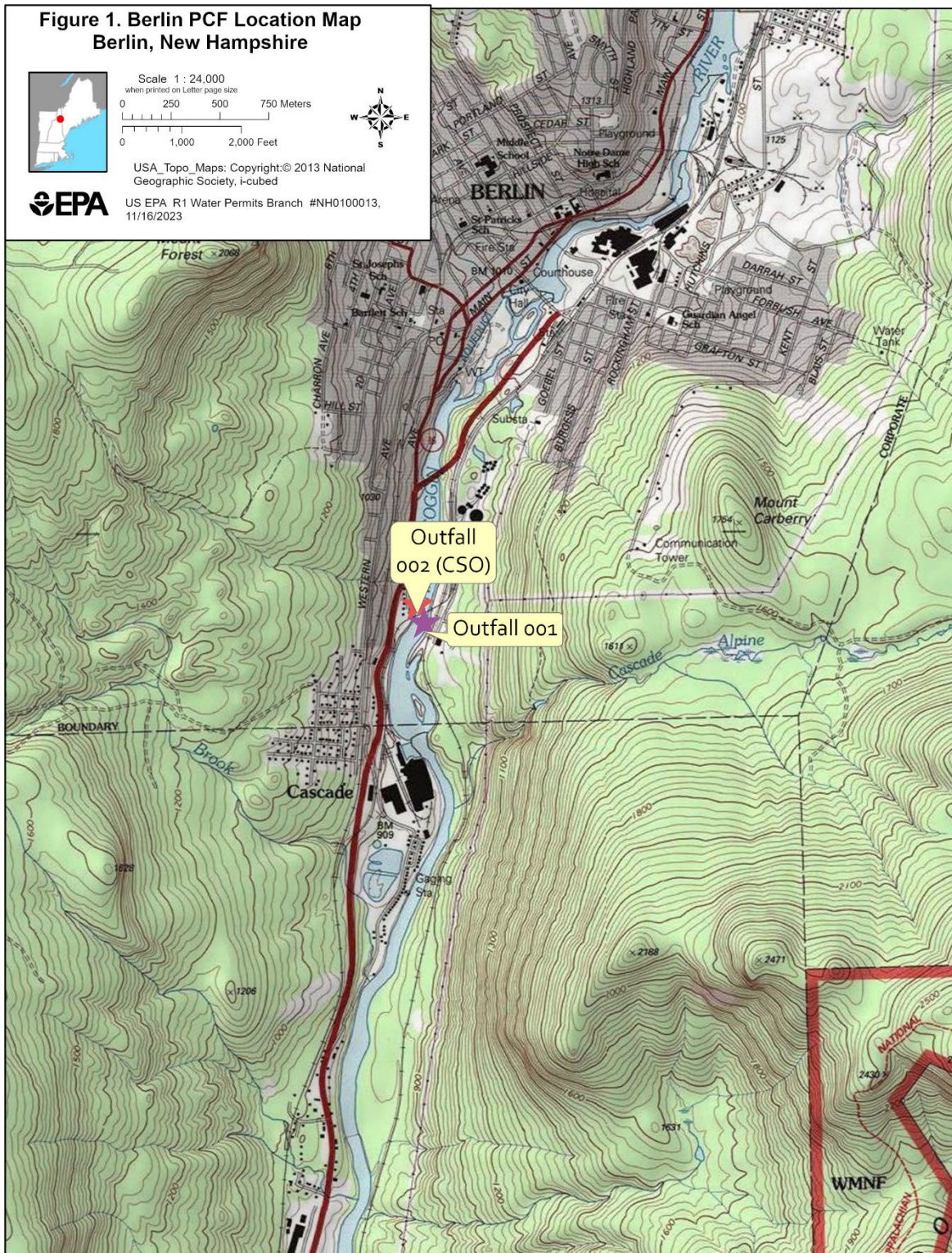
The administrative record on which this Draft Permit is based may be accessed by contacting Meridith Finegan at 617-918-1533 or via email to Finegan.Meridith@epa.gov.

