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 Rochester, New Hampshire

is authorized to discharge from the facility located at

Rochester Wastewater Treatment Facility
245 Pickering Road
Rochester, NH 03867

to receiving water named

Cocheco River
Piscataqua-Salmon Falls Watershed

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

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

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

This permit supersedes the permit issued on July 23, 1997.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (Industrial Pretreatment Program Annual Report), **Attachment E** (PFAS Analyte List) and **Part II (**NPDES Part II Standard Conditions, April 2018).

Signed this day of

KENNETH MORAFF Digitally signed by KENNETH MORAFF Date: 2023.03.20 14:56:11 -04'00'

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

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent through Outfall Serial Number 001 to the Cocheco 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]	5.03 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
$CBOD_5$ (June 1 - October 31)	6 mg/L 252 lb/day	6 mg/L 252 lb/day	9 mg/L 378 lb/day	2/Week	Composite
$CBOD_5$ (November 1 – May 31)	13 mg/L 546 lb/day	21 mg/L 882 lb/day	23 mg/L 965 lb/day	2/Week	Composite
$CBOD_5$ Removal	≥ 85 %	---	---	1/Month	Calculation
TSS (June 1 - October 31)	6 mg/L 252 lb/day	6 mg/L 252 lb/day	Report mg/L Report lb/day	2/Week	Composite
TSS (November 1 - May 31)	13 mg/L 546 lb/day	21 mg/L 882 lb/day	Report mg/L Report lb/day	2/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range[6]	6.5 - 8.0 S.U.			1/Day	Grab
Escherichia coli	126 /100 mL	---	406 /100 mL	3/Week	Grab
Dissolved Oxygen	≥ 7.0 mg/L			Continuous	Recorder
Ammonia Nitrogen (May 1 – October 31)	2.0 mg/L	Report mg/L	4.31 mg/L	2/Week	Composite
Ammonia Nitrogen (November 1 - April 30)	6.3 mg/L	Report mg/L	26.3 mg/L	2/Week	Composite
Total Phosphorus (April 1 – October 31)	0.12 mg/L Report lb/day	---	---	2/Week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Phosphorus (November 1– March 31)	Report mg/L Report lb/day	---	---	2/Month	Composite
PFAS Analytes[7]	---	---	Report ng/L	1/Quarter	Composite
Whole Effluent Toxicity (WET) Testing[8,9]					
LC_{50}	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 77 %	1/Quarter	Composite
Hardness	---	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Aluminum	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic[10]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Hardness	---	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Aluminum	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab
Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab

Dissolved Organic Carbon[11]	---	---	Report mg/L	1/Quarter	Grab
pH[12]	---	---	Report S.U.	1/Quarter	Grab
Temperature[12]	---	---	Report °C	1/Quarter	Grab
Total Phosphorus[13] (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]**
$CBOD_5$	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes[7]	---	---	Report ng/L	1/Quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
PFAS Analytes[14,15]	---	---	Report ng/g	1/Quarter	Composite

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 the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

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

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

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

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

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). For NH: See Part I.G.1 below for a provision to modify the pH range.

7. Report in nanograms per liter (ng/L). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for wastewater is available.

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

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

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

11. 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.

12. 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.

13. See Part I.G.2 for special conditions regarding ambient phosphorus monitoring.

14. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for sludge is available.

15. Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

Part I.A., continued.

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

3. The discharge shall be free from 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 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. In accordance with 40 CFR § 122.44(j)(1), the Permittee must identify, in terms of character and volume of pollutants contributed from Significant Industrial Users (SIUs) discharging into the POTW 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.

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. 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.H below for reporting requirements.

2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location (including latitude and longitude) and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

a. All sanitary sewer lines and related manholes;

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

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

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

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

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

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

j. The scale and a north arrow; and

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

5. Collection System O&M Plan

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

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

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

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

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

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

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;

(2) A preventive maintenance and monitoring program for the collection system;

(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;

(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and

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

6. Annual Reporting Requirement

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

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

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

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

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

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

f. If the monthly average flow exceeded 80 percent of the facility's 5.03 MGD design flow (4.02 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.

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of this permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see **Attachment C –** Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

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

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

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

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

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

3. The Permittee shall provide EPA and the State with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with § 403.12(i). The annual report shall be consistent with the format described in **Attachment D** (Industrial Pretreatment Program Annual Report) of this permit and shall be submitted no later than **March 1** of each year.

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

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

6. The Permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The Permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the Permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the Permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The Permittee will implement these proposed changes pending EPA Region1's approval under 40 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

7. Beginning the first full calendar quarter following 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available, 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
   - Contaminated Sites
   - Fire Fighting Training Facilities
   - Airports
   - Any Other Known or Expected Sources of PFAS

   Sampling shall be for the PFAS analytes listed in Attachment E.

Industrial User Effluent Characteristic	Maximum Daily	Monitoring Requirements	
		Frequency	Sample Type
PFAS Analytes	Report ng/L	1/Year	Composite

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

F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 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. SPECIAL CONDITIONS

1. Provision to Modify pH Range

The pH range may be modified if the Permittee satisfies conditions set forth in Part I.I.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 even numbered year that occurs at least six months after permit issuance, and during even 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. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

A sampling plan shall be submitted to EPA and NHDES (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan. The sampling and analysis plan and/or supporting monitoring records shall include at a minimum the following information or criteria:

a) Site map with location of sampling point including a description of sampling point location, waterbody name, town/city and longitudinal/latitudinal coordinates.
b) Description of sampling methodology to include but not limited to:
    (1) Sample preservation prior to laboratory analysis
    (2) Sampling frequency
    (3) Replicate frequency, whether analyzed in house or by a contract laboratory, to be each sample event. Designate the replicate sample on monitoring records with "REP."
c) Individual(s) who performed the sampling
d) Date(s) and time(s) sampling and analyses were performed
e) Laboratory name
f) Laboratory analysis method
g) Total phosphorus laboratory Reporting Detection Limit (RDL) and Method Detection Limit (MDL). The RDL shall be 5 ug/L or less.
h) All data and monitoring information shall be retained for 6 years from the date of the sample event and will be made available to EPA and NHDES upon request.
i) Data for the sample shall be entered in the DMR.
    (1) If applicable, attach contract laboratory results for sample and replicate, including chain of custody, to the relevant DMR.
    (2) The relative percent difference (RPD) between the sample and its corresponding replicate sample should be ≤ 20%. A comment on the DMR

identifying the RPD for the sample event is to be included. If the analysis is conducted in house, comment is to include result for replicate sample also.

j) Other changes or criteria as specified by the agencies

H. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. This includes the NHDES Monthly Operating Reports (MORs). See Part I.H.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Industrial User and Pretreatment Related Reports

a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. These requests, reports and notices include:

(1) Annual Pretreatment Reports,

(2) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,

(3) Revisions to Industrial Discharge Limits,

(4) Report describing Pretreatment Program activities, and

(5) Proposed changes to a Pretreatment Program

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

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

4. Submittal of Biosolids/Sewage Sludge Reports

By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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

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

(1) Transfer of permit notice;

(2) Request for changes in sampling location;

(3) Request for reduction in testing frequency;

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

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

6. Submittal of 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/

7. 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.H.3 through I.H.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

8. Verbal Reports and Verbal Notifications

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

   b. Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510
and
NHDES Assigned NPDES Inspector at 603-271-1493

I. 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-A13,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. 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.

8. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 5.03 MGD design flow (4.02 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.

Attachment A

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

Attachment B

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL

USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

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

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

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

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

2. Test Variability (Test Sensitivity)

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

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

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

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

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

Attachment C

EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

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

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

Please read direction below before filling out form.

ITEM I.

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

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

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

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

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

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

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

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

ITEM V.

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

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

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

Item VI.

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

(Item VI. continued)

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

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

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

ITEM VII.

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

ITEM VIII.

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

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

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

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

REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS (TBLLs)

POTW Name & Address : _____

NPDES PERMIT # : _____

Date EPA approved current TBLLs : _____

Date EPA approved current Sewer Use Ordinance : _____

ITEM I.

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

_____

_____

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

If yes, explain.

_____

_____

ITEM V.

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

ITEM VI.

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

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

*Hardness Dependent (mg/l - CaCO3)

ITEM VII.

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

ITEM VIII.

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

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

Attachment D
Industrial Pretreatment Program Annual Report

The Permittee shall provide the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR § 127.2(b), in compliance with this section and 40 CFR Part 3 (including, in all cases, Subpart D to part 3), 40 CFR § 122.22, and 40 CFR Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by State law.

The Permittee shall submit to Approval Authority and the State permitting authority a report that contains the following information requested by EPA:

1. An updated list of the POTW's Industrial Users by category as set forth in 40 CFR § 403.8(f)(2)(i), to include:
    a. Names and addresses, or a list of deletions and additions keyed to a previously submitted list. The POTW shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical Pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The POTW shall also list the Industrial Users that are subject only to local Requirements. The list must also identify Industrial Users subject to categorical Pretreatment Standards that are subject to reduced reporting requirements under paragraph (e)(3), and identify which Industrial Users are Non-Significant Categorical Industrial Users;
    b. Permit status - Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);
    c. Baseline monitoring reporting requirements for newly promulgated industries;
    d. In addition, a brief description of the industry and general activities.

2. A summary of compliance and enforcement activities during the preceding year, including the number of:
    a. significant industrial users inspected by POTW (include inspection dates for each industrial user),

b. significant industrial users sampled by POTW (include sampling dates for each industrial user),
c. compliance schedules issued (include list of subject users),
d. written notices of violations issued (include list of subject users),
e. administrative orders issued (include list of subject users),
f. criminal or civil suits filed (include list of subject users), and
g. penalties obtained (include list of subject users and penalty amounts).

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

4. The Permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated Pretreatment Standards or requirements 40 CFR § 403.8(f)(2)(vii). This list is to be published annually in a newspaper of general circulation in the Permittee's service area.

5. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported:
   a. Total number of SIUs inspected;
   b. Total number of SIUs sampled; and
   c. For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.

6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
8. A detailed description of all interference and pass-through that occurred during the past year.
9. A thorough description of all investigations into interference and pass-through during the past year.
10. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies.
11. The Permittee shall analyze the treatment facility influent and effluent at least annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:

    Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Cyanide, and Phenols.

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

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

    The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.

13. The summary shall include an evaluation of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraphs above or any similar sampling program described in this Permit.

14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified.

15. Information as required by the Approval Authority or State permitting authority on the discharge to the POTW from the following activities:

    a. Groundwater clean-up from underground storage tanks;
    b. Trucked or hauled waste; and
    c. Groundwater clean-up from RCRA or Superfund sites.

16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.

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

18. Results of all PFAS sampling conducted of industrial discharges in accordance with the Pretreatment Program requirements in Part I of the NPDES permit.
19. Any other information that may be deemed necessary by the Approval Authority.

Attachment E: 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	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTeDA	376-06-7
Perfluoroalkyl sulfonic acids		
Acid Form		
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentansulfonic 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		
1*H*,1*H*, 2*H*, 2*H*-Perfluorohexane sulfonic acid	4:2FTS	757124-72-4
1*H*,1*H*, 2*H*, 2*H*-Perfluorooctane sulfonic acid	6:2FTS	27619-97-2
1*H*,1*H*, 2*H*, 2*H*-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-3*H*-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
2H,*2H*,*3H*,*3H*-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

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

TABLE OF CONTENTS

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

(1) Criminal Penalties

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

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

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

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

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

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

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

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

d. *Prohibition of bypass.*

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

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

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

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

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

5. Upset

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

improper operation.

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

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

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

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

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

e. *Twenty-four hour reporting.*

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

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

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

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

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

Agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Municipality

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Upset see B.5.a. above.

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

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

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

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

2. Commonly Used Abbreviations

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

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

RESPONSE TO COMMENTS
NPDES PERMIT NO. NH0100668
ROCHESTER WASTEWATER TREATMENT FACILITY
ROCHESTER, NEW HAMPSHIRE

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

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # NH0100668 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From April 19, 2022 through June 17, 2022, EPA solicited public comments on the Draft Permit.

EPA received comments from:

- City of Rochester, dated June 17, 2022
- Brown and Caldwell (on behalf of City of Rochester) dated June 17, 2022
- Conservation Law Foundation, dated June 16, 2022

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

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: https://www.epa.gov/npdes-permits/new-hampshire-npdes-permits.

A copy of the Final Permit may be also obtained by writing or calling George Papadopoulos, USEPA, 5 Post Office Square, Suite 100 (Mail Code: 06-4), Boston, MA 02109-3912; Telephone: (617) 918-1579; Email papadopoulos.george@epa.gov.

Table of Contents

I. Summary of Changes to the Final Permit

1. Part I.A.1 has been revised to eliminate the concentration and mass-based Total Suspended Solids (TSS) maximum daily effluent limitations. These limitations have been replaced by monitor only requirements. See Response 14.

2. The street address of the facility has been corrected in the Final Permit. See Response 30.

3. Parts I.A.1 (footnotes 7 and 14) and I.E.7 of the Final Permit have been updated to indicate that the PFAS monitoring and reporting requirement includes all 40 of the PFAS Analytes required to be tested in Method 1633 (included in Final Permit Attachment E). See Response 45.

II. Responses to Comments

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

A. Comments from Blaine Cox, City Manager, Rochester, New Hampshire:

Comment 1

The City of Rochester, New Hampshire owns and operates a wastewater treatment facility (WWTF) which discharges treated effluent to the Cocheco River. The Cocheco River is within the Great Bay watershed and forms the Piscataqua River at the confluence of the Cocheco and Salmon Falls Rivers. Currently Rochester's WWTF is operating under a NPDES permit that was issued July 23, 1997, which has been administratively continued since its expiration in July 2002, almost twenty years ago.

[EPA note: Tables comparing the 1997 Permit and 2022 Draft Permit are not reproduced here.]