January 2024

Date

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

Figure 1: Location of the Berlin WWTF



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	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d
Effluent Limit	3	Report	Report	661	30	991	45	1102
Minimum	1.63	1.149	1.32	55.51	4.23	64	4.6	70.8
Maximum	2.21	4.56	8.65	458.9	19.08	779.3	28.3	1143.3
Median	1.955	1.7965	3.075	131.745	9.06	168.9	12.2	211.25
No. of Violations	0	N/A	N/A	0	0	0	0	1
9/30/2018	1.95	1.56	1.87	189.96	14	263.1	20	234.1
10/31/2018	1.94	1.703	2.82	220.85	14.19	230.21	17.635	389.9
11/30/2018	1.965	2.399	5.95	163.45	9.01	167.9	10.6	200.3
12/31/2018	2.02	2.16	4.8	166.9	10.6	377	23.6	191
1/31/2019	1.98	1.622	3.8	113.39	8.95	169.2	11	220.5
2/28/2019	1.96	1.587	2.3	123.76	9.43	152.7	11.4	169.7
3/31/2019	1.95	2.05	6.94	139.5	10.3	174.2	12.2	182.6
4/30/2019	2.063	4.56	8.65	458.9	11.7	779.3	15.5	1143.3
5/31/2019	2.12	2.99	4.58	247.87	9.6	419.6	13.8	448.06
6/30/2019	2.16	1.9	2.4	276.5	16.93	361.2	19.2	363.5
7/31/2019	2.16	1.52	1.88	131.41	10.37	139.2	12.2	192.1
8/31/2019	2.127	1.33	1.65	213.78	19.08	263.9	23.6	282.7
9/30/2019	2.12	1.5	2.51	145.2	11.08	195.6	13.8	242
10/31/2019	2.124	1.734	2.55	132.08	9.05	176.2	11.8	202.6
11/30/2019	2.069	1.726	2.69	120.06	8.73	142.9	12.1	149.1
12/31/2019	2.05	1.95	3.59	87.4	5	140.9	6	218.6
1/31/2020	2.08	1.914	5.81	101.93	7.47	139.2	10.4	153.1
2/29/2020	2.06	1.431	2.44	55.95	4.77	138.6	10.7	70.8
3/31/2020	2.21	2.74	4.01	107.7	4.6	111.8	5.4	168.2
4/30/2020	2.107	3.27	6.84	145	5.4	164.8	6.2	258.9
5/31/2020	2.04	2.19	3.26	126.23	7.6	210.9	14.9	254.74
6/30/2020	2	1.42	2.48	118.97	9.67	151.3	12.6	189.1
7/31/2020	2.03	1.89	3.58	158.1	8.34	328.9	12.8	468.8
8/31/2020	2.028	1.35	2.01	81.95	6.21	154.3	9.4	183.2
9/30/2020	2	1.18	1.97	101.17	9.34	128.5	12.9	162.8
10/31/2020	2.005	1.823	5.18	99.74	6.55	157.1	10	183
11/30/2020	1.982	1.454	2.52	58.52	4.75	64	5	75.3
12/31/2020	2.02	2.37	7.29	90.2	4.8	168.6	6	231.5

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	MGD	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d
Effluent Limit	3	Report	Report	661	30	991	45	1102
1/31/2021	1.98	1.522	2.23	55.51	4.23	82.2	4.6	80.7
2/28/2021	1.96	1.149	1.32	81.49	8.36	107.5	11.2	109.3
3/31/2021	1.79	1.97	3.4	100.8	6.8	146.8	8.1	160.9
4/30/2021	1.697	2.14	4.43	156.4	9.6	146.8	8.1	284.1
5/31/2021	1.68	1.92	4.66	138.11	9	162.4	12.3	173.62
6/30/2021	1.68	1.38	1.6	184.75	15.49	234.6	18.8	303
7/31/2021	1.66	1.75	2.78	132.24	8.93	225.6	20.3	231.4
8/31/2021	1.686	1.62	2.19	116.47	8.26	176.9	11.8	225.9
9/30/2021	1.71	1.48	1.84	108.56	9.07	129.1	11.1	138.5
10/31/2021	1.688	1.506	4.07	112.07	9.32	163	10.9	176.3
11/30/2021	1.724	1.883	3.36	92.75	6.39	107	7.2	117.3
12/31/2021	1.65	1.53	1.98	103.5	8	145.8	10.6	172.7
1/31/2022	1.63	1.182	1.51	91.07	9.41	133.7	13.9	189.7
2/28/2022	1.67	1.68	4.51	183.8	12.91	348.9	20.5	539.8
3/31/2022	1.7	2.33	3.43	208.4	11.3	349	17	448.9
4/30/2022	1.748	2.72	3.91	127	5.7	166.2	9.2	213.7
5/31/2022	1.73	1.77	2.59	100.22	6.9	168.1	12.7	204.16
6/30/2022	1.74	1.46	1.77	140	12.08	149.8	13.3	181
7/31/2022	1.7	1.26	1.6	166.46	15.12	197.7	18.9	208.8
8/31/2022	1.69	1.48	2.63	143.34	12.03	319.5	28.3	328.3
9/30/2022	1.71	1.73	2.84	226.8	14.96	207	16.7	329.7
10/31/2022	1.744	1.881	5.68	165.35	13.38	295.1	21.9	271.6
11/30/2022	1.73	1.739	2.56	174.14	12.38	283.6	19.8	315.2
12/31/2022	1.81	2.52	8.65	75	4.7	107.9	6.6	133.7
1/31/2023	1.91	2.29	4.15	96.64	5.69	118.9	9.1	160.8
2/28/2023	1.92	1.85	3.63	128.75	10.12	229.6	17.9	276.4
3/31/2023	1.89	1.93	2.89	215.5	13.6	283.9	24	337.4
4/30/2023	1.848	2.26	3.28	88	4.6	297.8	13.2	145.9
5/31/2023	1.9	2.43	7.01	160.95	8	326.9	10.1	359.09
6/30/2023	1.99	2.5	7.91	149.96	7.9	186.7	10.8	230.6
7/31/2023	2.16	3.29	7.89	430.17	12.63	597.5	19.2	740.3
8/31/2023	2.19	1.93	2.53	182.4	11.4	178.2	12.2	279.4