In addition to commenting on this Draft Permit, and to put Rochester's CWA commitments into perspective, the City of Rochester is also complying with the requirements of a recently issued General Nitrogen Permit. On November 24, 2020, EPA Region 1 issued the NPDES Great Bay Total Nitrogen General Permit NHG58A000 (Nitrogen GP) which covers discharges from thirteen wastewater treatment facilities (WWTFs) located in twelve communities that discharge treated wastewater containing nitrogen within the Great Bay watershed. Rochester is one of those communities. The GP provisions include effluent limitations and extensive studying, monitoring and reporting requirements. In order to comply with the effluent limitations in the GP, Rochester has entered into an Administrative Order on Consent with EPA Region 1 effective March 8, 2021 that grants Rochester an interim TN effluent limit until October 31, 2025. During this interim period, Rochester has committed to implement the following projects in order to meet the nitrogen effluent limitation of 198 lbs/day set forth in the Nitrogen GP. Those projects include:

1. Pilot Septage Facility Upgrade – The City has completed and evaluated a pilot septage receiving facility upgrade, which included pilot testing of septage quantities and process response conditions when adding septage at the Headworks Facility. The Pilot evaluated the

impacts of the additional carbon source from the septage to the influent of the aeration basin and simultaneous nitrification/denitrification (SND) system. A report was generated and submitted to EPA in September 2021. This report informed the design and implementation of the permanent septage facility upgrade.

2. Permanent Septage Facility Upgrade - The City is designing and will bid and construct the full septage facility upgrade at the Headworks Facility utilizing the results of the pilot and evaluation, originally due by December 31, 2022. Upon completion of the upgrade, the City will evaluate efficacy of the constructed, permanent septage facility upgrade and report results in the Nitrogen Reduction Report. The City will be requesting a formal extension of approximately 1 year for this project deadline to account for federal funding recently awarded for this project.

3. Carbon Storage and Feed Building - The City designed this project to provide a permanently installed building at the WWTF to house four (4) 10,000 gallon storage tanks, feed pumps, piping, controls and appurtenances for supplemental carbon to support the simultaneous nitrification/denitrification (SND) system that the City is currently operating to reduce effluent total nitrogen. Because the influent biochemical oxygen demand (BOD) to nitrogen ratio is low, there is insufficient carbon (BOD) in the influent to support the SND process. Carbon, in the form of acetic acid, was previously stored in two (2) 5,000 gallon tanks located outside, adjacent to the aeration basins. Upwards of 18,000 gallons of acetic acid is delivered to the WWTF on weekdays. The temporary storage system does not have sufficient capacity for the total volume of acetic acid delivered, nor does the system have a means to precisely meter the acetic acid into the treatment process. And, since the current storage tanks are located outside and open to the elements, the storage system was subject to freezing from mid-October to mid-May.

Currently, acetic acid delivered to the WWTF is discharged directly into the aeration tank (anoxic zone), which does not provide for the best use of the product. The City will complete the project by October 31, 2022. The City will then evaluate the efficacy of the carbon storage and feed building project and report results in the Nitrogen Reduction Report.

4. Aeration Automation Project – The City will complete engineering construction, equipment purchases, installation and programming and optimization of the full aeration automation project by October 31, 2022. The project included aeration diffuser replacement project has been completed and a Bioprocess Aeration Control System (BioChem® Technology, Inc.) that was installed. This system uses process-based calculations to combine the control of aeration blowers and control valve actuators to achieve proper levels of DO in each aeration basin zone. Electric valve actuators, in-basin analyzers (ORP, DO, nitrate) and mechanical mixers were required to help maximize benefits. Also, to enhance the denitrification process, an aeration timer has been added to the program to aid in stabilizing anoxic conditions in the anoxic selectors and sidewall zones. Commissioning, start-up and optimization of the full system benefits is closely tied to completion of the Carbon Storage and Feed Building operations. The City will report results of the this project in the Nitrogen Reduction Report.

5. Sewer System Master Plan Study – The City submitted a scope of work to EPA and NHDES in September 2021, but the ongoing work includes a Sewer System Master Plan conducted by Weston & Sampson, including flow metering and modelling efforts, infrastructure

evaluation and facility inspections to fully evaluate the sanitary system and identify and reduce sources of inflow and infiltration in the POTW. The City shall report the findings and recommendations of the study in the Nitrogen Reduction Report.

6. Nitrogen Reduction Report – The City shall submit a Nitrogen Reduction Report to EPA and NHDES by October 31, 2024. The Nitrogen Reduction Report shall indicate what actions the City will take to further reduce Nitrogen discharges in order to ensure consistent compliance with the rolling seasonal average effluent limit for Total Nitrogen of 198 lbs/day. Upon submission of the Nitrogen Reduction Report, the City will begin to implement the recommended actions set forth in the Report.

Response 1

EPA acknowledges the comment.

Comment 2

Total Phosphorus
Permit Pages 2-3, Part 1.A.1, Fact Sheet, Pages 5 (Part 2.2), 6 (Part 2.2.1, 2.2.2, 2.2.3), 7 (Part 2.2.4), 8 (Part 2.2.4) – Total Phosphorus (April 1 – October 31) 0.12 mg/L and (November 1 – March 31):

In its Draft Permit, EPA has set an average monthly phosphorus effluent limitation of 0.12 mg/L from April 1 through October 31 annually. As is set forth in more detail in the attached technical comments by the City's consultants, Brown and Caldwell (Attachment 1), Rochester objects to the proposed phosphorus limit for several reasons, not the least of which is that the freshwater Cocheco is not phosphorus-related impaired. EPA's observations of impairment do not demonstrate nutrient impairment of the Cocheco River and are unrelated to established assessment protocols or are highly subjective statements without basis in established objective or measurable goals. The freshwater Cocheco River is not listed as impaired for nutrients in the State of New Hampshire's 2020-2022 CWA §303(d) list for any non-tidal assessment unit downstream of the Rochester WWTF discharge.

Multiple lines of evidence support the lack of phosphorus impairments. The available water quality and biological data support a positive interpretation of the Cocheco River's health and ability to assimilate nutrients. Much of this evidence was compiled by Brown and Caldwell (2020) which summarized multiple data types from multiple sources both upstream and downstream of the City's outfall. An evaluation of the most recent 10 years of data indicated:

Favorable dissolved oxygen concentrations;
No pH impacts;
Low chlorophyll-a;
No nutrient-related impacts to benthic macroinvertebrates; and
Moderate algal levels consistent with a conceptual model of strong light limitations that allow moderate levels of algal growth and assimilation of phosphorus.

As an initial observation, we note that EPA's 2010 Permit Writer's Manual (Sec. 6.4) provides guidance on assessing the reasonable potential using water quality models. For nutrients, EPA

recommends "modeling that accounts for biological activity or reaction chemistry." We also note that the EPA's 2010 Permit Writer's Manual (Sec. 6.1) suggests that states adopt seasonal or annual averaging periods for nutrients, as opposed to conditions applied to toxic pollutants.

With respect to biological activity or reaction chemistry, the Cocheco River has specific characteristics that aid in the assimilation of phosphorus. In promoting a one-size-fits-all phosphorus permitting approach, using the Gold Book standard and applying it to a 7Q10 stream flow, EPA has failed to recognize the specific characteristics of the Cocheco River that increase phosphorus assimilative capacity and reduce nutrient impacts. For more than four river miles downstream of the City's outfall, the Cocheco River is relatively narrow and has abundant shading from a riparian corridor that consists of relatively tall and dense tree cover. In addition, the Cocheco River has naturally high levels of dissolved humic substances and TOC that impart a darkened color to the water that further increases the light limitation on algal growth.

According to the Maine Department of Environmental Protection (2021):

> Natural environmental conditions [mitigate] the impact of phosphorus enrichment and the risk of those conditions changing. For example, limiting factors can reduce light availability (e.g., shade, turbidity, water color), bind phosphorus (e.g., clay, dissolved organic carbon…[and] can make phosphorus unavailable for plant growth.

The light limitations imposed by the combination of shade and natural color do not prevent algal growth; rather, they limit algal growth rates to moderate levels, such that phosphorus can be assimilated without causing nuisance levels of periphyton. EPA has failed to consider these characteristics when developing the low phosphorus limit in this Draft Permit. Consistent with the EPA's 2010 Permit Writer's Manual and as the State of Maine has recognized, we strongly suggest that EPA should consider these factors that are site-specific to the Cocheco River before imposing a generalized permitting approach to the Rochester WWTF.

EPA's proposed phosphorus limit is based on the 7Q10 streamflow and Gold Book phosphorus target (100 ug/L). While application of this standardized approach simplifies EPA's permitting, it ignores the specific characteristics of the Cocheco River that are discussed above and in more detail in Attachment 1. In taking this simplified approach, EPA is imposing on the blue-collar community of Rochester a near-limits of technology effluent limit, which will cost in excess of $18.3 million to construct, and at least $300,000 annually in operation and maintenance costs. (See Brown and Caldwell Cost Estimates, Attachment 2).

These costs, layered on to what Rochester has already committed to as it seeks to achieve nitrogen reductions in wastewater and stormwater, will be extremely burdensome to the community. The City of Rochester completed a Financial Capability Assessment indicating the costs associated with these upgrades would present a medium burden upon the City's ratepayers, which allows for an extended schedule of compliance of up to 15 years. See City of Rochester Financial Capability Assessment – June 16, 2022, incorporated by reference as Attachment 3.

EPA's simplistic approach will result in an overly stringent TP effluent limit that saddles the City with compliance costs that are higher than necessary and permanent in nature. A more

scientifically defensible limit would utilize an appropriate streamflow for nutrients (i.e. an August median streamflow) and a phosphorus target that is informed by the Cocheco River's assimilative capacity.

In lieu of the standardized 7Q10/Gold Book permitting approach, the City requests an opportunity to do a phosphorus treatment full-scale demonstration test of a product called Neo WaterFX300 (formerly known as RE300), along with a special condition and schedule to derive a site-specific phosphorus target and final limit.

New Hampshire is currently engaged in a rulemaking process which will fundamentally change the approach it takes to nutrient permitting (Env-Wq 1705). The revised version of the rule is expected to be out for public comment this summer, well within the timeframe for consideration in EPA's permitting process for Rochester. The forthcoming rule will provide an alternative to the 7Q10 streamflow for nutrient permitting and will offer options for deriving waterbody-specific phosphorus targets such as model or data-based evaluations.

Given the imminence of this change of approach for nutrient permitting in New Hampshire, we ask that EPA incorporate that changed approach into the permitting process for Rochester. Rochester is willing to be the test case for application of the new nutrient permitting approach that New Hampshire is seeking to implement. Specifically, the City recommends that the NPDES permit include the following elements in lieu of the proposed phosphorus limit:

> A Phosphorus Pilot Project that will run in parallel with the Special Condition work set forth below. The City has recently completed a bench-scale jar testing to estimate the coagulant dose and costs for reducing effluent total phosphorus discharges using Neo WaterFX300 (formerly known as RE300). Neo WaterFX300 shows some promise, but it is unclear whether it will work on a full-scale basis at the plant given the plant's unique configuration. Within 6 months of the effective date of the NPDES permit, Rochester will submit a plan to EPA and NHDES for full-scale demonstration testing at its WWTF. Once final and approved by EPA and NHDES, the City would implement this demonstration testing plan (implementation expected to be scheduled for summer 2023).
>
> A Special Condition and Schedule to derive a site-specific phosphorus target in accordance with New Hampshire's revised rules. Such a condition would include a schedule for the City to (a) develop a monitoring and analysis plan subject to DES and EPA review and approval; (b) perform the monitoring and analysis plan; and (c) interpret the results to propose a site-specific phosphorus target that would maintain or achieve desirable levels of response variables such as DO, chlorophyll-a, pH, and plant/algae growth. The details of this Special Condition: Site Specific Phosphorus Linkage Study are set forth in more detail in Attachment 1.

The Special Condition and Schedule and associated monitoring/study is modeled after the 2020 General Nitrogen Permit that allows communities to operate their WWTFs under an interim limit while undertaking extensive site-specific studies to determine the appropriate nitrogen target for the Great Bay Estuary. In addition, the timing of this work should not appreciably change the

schedule that Rochester would be following if it is otherwise required to implement a phosphorus treatment upgrade at its plant.

Given the burden both financially and staffing-wise placed upon Rochester due to all of its Clean Water Act commitments, Rochester is seeking a schedule for implementation of the phosphorus upgrades to commence, if needed, after the completion of the work that the City is currently undertaking pursuant to its February 26, 2021 Administrative Order on Consent with EPA. That Order expires as of October 31, 2025. The City proposes a schedule for compliance in Section 3.0 for implementation of the phosphorus upgrade given the medium impact burden on ratepayers for the upgrade and other factors outlined below.

Response 2

Prior to offering specific responses to the City's comments, EPA observes that its overall approaches to establishing phosphorus effluent limitations in NPDES permits have been extensively adjudicated over the past fifteen years, and they have been found to be reasonable and upheld by both the Environmental Appeals Board and the United States Court of Appeals for the First Circuit. Petitions for certiorari have twice been denied by the United States Supreme Court for Region 1 nutrient permitting (total phosphorus and total nitrogen) decisions under 40 C.F.R. §122.44(d)(1)(vi) in recent years. Arguments similar if not substantively identical to the ones relating to the use of the Gold Book as relevant information in setting phosphorus effluent limitations, permit delay based on development of new models or TMDLs, and others, have been addressed and have been decided in EPA's favor. *See e.g., Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013); *City of Taunton v. U.S. Envtl. Prot. Agency*, 895 F.3d 120 (1st Cir. 2018), cert. denied, 139 U.S. 1240 (2019); *In re: City of Lowell*, 18 E.A.D. 115 (EAB 2020). Should the City wish to review these decisions, they are available here:

City of Taunton v. EPA (EAB and First Circuit)

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/0A045314B61E682785257FA80054E600/$File/Denying%20Review%20Vol-17.pdf
- https://yosemite.epa.gov/oa/eab_web_docket.nsf/A568248B44D1C63785258053005AEDD0/$File/Opinion%207.9.2018%20(46%20pages).pdf

Upper Blackstone Water Pollution Abatement Dist. v. EPA (EAB and First Circuit)

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/A44361EC4C211B0685257865006EA1EC/$File/Upper%20Blackstone.pdf
- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/2D0D249E441A18F185257B6600725F04/$File/October%2018%202017.pdf

In re Town of Newmarket Wastewater Treatment Plant

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/97CCD304C9B7E58585257C3500799108/$File/Newmarket%20Decision%20Vol%2016.pdf

In re City of Attleboro MA Wastewater Treatment Plant

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/D506EBEE22A1035E8525763300499A78/$File/Attleboro.pdf

In re: City of Lowell

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/6D63DE203BB980D2852585960069906D/$File/City%20of%20Lowell.pdf

EPA is both confident in and committed to the overarching decision-making framework for nutrient permitting established by these precedents: administrative and judicial bodies have expressly found EPA's approach to be reasonable under the Act and, for its part, EPA has found the approach in its experience to be workable, expeditious, as well as demonstrably effective in addressing nutrient pollution, in a manner that is neither overly stringent, nor overly lax. While drawing on information from the scientific literature and national and regional EPA guidance, EPA also accounts for site-specific facts and circumstances surrounding the discharge and receiving waters in arriving at the permit result. EPA acknowledges that there are a range of alternative technical approaches and opinions when permitting for nutrients to ensure that uses for the waters designated by the State for its citizens are achieved; while some of these may have merit, EPA's existing approach has been proven to have merit. EPA, accordingly, has discerned no persuasive reason to abandon the protective approach that has been adopted in the Draft Permit, and that has proven effective in other permitting initiatives, for the unproven one proffered by the City.