Outfall 001

Parameter	BOD5	BOD5	TSS	TSS	TSS	TSS	TSS	TSS
	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	mg/L	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	50	85		30	991	45	1102	50
Minimum	5.3	76.5	26.6	2	33.4	2.6	39.2	2
Maximum	29.6	96.9	244.53	10.9	389.3	23.4	517.1	32.8
Median	13.95	92.95	61.235	3.625	81.75	5.4	106.2	6.6
No. of Violations	0	2	0	0	0	0	0	0
9/30/2018	16.8	90.3	75.93	5.5	115	8.4	122.6	8.8
10/31/2018	18.1	88.9	75.6	5.36	89.4	7.2	102.7	8
11/30/2018	12.4	91.3	46.99	2.55	50.6	3	61.4	4
12/31/2018	14.4	89.5	49.8	2.8	89.7	5.6	94.6	3.6
1/31/2019	13.6	93.7	33.78	2.72	38.5	3	44.6	3.6
2/28/2019	13	92.6	31.02	2.3	35.5	2.8	44.7	3.6
3/31/2019	12.3	92	43.9	3	86.5	5	109.4	6.4
4/30/2019	20.3	76.5	207.5	5.2	352.8	7	517.1	9.2
5/31/2019	14.3	85.8	71	2.8	104.9	3.4	122.2	4.4
6/30/2019	21.1	85.4	75.6	4.7	81.2	5.4	106.3	7.2
7/31/2019	15.5	91.7	61.42	4.88	77.6	7	135.8	9.2
8/31/2019	24.3	89	83.87	7.45	108.5	9.4	132.6	11.2
9/30/2019	16	96.5	44.43	3.25	64.4	3.8	83.7	4.4
10/31/2019	15.3	93.8	83.24	5.68	110.4	7.2	116.6	8
11/30/2019	12.4	92.9	44.92	3.15	50	3.2	58.5	4
12/31/2019	8	95.4	56.5	3.2	101.7	3.8	109.4	4
1/31/2020	12.1	94	39.82	2.67	73.5	3.4	79.3	3.6
2/29/2020	5.9	96.7	26.6	2.25	33.4	2.8	39.2	3.2
3/31/2020	6.1	93.8	69.1	2.8	90.9	3.2	135.4	4.4
4/30/2020	9.7	92.4	71.4	2.8	112.8	3.8	111.8	4
5/31/2020	19.1	92.9	69.1	3.9	86.4	4.4	124.1	6
6/30/2020	13.2	96	68.9	5.82	109.7	10.6	135.4	13.2
7/31/2020	15.7	92.4	99.27	5.69	150.8	10	179.1	11.2
8/31/2020	10.9	96.1	65.3	5.15	95.4	5.8	120.7	7.2
9/30/2020	16.3	95.8	77.96	7.24	89.6	8.4	118.3	8.4
10/31/2020	11.5	94.8	90.68	5.8	141.1	7.4	165.3	8.4
11/30/2020	5.3	96.6	64.36	5.25	64.2	5.4	74.7	6
12/31/2020	7.2	95.5	75.1	4.2	134.3	5.2	179.8	7.2

Outfall 001

Parameter	BOD5	BOD5	TSS	TSS	TSS	TSS	TSS	TSS
	Daily Max	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	mg/L	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	50	85		30	991	45	1102	50
1/31/2021	5.5	96.9	37.86	2.75	60.2	3.4	60.9	3.6
2/28/2021	11.4	94.9	47.76	4.9	66.7	7	77.8	8.4
3/31/2021	8.7	94.1	67.3	4.6	71.9	6.2	100.2	6.8
4/30/2021	15.1	91.4	45.2	2.8	71.9	6.2	58.8	3.6
5/31/2021	13.3	93.5	52.1	3.5	72.3	5.8	77.4	6.4
6/30/2021	25	91	66.06	5.48	82.3	6.6	108.6	8.4
7/31/2021	13.6	93.8	75.99	5.3	84.1	6.6	106.1	6.8
8/31/2021	14.8	94.4	64.77	4.8	102	8.4	153.7	12.8
9/30/2021	11.8	94	61.05	5.07	74.9	6.4	85.9	7.2
10/31/2021	11.6	94.5	67.91	5.8	79.2	6.8	83.6	7.6
11/30/2021	9.8	95.9	50.26	3.32	61.4	3.8	71.9	4.4
12/31/2021	12.6	95.2	46.4	3.6	56.1	4	76.6	5.6
1/31/2022	19.8	94.7	32.81	3.25	54.6	4.8	56	4.8
2/28/2022	29.3	91.2	74.13	3.65	235.8	8.2	346	9.2
3/31/2022	20.8	88.8	47.3	2.6	70.3	3.2	85.9	3.6
4/30/2022	10.3	93.1	44.8	2	64	2.6	65.2	2
5/31/2022	16	93.9	53.7	3.6	65.4	4.2	110.1	8.8
6/30/2022	17.5	90.7	71.31	5.96	100.7	8.2	115.9	10
7/31/2022	20.5	91.2	118.66	10.9	249	23.4	355.6	32.8
8/31/2022	29.6	91.7	47.72	3.96	79.9	5.8	95.8	6.8
9/30/2022	21.7	89.5	48.68	3.25	57.7	4.8	68.7	5.6
10/31/2022	27.6	91.5	85.21	6.2	141	7.8	174.9	10.4
11/30/2022	23.9	90.9	58.93	3.92	65.1	4.6	128.1	6
12/31/2022	7.4	95.4	56.7	3	121.8	5	171.8	6.8
1/31/2023	11.3	94.6	47.78	2.71	121.8	5	92.6	6
2/28/2023	21.5	90.6	38.35	3.2	63.6	6.2	105.8	10.4
3/31/2023	27.3	87	52	3	64.2	3.4	96.4	4.4
4/30/2023	6.2	94.9	39.7	2.1	77.3	3.4	49.6	2.4
5/31/2023	10.4	93	90.9	3.5	283.5	5.2	333.1	6.4
6/30/2023	12	92.9	52.47	2.75	47.4	3.4	76.4	3.6
7/31/2023	20.9	77.9	244.53	6.55	389.3	9.4	500.1	12
8/31/2023	18.1	91.7	108.63	6.64	156.4	8.6	162.9	8.8