This comment raises objections to the proposed total phosphorus limit in the Draft Permit and requests several modifications be made to the final permit with regards to phosphorus. First, the commenter objects to the proposed limit because the Cocheco River is not listed as impaired. Second, the commenter posits that EPA failed to consider relevant, unique characteristics of the Cocheco River, supporting its technical claims with particular studies. The commenter explains that the EPA Permit Writers Manual requires consideration of these characteristics. Third, the commenter asserts that the technological upgrades needed to comply with the proposed limit would create financial hardship for the city's ratepayers. Fourth, the commenter argues that because New Hampshire is in the process of revising its water quality standards, EPA should "incorporate that changed approach into the permitting process for Rochester." Fifth and finally, in light of the River's purported unique characteristics and the possibility of changed water quality standards, the commenter requests a site-specific study, offers to be the "pilot project" for the new standards, requests a compliance schedule to meet the permit limit, or some

appropriate combination thereof. EPA will respond to each of these five major points in turn.

First, the commenter cites the fact that the Cocheco River is not listed by NHDES as impaired for phosphorus as a justification for not needing a phosphorus limit. Relatedly, the commenter asserts that EPA's approach is "unrelated to established assessment protocols." EPA first notes that a 303(d) listing is not a prerequisite to determining there is a reasonable potential for a discharge to cause or contribute to an excursion above an applicable water quality criterion. *See* 40 C.F.R. § 122.44(d)(1)(ii). This is consistent with the Final Rule Preamble for 40 C.F.R. Part 122.44(d)(1), which states:

> Several commenters asked if it was necessary to show in-stream impact, or to show adverse effects on human health before invoking [40 C.F.R. § 122.44(d)(1)(vi)] as a basis for establishing water quality-based limits on a pollutant of concern. It is not necessary to show adverse effects on aquatic life or human health to invoke this paragraph. The CWA does not require such a demonstration and it is EPA's position that it is not necessary to demonstrate such effects before establishing limits on a pollutant of concern."

See 54 Fed. Reg. 23868, 23878. An argument very similar to the commenter's was raised in *Taunton* and Environmental Appeals Board upheld the Region's approach. *In re City of Taunton*, 17 E.A.D. 105, 142-144 (EAB 2016), *aff'd*, 895 F.3d 120 (1st Cir. 2018). As also described in Response 33, NHDES creates the 303(d) list, subject to EPA approval, in an entirely separate process from EPA drafting a NPDES permit. *See In re City of Keene,* 18 E.A.D. 720, 726-727 (EAB 2022). Pursuant to 40 C.F.R. § 122.44(d)(1)(i), EPA establishes water quality based effluent limits in an NPDES permit based on the reasonable potential for a discharge to cause or contribute to an excursion above an applicable water quality criterion. 40 C.F.R. § 122.44(d)(1)(ii) lists the factors EPA must consider in its reasonable potential analysis and, notably, does not indicate that there could only be a reasonable potential to cause or contribute to an excursion above an applicable water quality criterion when a receiving water is already impaired. In fact, a practice of finding reasonable potential only when a waterbody is already impaired would be illogical and detrimental to water quality: EPA's proactive and legally sound approach of determining whether a discharge into a currently unimpaired water has the reasonable potential to cause or contribute to an excursion above an applicable water quality criterion, regardless of impairment listing status, ensures that adequate controls are in place to attain and maintain WQS, rather than wait for a waterbody to become impaired and then impose more stringent limits to remedy the impairment. *See* 33 U.S.C. § 1312.

This is especially the case in the context of phosphorus-driven eutrophication where the eutrophic cycle becomes more entrenched until the phosphorus enabling that cycle is controlled. *See EPA Nutrient Criteria Technical Guidance Manual Rivers and Streams*, July 2000, at 3 ("Control of nutrients is further complicated by the cycling of nitrogen (N) and phosphorus (P) in aquatic systems. Nutrients can be re-introduced into a waterbody from the sediment, or by microbial transformation, potentially resulting in a long recovery period even after pollutant sources have been reduced.") Thus, waiting for

the State to list a waterbody as impaired, especially where the State has no clear mechanism to do so,[1] would greatly exacerbate the environmental damage and extend the amount of time and resources necessary to address it.

EPA extensively documented its reasonable potential analysis, including site-specific water quality analysis, in the Fact Sheet at pages 22-33; Appendix B-3. The comment, focused on impairment status, does not refute the technical information EPA relied on in its reasonable potential analysis which, as described above, is separate and independent from the 303(d) listing process.

In any event, the absence of the receiving water on New Hampshire's Year 2018 or combined 2020/2022 Integrated Lists of Waters ("303(d) List") list does not in any way indicate that it is achieving WQS with respect to phosphorus. NHDES does not currently have a methodology for the assessment of impairments in rivers or riverine impoundments for this nutrient, and therefore no river or riverine impairment throughout the State of New Hampshire is currently listed as impaired for phosphorus.[2]

Moreover, while there is not currently a listed phosphorus impairment nor is a listing necessary to setting a phosphorus limit, as noted in the Fact Sheet at page 30, the New Hampshire Year 2018 and 2020/2022 combined Integrated Lists of Waters ("303(d) List"), lists dissolved oxygen saturation as causing impairment of the aquatic life designated use in the downstream segment of the Cocheco River where Station 4 was located (Assessment Unit NHRIV600030608-03). This downstream impairment provides further evidence of downstream water quality problems for a parameter (dissolved oxygen) that is linked to cultural eutrophication and supports EPA's determination below. See Fact Sheet at 22-33.

Second, the commenter asserts that EPA did not consider certain site-specific factors when calculating the permit limit. To the contrary, EPA followed its now well-established practice of considering site-specific data, including several reports submitted by the City, along with national and regional phosphorus guidance manuals. *See Upper Blackstone* at 31 ("The EPA did not blindly follow any of these [guidance] recommended limits, but after examining additional site-specific data, including local water quality studies, selected a phosphorus limit designed to ensure an in-stream concentration of 0.1 mg/L."). EPA provided a detailed site-specific analysis, which spanned 7 pages, that supported its conclusion both as to the reasonable potential analysis and the calculation of

[1] It is clear that ideally a state would list waters impacted by nutrients prior to the onset of the eutrophication process. *See EPA Memorandum re: Development and Adoption of Nutrient Criteria into Water Quality Standards,* "Grubbs Memo," dated November 14, 2001, *at* 19 ("Decisions to list waters as impaired for nutrients under Clean Water Act section 303(d) should ideally occur prior to the highly visible responses such as algal blooms to facilitate a more proactive approach to management."). That a state has not done so, however, does not absolve NPDES permitting authorities from the need to consider nutrient impacts on water-quality or in any way mitigate the documented findings of such impacts. Here, EPA has documented the "highly visible responses" from the phosphorus discharge, despite the lack of a phosphorus impairment listing, and is thus necessarily acting now to address the urgent issue of eutrophication.

[2] See Response 33 for a more detailed discussion regarding the 2020/2022 New Hampshire Consolidated Assessment and Listing Methodology (CALM) as it related to phosphorus impairments in New Hampshire.

the effluent limitation. See Fact Sheet at 25-32. EPA derived the permit limit in accordance with 40 C.F.R. § 122.44(d) and all other applicable laws. EPA analyzed whether there was reasonable potential to exceed either the narrative water quality standard for phosphorus, Env-Wq 1703.14(b) and (c), or other water quality standards, such as dissolved oxygen, that are impacted by phosphorus.

As stated in the Fact Sheet, "EPA evaluated both instream and effluent total phosphorus data as well as other available information pertaining to response variables which might indicate the impacts of nutrient inputs into the receiving water." Fact Sheet at 25. Integral to this site-specific analysis was information provided by the City which included the results of qualitative (visual algal/macrophyte surveys) and quantitative (water quality sampling) field investigations that were conducted in the non-tidal and tidal reaches of the Cocheco River from 2015-2017. This site-specific, tailored analysis demonstrates EPA did not employ a simplistic, "one-size-fits all" approach as described in the comment.

As a summary, key site-specific factors that EPA weighed in their totality to conclude that the City's phosphorus discharge had reasonable potential to cause or contribute to a violation of New Hampshire's narrative phosphorus water quality standard, primarily through contributing to cultural eutrophication,[3] are:

- visual surveys documenting significant algal growth, elevated levels of macrophytes, and excessive duckweed growth;
- documented uptake of phosphorus in downstream areas suffering from pervasive duckweed growth;
- documented dissolved oxygen supersaturation in downstream waters;
- monitoring data demonstrating dissolved oxygen levels less than the minimum State criteria of 5.0 mg/L;
- the identification in the New Hampshire Year 2018 and the combined 2020/2022 Integrated Lists of Waters ("303(d) List") of dissolved oxygen saturation as causing impairment of the aquatic life designated use in the segment of Cocheco River which is downstream from the Rochester discharge (Assessment Unit NHRIV600030608-03); and
- the downstream concentration of phosphorus under critical conditions is projected to exceed the Gold Book target of 0.1 mg/L.

[3] New Hampshire's narrative phosphorus standard contains two operative parts: (1) that the discharge of phosphorus shall not impair any existing or designated uses, unless naturally occuring and (2) any phosphorus dischargers "which encourage cultural eutrophication shall be treated to remove the nutrient(s) to ensure attainment and maintenance of water quality standards." Env-Wq 1703.14. EPA's analysis focused on the latter element, cultural eutrophication, as it is more readily amenable to technical analysis. EPA notes, however, that in causing or contributing to cultural eutrophication the discharge necessarily also has the reasonable potential to cause or contribute to a violation of applicable designated uses, such as aquatic life and recreational uses. *See* EPA Nutrient Criteria Technical Guidance Manual at A-25 ("When ambient light and other algal-growth factors are favorable, nutrient enrichment can promote excessive productivity and respiration in streams and rivers, resulting in aesthetic and recreational impairments, departures from water quality criteria, and adverse effects to aquatic life.").

Additionally, EPA reviewed several site-specific studies (which included several studies submitted along with the City of Rochester's comments that were previously provided to EPA by Rochester during the development of the Draft Permit[4]) pertaining to response variables which might indicate the impacts of nutrient inputs into the receiving water as well as effluent and ambient phosphorus data. EPA concluded that the totality of this site-specific evidence demonstrates that there is reasonable potential for the discharge of phosphorus from the Rochester WWTF to cause or contribute to cultural eutrophication downstream that must be addressed to ensure attainment and maintenance of the state's narrative water quality standards [See Env-Wq 1703.14(b) and (c)].

To further elaborate upon the first item in the summary list above, there is extensive visual evidence of "excessive plant growth," a definitional aspect of cultural eutrophication under Env-WQ 1702.15. For example, the following photographs were included in the Fact Sheet:

Photo 7 from 2015 Cocheco River Report (page 9):

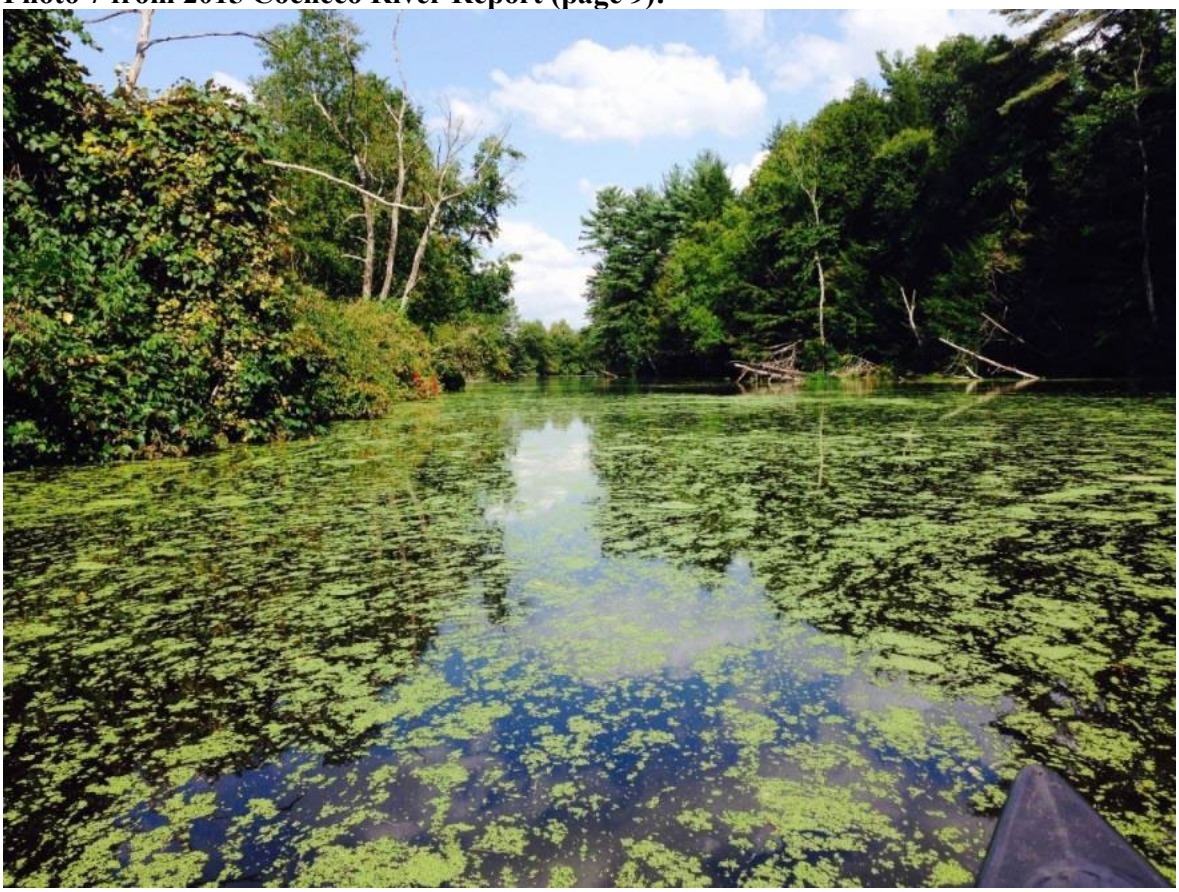

Photo D-3 from 2019 Report (Appendix D page 107)

[4] Technical Memorandum: Visual Algal Survey of the Cocheco River, Brown and Caldwell, May 2016. 2016 and 2017 Field Investigations of the Cocheco River and Regional Waters, Brown and Caldwell, May 2017 and April 2018.