Outfall 001

Parameter	TSS	pH	pH	E. coli	E. coli	TRC	TRC	TP
	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Daily Max
Units	%	SU	SU	#/100mL	#/100mL	mg/L	mg/L	lb/d
Effluent Limit	85	6.5	8	126	406	1	1	Report
Minimum	89.7	6.3	6.79	1	1	0.07	0.21	1.95
Maximum	98.4	7.15	7.8	579400	2419.6	0.42	1	18.47
Median	97.4	6.635	7.245	3.94	31.35	0.244	0.785	8.3
No. of Violations	0	2	0	1	6	0	0	N/A
9/30/2018	97	6.78	7.17	10.34	93.3	0.08	0.29	9.08
10/31/2018	96.5	6.66	7.55	8.4	114.5	0.21	0.91	8.12
11/30/2018	97.8	6.83	7.47	16.97	290.9	0.26	0.59	
12/31/2018	98	6.87	7.45	14.2	52.7	0.24	0.69	
1/31/2019	97.9	7.01	7.5	36.75	1203.3	0.205	0.71	
2/28/2019	98.1	7.06	7.6	18.97	2419.6	0.294	0.92	
3/31/2019	97.5	7.1	7.8	18.8	111.2	0.2	0.95	
4/30/2019	89.7	6.67	7.29	43.1	866	0.151	0.56	5.8
5/31/2019	97	6.63	7.25	5.11	48.1	0.162	0.41	7.1
6/30/2019	97	6.89	7.4	3.14	37.7	0.23	0.81	6
7/31/2019	97.1	6.83	7.15	1.82	31.8	0.18	0.58	4.83
8/31/2019	96.3	6.86	7.75	12.428	1203.3	0.29	1	5.1
9/30/2019	98.2	6.53	7.29	16.35	1732.9	0.15	0.85	9.25
10/31/2019	96.8	6.6	7.34	3.7	21.6	0.23	0.6	18.47
11/30/2019	97.8	6.6	6.86	2.8	6.3	0.288	1	
12/31/2019	97.4	6.54	6.79	2.2	27.5	0.26	0.81	
1/31/2020	97.7	6.51	7.27	2.18	18.5	0.29	0.94	
2/29/2020	98.3	7.03	7.35	1.97	23.1	0.286	0.87	
3/31/2020	96	6.86	7.19	18.8	133.4	0.33	0.81	
4/30/2020	95.7	6.95	7.25	8.49	55.4	0.293	0.97	6.4
5/31/2020	96.9	6.6	7.1	3.19	30.7	0.248	0.96	6.1
6/30/2020	98.1	6.71	7.45	7.53	365.4	0.19	0.91	3.6
7/31/2020	96.4	6.73	7.05	3.71	30.9	0.09	0.53	8.74
8/31/2020	97.6	6.75	7.45	4.3333	14.5	0.17	0.69	11.29
9/30/2020	97	6.88	7.69	15.46	360.9	0.24	0.82	4.46
10/31/2020	96	6.61	7.34	2.3	7.5	0.26	0.99	6.46
11/30/2020	96.5	6.61	7.02	1	1	0.255	0.88	
12/31/2020	96.4	6.46	7.21	2	8.6	0.32	1	