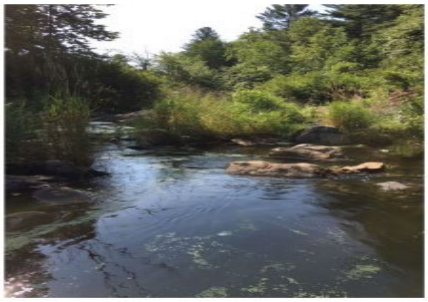


Photo D-5 from 2019 Report (Appendix D page 111)




For further explanation of other key factors listed above and other considerations in the derivation of the limit, see Fact Sheet pages 22-33. The subsection titled "Site-Specific Analysis" begins on Fact Sheet page 25. Also See Response 33, below.

In light of the extensive documentation of eutrophication-related impacts as detailed in the Fact Sheet, it is prudent for EPA to adopt a reasonably conservative, or protective, approach in aquatic systems at risk of cultural eutrophication. In order for a river to be restored to health, the eutrophic cycle must be broken by limiting the amount of excessive phosphorus available for uptake by aquatic plants and to allow whatever existing phosphorus has accumulated in the sediments in the past to gradually flush out of the system over time. Once the cycle is underway, it is much more difficult and costly to restore designated uses in the receiving waters. Thus, from a pollution management standpoint, a preventative approach makes sense in the context of nutrient permitting. This is particularly important since Rochester discharges upstream of a segment containing a riverine impoundment (*i.e.*, NHIMP600030608-02) caused by a dam (*i.e.*, the Watson Dam) where the river slows and significant phosphorus accumulation in the sediment and/or uptake from the sediment is more likely. This approach is entirely consistent with EPA's nutrient technical guidance, as well as case law in the First Circuit.

The principal site-specific factor that the commenter relies on is "light limitations imposed by the combination of shade and natural color do not prevent algal growth." Although EPA agrees tree canopy is one of several applicable site-specific factors to consider and that there are stretches of the receiving water that do enjoy such natural protections from algal growth, this is not the case for the entirety of the receiving water as evident by, for example, the extensive algal growth documented in data submitted by the Permittee. *See* Fact Sheet at 22-33. The presence of an adequate canopy to protect against eutrophication in certain stretches of the receiving water, of course, does not protect aquatic life or recreational users of the *entire* waterbody, who cannot reasonably be asked to use only those segments and thus not be exposed to segments suffering from eutrophication. Importantly, EPA must protect designated uses in *all* downstream river segments. As stated in EPA's Gold Book at 28-5, one of the basic goals of a phosphorus limit for "flowing waters" is "to protect the downstream receiving waterway, *regardless of its proximity in linear distance.* It is evident that a portion of that phosphorus that enters a stream or other flowing waterway will eventually reach a receiving lake or estuary either as a component of the fluid mass, or as floating organic materials that may drift just above the stream's bed or float on its water's surface." (Emphasis added). This dynamic is evident in the downstream waters of the discharge, as documented in the Fact Sheet, for example by the documentation of elevated levels of macrophytes, luxuriant algal growth and/or pervasive duckweed growth in the "several extremely slow moving mini-segments" near the Watson Road dam. Fact Sheet at 26.

EPA notes that this conclusion of "reasonable potential" based on 40 C.F.R. § 122.44(d)(vi), necessitates that EPA "must establish effluent limits" that EPA "demonstrates will attain and maintain applicable narrative water quality criteria and will fully protect the designated use" as mentioned in subpart (A). As demonstrated in the

Fact Sheet and in this Response to Comments, EPA has followed the proper procedures and acted with a reasonable basis in setting the phosphorus limit.

Third, the commenter asserts that the technological upgrades needed to comply with the permit limits would create a financial burden for the city and/or ratepayers. EPA acknowledges that the City will likely need to invest in a facility upgrade to achieve the limit and that this upgrade is likely to create a financial burden for the City and/or ratepayers. As described below, the financial burden is an appropriate consideration for the development of a compliance schedule, not for the development of the effluent limit. Although EPA appreciates the commenter's financial concerns, it is well-established that CWA section 301(b)(1)(C) requires effluent limits to meet water quality standards, without exception for cost or technical feasibility. *Upper Blackstone Water Pollution Abatement Dist. v. EPA*, 690 F.3d 9, 33 (1st Cir. 2012), *cert. denied*, 569 U.S. 972 (2013) ("…cost considerations may not be considered by the EPA in the setting of permit limits to assure compliance with state water quality standards."); *In re City of Fayetteville, Ark.*, 2 E.A.D. 594, 600-601 (CJO 1988) ("The meaning of [CWA § 301(b)(1)(C)] is plain and straightforward. It requires unequivocal compliance with applicable water quality standards, and does not make any exceptions for cost or technological feasibility."), *aff'd sub nom. Arkansas v. Oklahoma*, 503 U.S. 91 (1992); *See also, e.g., In re Scituate Wastewater Treatment Plant,* 12 E.A.D. 708, 734 (EAB 2006). The financial analysis provided by the commenter is relevant to the development of a compliance schedule, which, as described below in Response 3, EPA is not including as a condition of the permit.[5] Rather, as also discussed in Response 3 below, EPA expects an administrative order to be developed following the issuance of the Final Permit that will include a schedule with sufficient time for the City to make the necessary investment in the facility upgrade; the commenter's financial analysis will likely be relevant to the development of that schedule. Moreover, EPA notes that due to the accumulative nature of phosphorus-driven eutrophication, the longer time that the City continues to discharge at these elevated levels the longer and costlier it will be to ultimately remediate the issue. Thus, resources "saved" in the short-term by not addressing the issue at this time may be borne by the City at an ever-increasing greater cost in the future.