Outfall 001

Parameter	TSS	pH	pH	E. coli	E. coli	TRC	TRC	TP
	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Daily Max
Units	%	SU	SU	#/100mL	#/100mL	mg/L	mg/L	lb/d
Effluent Limit	85	6.5	8	126	406	1	1	Report
1/31/2021	98	6.75	7.2	1.24	6.3	0.404	0.97	
2/28/2021	97.1	6.71	7.67	32.34	151.5	0.139	0.36	
3/31/2021	96.6	7.03	7.65	91.4	2419.6	0.3	0.78	
4/30/2021	97.7	7.15	7.4	4.25	39.7	0.312	0.77	4.5
5/31/2021	97.6	6.88	7.38	3.57	49.5	0.195	0.69	13.6
6/30/2021	97.2	6.85	7.57	7.87	32.7	0.16	0.79	2.3
7/31/2021	96.9	6.52	6.85	9.16	248.1	0.11	0.79	4.15
8/31/2021	97.4	6.51	6.99	7.413	235.9	0.07	0.5	10.45
9/30/2021	97	6.63	7	11.48	16.9	0.11	0.55	9.11
10/31/2021	97	6.53	7.2	11.4	74.9	0.1	0.59	1.95
11/30/2021	97.9	6.55	7.03	4.1	27.5	0.125	0.29	
12/31/2021	98.1	6.55	6.9	6.4	38.8	0.14	0.49	
1/31/2022	98.2	6.67	7.09	1.8	19.7	0.184	0.5	
2/28/2022	97.3	6.55	7.47	5.05	77.6	0.201	0.4	
3/31/2022	98.2	6.53	7.04	1.4	4.1	0.11	0.21	
4/30/2022	97.4	6.3	6.81	1.78	34.5	0.363	0.7	8.9
5/31/2022	97.5	6.55	7.2	1.11	2	0.32	0.76	9.5
6/30/2022	97	6.51	7.23	1.58	3.1	0.35	0.6	11.6
7/31/2022	95.3	6.69	7.15	3.38	48.8	0.24	0.63	11.77
8/31/2022	97.9	6.58	7.17	4.543	29.8	0.29	0.85	5.35
9/30/2022	98.2	6.64	7.16	3.78	12	0.22	0.58	9.56
10/31/2022	97.8	6.66	7.07	1.1	3	0.42	0.81	8.3
11/30/2022	97.8	6.59	7.4	1.05	2	0.257	0.78	
12/31/2022	97.4	6.55	7.2	1.5	10.8	0.33	0.95	
1/31/2023	97.6	6.62	7.24	1.31	5.2	0.337	0.88	
2/28/2023	97.4	7.04	7.52	3	30.7	0.38	0.95	
3/31/2023	97.5	6.95	7.48	2.5	12	0.4	0.88	
4/30/2023	98.4	6.53	7.39	3.58	14.5	0.377	0.64	9.9
5/31/2023	97.5	6.5	7.15	1.54	9.6	0.25	0.97	17.2
6/30/2023	97.9	6.62	7.45	579400	10.9	0.34	0.93	5.9
7/31/2023	92.8	6.55	6.93	2.67	8.4	0.24	0.82	16.19
8/31/2023	96.8	6.5	7.05	6.994	80.9	0.31	0.63	16.54

Outfall 001

Parameter	TP
	Daily Max
Units	mg/L
Effluent Limit	Report
Minimum	0.19
Maximum	1.56
Median	0.51
No. of Violations	N/A
9/30/2018	0.66
10/31/2018	0.51
11/30/2018	
12/31/2018	
1/31/2019	
2/28/2019	
3/31/2019	
4/30/2019	0.19
5/31/2019	0.32
6/30/2019	0.3
7/31/2019	0.51
8/31/2019	0.61
9/30/2019	0.66
10/31/2019	1.56
11/30/2019	
12/31/2019	
1/31/2020	
2/29/2020	
3/31/2020	
4/30/2020	0.23
5/31/2020	0.3
6/30/2020	0.316
7/31/2020	0.5
8/31/2020	0.71
9/30/2020	0.4
10/31/2020	0.33
11/30/2020	
12/31/2020	

Outfall 001

Parameter	TP
	Daily Max
Units	mg/L
Effluent Limit	Report
1/31/2021	
2/28/2021	
3/31/2021	
4/30/2021	0.33
5/31/2021	0.63
6/30/2021	0.2
7/31/2021	0.31
8/31/2021	0.71
9/30/2021	
10/31/2021	0.22
11/30/2021	
12/31/2021	
1/31/2022	
2/28/2022	
3/31/2022	
4/30/2022	0.57
5/31/2022	0.63
6/30/2022	0.8
7/31/2022	0.98
8/31/2022	0.53
9/30/2022	0.73
10/31/2022	0.79
11/30/2022	
12/31/2022	
1/31/2023	
2/28/2023	
3/31/2023	
4/30/2023	0.5
5/31/2023	0.3
6/30/2023	0.305
7/31/2023	0.74
8/31/2023	0.93