Fourth, the commenter explains that NH is in the process of updating its water quality regulations at Env-Wq 1705, and that because these regulatory changes will "fundamentally change the approach [for] nutrient permitting", the commenter requests that "EPA incorporate that changed approach into the permitting process for Rochester." As the Environmental Appeals Board recently affirmed in *City of Keene,* "the Region is *required* to devise effluent limits to comply with existing state water quality standards, even if those state standards may be revised at some point in the future…" *Keene* at 752 (emphasis in original); *See also id.* at 726 ("An existing EPA-approved water quality standard remains in effect until EPA approves a change or promulgates a more stringent

[5] *See Clean Water Act Financial Capability Assessment Guidance*, EPA Office of Water (February 2023) at 5 ("The [Financial Capability Assessment] does not remove obligations to comply with the CWA nor does it reduce regulatory requirements. Rather, EPA uses the FCA Guidance to assess a community's financial capability for the purpose of developing a reasonable implementation schedule for necessary improvements that will not burden the community.")

water quality standard."); *See also* 40 C.F.R. § 131.21(e). Additionally, whether the State will propose a new water quality standard and what the new standard, if any, would be is far from certain. The efforts to develop such a standard date back to at least 2009, notably with no final standard having been promulgated and approved by EPA. *See* https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-09-12.pdf . EPA conferred with its colleagues at NHDES and understands there are ongoing efforts to develop a new draft phosphorus standard as part of its current triennial (once every three year) review of its WQS. The commenter offers speculation regarding a future limit, but it would be inappropriate for EPA to rely on such speculation. Congress intended for EPA to revisit and reissue NPDES permits at regular intervals, which is why permit terms are not to exceed five years. As EPA has noted, this permit is long expired, and EPA is in the process of clearing a very substantial permit backlog. EPA cannot indefinitely forestall permit issuance pending State promulgation and EPA-approval of a possible new Phosphorus standard, especially where such efforts have been futile for over a decade now. Under law, EPA cannot fail to include a permit effluent limitation that it has determined to be necessary under Section 301, as that provision of the Act and implementing regulations requires EPA, among other things, to include limits in permits necessary to assure compliance with water quality standards.

Moreover, while the comment requests that EPA incorporate the State's purported "changed approach," there is in actuality no official changed approach for EPA to implement. The exact nature of any future, fully promulgated and EPA-approved State water quality standard for phosphorus is therefore unknown. Contrary to the commenter's assumption, it is entirely unclear whether any such new standard would result in a less or more stringent phosphorus limit for this specific discharge or whether it would allow for the site-specific study approach advocated for by the City. [6] Moreover, the State of New Hampshire's certification of this permit under Section 401 of the CWA demonstrates the State's agreement that this permit provision is appropriate under its water quality standards. Therefore, the conditions and limits in the Final Permit appropriately reflect the WQS currently in effect.

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[6] In 2018, New Hampshire DES submitted revised standards to EPA for review and approval, which included revisions to the dissolved oxygen criterion for Class B waters and to the river flow to be used when establishing nutrient effluent limits in wastewater. EPA responded on July 3, 2019, stating that DES must provide a scientific rationale(s) to support these changes before EPA could act on them. Letter from Ralph Abele, Chief, Water Quality Standards Section, to Ted Diers, DES Water Division, dated July 3, 2019. DES neither submitted a technical rationale in support of those revisions nor any new related revisions since that date. EPA's understanding is that DES is exploring alternative options. Notably, in a DES presentation dated October 11, 2018, DES laid out various alternative approaches to nutrient standards, including a slide which projected potential phosphorus limits for the Rochester facility based on two potential alternative approaches, both of which would have been *more stringent* than the final limit in this Permit. *See Alternatives to 7Q10 for Nutrient Permitting*, available at https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/20181011-7q10-alternatives_0.pdf. EPA is aware of proposed legislation that would remove the provision from NH WQS at RSA 485-A:8 which prohibits the DES Commissioner from calculating nutrient discharge limits based on 7Q10 flow. New Hampshire Senate Bill 60, available at https://legiscan.com/NH/drafts/SB60/2023. The passage of this legislation, should it occur, would not alter EPA's approach because EPA did not approve the language proposed to be removed, thus it was never in effect for federal Clean Water Act purposes. EPA understands NHDES continues to evaluate possible alternative approaches. *See Flow for Nutrient Permitting* Presentation, July 25, 2019, available at https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/20190725-wqsac-prm-flow-nut.pdf

Fifth, the commenter requests that EPA use an alternative approach in establishing a phosphorus limit that would entail the development and application of a site-specific instream phosphorus target, consistent with the commenter's understanding of NHDES's proposed modifications to the State WQS. If EPA were unable to derive a water quality target based on current information, then it would be reasonable to allow time for the development and application of a site-specific instream target as suggested in the comment. However, EPA has already conducted a site-specific analysis, as discussed above and in the Fact Sheet, and is confident that the Gold Book target of 0.1 mg/L is applicable and results in a limit of 0.12 mg/L to protect WQS. Therefore, the Final Permit must contain a limit of 0.12 mg/L based on current information and currently effective State WQS. The possibility of an alternate instream target being developed based on a possible modification to State WQS in the future does not alleviate EPA of its requirement to protect current WQS in this permit reissuance.

Regarding the request to conduct a pilot demonstration study for an alternate treatment process, the Permittee may conduct such a study at any time and does not need authorization through any permit condition. Given that the phosphorus limit proposed in the permit is a water quality-based effluent limit (not a technology-based effluent limit) and is achievable through readily available treatment technologies[7], the results of the proposed pilot study would not have any impact on the permit limit. EPA acknowledges that the result of the pilot study may be useful to the Permittee in designing a facility upgrade to meet the new phosphorus limit, but EPA does not consider this to be a valid justification for any delay in the permit reissuance nor any change to the permit limit or any other provision of the Final Permit. This reasonably expeditious approach is appropriate given evidence on the record that the cycle of eutrophication is already underway, underscoring the need to act with dispatch to remedy an ongoing pollution problem.

EPA further notes that in 2015 it agreed to allow the City time to conduct a "phosphorus optimization pilot study" prior to issuance of a new permit with a numeric phosphorous limit.[8] Given the passage of nearly a decade since then and the continued existence of phosphorus-driven eutrophication, EPA does not view it as reasonable or appropriate to delay the imposition of a protective phosphorus limit to allow further time for such studies. Under both federal court and EAB case law, it is clear that the Region has the obligation to establish water-quality based effluent limitations based on existing narrative standards where it determines there is reasonable potential to violate such standards. *See, e.g., Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013). Finally, EPA notes that "[t]he

[7] In Region 1, EPA has issued several NPDES permits containing total phosphorus limits equal to or more stringent than the Permittee's. For example, in Massachusetts, the City of Westborough Permit (#MA0100412) and the City of Marlborough Permit (#MA0100498) each have a total phosphorus effluent limit of 0.10 mg/L that they have routinely achieved.

[8] *See* Letter from Peter Nourse, Director of Public Works, City of Rochester, to Ken Moraff, EPA Region 1 Director of Office of Ecosytem Protection, *Re: Rochester, New Hampshire NPDES Permit*, dated January 22, 2015; Letter from Ken Moraff, EPA Region 1 Director of Office of Ecosytem Protection to Peter Nourse, Director of Public Works, City of Rochester, *Re: City of Rochester Draft NPDES Permit*, dated February 6, 2015.

decision whether to include a special condition in an NPDES permit falls within the scope of the permit issuer's discretion." *In re Keene*, 18 E.A.D. 720, 758 (EAB 2022). Here, EPA has cogently explained the rationale for opting against the inclusion of such a condition.

Regarding the GBTN GP, EPA provides some clarification and correction regarding the assertions made in the comment. The GBTN GP did not include "interim limits" in order to allow for a nutrient target to be determined. Rather, it included a load-based target (100 kg/ha-yr) and effluent limits that allocated the load among the various WWTFs, stormwater point sources and other non-point sources in order to reach that target.[9] The load allocated to the WWTFs were established as final effluent limits. Additionally, EPA notes that this approach was taken in the GBTN GP because EPA determined that the water quality problems in Great Bay could only be solved by addressing stormwater point sources and non-point sources which represent the majority of the nitrogen