WET Effluent

Parameter	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	pH	Hardness	Ammonia (Cold)	Ammonia (Warm)	Aluminum	Cadmium
	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	SU	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	50	50	Report	Report	Report	Report	Report	Report
Minimum	100	43.6		0.001	0.2	0.1	0	0
Maximum	100	100		0.015	26	39.1	0.701	0
Median	100	100	7.11	0.00162	2.41	0.41	0.0915	Non-Detect
No. of Violations	0	1		N/A	N/A	N/A	N/A	N/A
9/30/2018	100	100	7.56	78		12	0.053	<0.0003
12/31/2018	100	100	7.57	81	26		0.078	<0.0001
9/30/2019	100	43.6	7.85	96		39.1	0.087	<0.0003
12/31/2019	100	100	6.99	78	2.41		0.096	<0.0003
9/30/2020	100	100	6.99	64		0.41	0.047	<0.0001
12/31/2020	100	100	7.24	76	3.79		0.11	<0.0003
9/30/2021	100	100	6.95	50.8		0.1	<0.02	<0.0001
12/31/2021	100	100	7.11	61.5	0.2		0.701	<0.0001
9/30/2022	100	100	6.88	52		0.15	0.08	<0.0005
12/31/2022	100	100	6.86	57	0.4		0.099	<0.0005
9/30/2023			7.11	63		<0.05	0.06	<0.0005

WET Effluent

Parameter	Copper	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	0.0047	0	0.001	0.025
Maximum	0.011	0.000363	0.015	0.053
Median	0.00585	Non-Detect	0.00162	0.02855
No. of Violations	N/A	N/A	N/A	N/A
9/30/2018	0.0075	<0.0003	0.0078	0.027
12/31/2018	0.0065	0.0003	0.0081	0.034
9/30/2019	0.0059	<0.0003	0.015	0.025
12/31/2019	0.0058	<0.0003	0.0082	0.053
9/30/2020	0.0077	0.0002	0.0019	0.046
12/31/2020	0.011	<0.0003	0.0074	0.047
9/30/2021	0.00565	0.0002	0.00134	0.0267
12/31/2021	0.00561	0.000363	0.00105	0.0271
9/30/2022	0.006	<0.0005	0.001	0.03
12/31/2022	0.0047	<0.0005	0.0012	0.025
9/30/2023	0.0063	<0.0005	0.0014	0.039

WET Ambient

Parameter	pH	Hardness	Ammonia	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	SU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	6.22	9.2	0	0.041	0	0.0014	0	0	0
Maximum	7.11	20.4	0	0.3	0	0.0091	0.0012	0.0013	0.008
Median	6.7	11	Non-Detect	0.11	Non-Detect	0.0041	Non-Detect	Non-Detect	0.0037
9/30/2018	6.74	11	<0.1	0.3	<0.0003	0.0035	0.0012	0.0013	0.0054
12/31/2018	6.22	9.2	<0.1	0.2	<0.0001	0.0026	0.0003	<0.001	0.008
9/30/2019	6.83	11	<0.1	0.041	<0.0001	0.0091	<0.0002	<0.0005	0.0037
12/31/2019	6.39	11	<0.1	0.068	<0.0003	0.0051	<0.0003	<0.001	0.0037
9/30/2020	6.62	11	<0.1	0.042	<0.0001	0.007	<0.0002	<0.001	0.0045
12/31/2020	6.65	11	<0.1	0.15	<0.0003	0.0043	<0.0003	<0.001	0.0042
9/30/2021	6.7	12.3	<0.1	0.0488	<0.0001	0.00649	0.00029	0.000357	0.00334
12/31/2021	6.37	20.4	<0.1	0.177	<0.0001	0.00411	0.000543	0.000585	0.0064
9/30/2022	6.96	11	<0.05	0.071	<0.0005	0.0024	<0.0005	0.001	<0.005
12/31/2022	7	11	<0.05	0.12	<0.0005	0.0014	<0.0005	<0.001	<0.005
9/30/2023	7.11	12	<0.05	0.11	<0.0005	0.0015	<0.0005	<0.001	<0.005

CSO Outfall 002

Parameter	E. coli
	Maximum
Units	#/100mL
Effluent Limit	1000
Minimum	2419.6
Maximum	641100
Median	Non-Detect
No. of Violations	2
12/31/2018	2419.6
12/31/2019	NODI: C
12/31/2020	NODI: C
12/31/2021	NODI: C
12/31/2022	641100

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.

For freshwater discharges, 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). Refer to the pollutant-specific section of the Fact Sheet for a discussion of these calculations, any assumptions that must be made and other relevant permit requirements.

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.

Appendix B – Reasonable Potential and Limits Calculations

NPDES Permit No. NH0100013

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

Pollutant	Conc. Units	Q _s (MGD)	C _s ¹	Q _e (MGD)	C _e ²		Q _d (MGD)	C _d		Criteria * 0.9		Reasonable Potential		Limits	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	740	110	3	317.7	317.7	743	110.8	110.8	675.0	78.3	N	Y	N/A	87.0
Cadmium	µg/L	740	0	3	0.0	0.0	743	0.0	0.0	0.4	0.2	N	N	N/A	N/A
Copper	µg/L	740	4.11	3	9.3	9.3	743	4.1	4.1	2.8	2.1	Y	Y	3.1	2.4
Lead	µg/L	740	0	3	0.4	0.4	743	0.0	0.0	9.5	0.4	N	N	N/A	N/A
Nickel	µg/L	740	0	3	17.3	17.3	743	0.1	0.1	108.2	12.0	N	N	N/A	N/A
Zinc	µg/L	740	3.7	3	52.6	52.6	743	3.9	3.9	27.6	27.6	N	N	N/A	N/A
Ammonia (Cold)	mg/L	740	0	3	26.0	26.0	743	0.1	0.1	26.8	4.3	N	N	N/A	N/A
Ammonia (Warm)	mg/L	740	0	3	39.1	39.1	743	0.2	0.2	12.3	1.3	N	N	N/A	N/A
Phosphorus	mg/L	740	0.016	3	1.1	1.1	743	0.020	0.020		0.0225	N	N	N/A	N/A

APPENDIX C

I. Rationale on the Appropriateness of, and the Authority for, the Inclusion of the Wastewater Treatment System and Sewer System Adaptation Plan Requirements

The adaptation planning requirements proposed in the Draft Permit are new requirements that build on existing operation and maintenance practices. EPA provides this appendix to further explain the basis for and importance of these provisions.

In Section A below, EPA discusses the necessity for requiring the development of Adaptation Plans at wastewater treatment systems (“WWTS”) and sewer systems¹ and provides some examples of how major storm and flood events can impact facility operations. In Section B below, EPA discusses the various components and proper scope of an Adaptation Plan. In Section C below, EPA sets forth the legal basis for its decision to require wastewater treatment systems and sewer systems to develop an Adaptation Plan.

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 Commission² wastewater systems are already facing severe effects due to major storm and flood events and need to better adapt to this new reality:

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.

¹ 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.

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

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,³ 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.”⁴

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.⁵ 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.⁶

³ Kirchoff, 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).

⁴ *Id.* at pgs. 5, 8.

⁵ “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>

⁶ See EPA’s *Resilient Strategies Guide* (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 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

In New England, as well as elsewhere throughout the country,⁷ 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 WWTs 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.⁸ 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.⁹ 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.¹⁰

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

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-ulg/nacwa-statement-of-principles-on-climate .pdf?sfvrsn=2](https://www.nacwa.org/docs/default-source/conferences-events/2018-ulg/nacwa-statement-of-principles-on-climate.pdf?sfvrsn=2)

⁷ 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.)

⁸ 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>

⁹ *Id.* at 13.

¹⁰ *Id.*

with its permit limits for a period of about 80 days.¹¹ 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.¹²



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.”¹³ 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

¹¹ 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/floodmitgation/NEWWA%20Journal%20Article%20on%20WSA%20Flood%20Response.pdf>

¹² 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/floodmitgation/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>

¹³ 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 “rivalled and in some areas exceeded – Tropical Storm Irene in 2011”)

inoperable and will need significant reconstruction.¹⁴ As one news outlet reported about the conditions in Ludlow:

[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.¹⁵



Figure 2: Ludlow Wastewater Treatment Plant (photo August 2, 2023, taken after July storm event)¹⁶

¹⁴ 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.")

¹⁵ 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>

¹⁶ <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))

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.”¹⁷

According to officials from Vermont DEC, both the Ludlow and Johnson WWTs 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 2020-21.¹⁸ 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, 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.¹⁹ 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.²⁰ 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,²¹ “[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 WWTs and sewer systems are currently designed with some flood protections to combat the increasing frequency of major storm and

¹⁷Robinson, 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/>

¹⁸ Telephone conversation with Vermont Department of Conservation officials, Heather Collins and Michelle Kolb (September 25, 2023).

¹⁹ Johnson Village Wastewater Post July 2023 Flood Treatment Plant Assessment Lamoille County, Vermont, NPDES Permit Number Vermont 0100901 (August 9, 2023)

²⁰ 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>

²¹ City of Leominster, North Nashua River Riverbank Stabilization Project: Summary of Work (prepared by GZA GeoEnvironmental, Inc.) (February 2023)

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

To support the Permittee's²² 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")²³ 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 permit, the three components of the Adaptation Plan include the following (additional detail, including definitions of certain terms, is included in the 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 adaptive 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 summary of the work completed in Components #1 and #2 with a proposed schedule for implementation and maintenance of adaptive measures within 48 months of the effective date of the permit.

The rationale for specific revisions and definitions is provided in more detail below.

- The permit requires the Permittee to develop an implementation schedule rather than specify a particular schedule for implementation. EPA notes that the permit also

²² For brevity, this document refers to "Permittee" throughout; however, this reference also includes all "Co-Permittee(s)" subject to the applicable permit requirements.

²³ Available at: <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

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.²⁴

- Permittees who wish to comply with this permit requirement through prior assessments must explain how its prior assessments specifically meet the requirements of the permit. The permit allows such assessments that were undertaken in the last 5 years to be used, as long as they meet certain conditions specified in the permit.
- EPA uses certain minimum standards (e.g., use of FEMA Flood Standards) and other terminology that is defined in and consistent with the federal flood standards, to ensure eligibility for federal funding as well as SRF funding.²⁵ The permit requires that the Permittee evaluate asset vulnerability using “baseline conditions” and “future conditions.” The 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.

This 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; 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 above, may also account for impacts of extreme precipitation to an extent that is useful to facilities.

²⁴ EPA notes that there are many aspects involved in addressing adaptation planning and associated implementation measures, including regional considerations and that region-wide planning is appropriate. Permittees are encouraged to engage in regional planning and EPA understands this may impact proposed schedules for implementation measures. EPA expects, however, that for most Permittees there will be many implementation measures that do not require regional planning or collaboration. To the extent this is not the case, the Permittee may document its analysis supporting such a conclusion and base its implementation schedule accordingly.

²⁵ “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>

- The permit requires evaluating the vulnerability of assets once during the permit term (during the development of the Adaptation Plan). Additional revisions 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.
- In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, Permittees are not required to submit Component 1 and 2 and instead must keep that documentation on file and available for inspection or review by EPA upon request. In all other submittals (Component 3 and future annual reports), 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.
- Regarding timing, EPA considers that the permit allows 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) without significantly impacting other ongoing municipal projects.
- Regarding annual reporting, the first report is due on March 31 following the completion of Component 1 of the Adaptation Plan. As described above, flood and major storm events are a significant threat to water quality. An annual reporting requirement is therefore appropriate to facilitate Adaptation Planning and, ideally, the implementation of an Adaptation Plan occurring as promptly and as efficiently as possible.
- 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 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. As mentioned above, the permit that allows credit for prior work to eliminate potentially costly duplication of efforts.
 3. 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,²⁶ some of which have been utilized by New England WWTSs²⁷ 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.
 4. Additionally, EPA notes that there may be federal, state or local funding sources available to assist entities with adaptation planning.²⁸
- 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 coming years. However, since the Permittee will be setting the prioritizations and scheduling for implementing the measures based on their own risks

²⁶ <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](#).

²⁷ 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.

²⁸ See EPA’s website for [Federal Funding for Water and Wastewater Utilities in National Disasters \(Fed FUNDS\)](#). <https://www.epa.gov/fedfunds>. Potential resources may also be available through the State.

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 permit entitled *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*.²⁹ 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 CWA³⁰ “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 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

²⁹ Available at: <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>

³⁰ 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).

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 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." 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 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...”³¹ 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

³¹ 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>)

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 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 Appendix, facility vulnerabilities threaten compliance with permit requirements and thus CWA objectives. Conversely, information about appropriate adaptive measures will facilitate compliance with both.

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. 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. 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.

Further, EPA does not consider the expected life or design life the appropriate recurrence interval to evaluate future risks. Namely, while a particular facility can be designed initially for an expected period of operation and the design storm at a given point in time, material changes often occur over time to operate and maintain a facility, thus extending its design life, and with the impacts of increased severity and frequency of major storm and flood events, the original design storm may no longer represent likely discharge conditions. EPA asserts that a forward-

looking evaluation of the risks to a facility relative to its current operational state is important to selection and implementation of the control measures necessary to minimize discharges that result from impacts of major storm and flood events.

EPA acknowledges that there are many possible approaches and that there are other programs that require resiliency planning. 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 WWTs 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 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 and New Hampshire.

UNITED STATES ENVIRONMENTAL
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NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES (NHDES)
WATER DIVISION
P.O. BOX 95
CONCORD, NEW HAMPSHIRE 03302-0095

JOINT 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; NHDES PUBLIC NOTICE OF EPA REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT; AND NHDES PUBLIC NOTICE OF ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: January 23, 2024 to February 22, 2024

PERMIT NUMBER: **NH0100013**

PUBLIC NOTICE NUMBER:

NAME AND MAILING ADDRESS OF APPLICANT:

City of Berlin
169 Main Street
Berlin, NH 03570

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Berlin Pollution Control Facility
10 Shelby Street
Berlin, NH 03570

And from Combined Sewer Overflow (CSO) designated Outfall 002

RECEIVING WATER: Androscoggin River, Class B

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Berlin Pollution Control Facility which discharges treated domestic and industrial wastewater. Sludge from this facility is transported to the Androscoggin Valley Refuse Landfill for disposal. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at Env-Wq 1700 et seq. NHDES cooperated with EPA in the development of the Draft NPDES Permit. NHDES plans to adopt EPA's permit under Chapter 485-A of the New Hampshire Statutes (NH RSA 485-A:13, I(a)).

In addition, EPA has requested that NHDES 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 NHDES finds necessary to meet these requirements. In addition, NHDES 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/new-hampshire-draft-individual-npdes-permits> or by contacting:

Meridith Finegan
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100
Boston, MA 02109-3912
Telephone: (617) 918-1533
Finegan.Meridith@epa.gov

Any available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **February 22, 2024**, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification and/or NHDES proposed issuance of a State Surface Water Permit, should be submitted to the EPA contact at the address or email address listed above. Upon the close of the public comment period, EPA will make all comments available to NHDES.

Any person, prior to the close of the public comment period, may submit a request in writing to EPA and NHDES for a public hearing on the Draft Permit under 40 CFR § 124.10, CWA § 401 certification and/or NHDES proposed issuance of a State Surface Water Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice if the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the 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 I

RENE PELLETIER, DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES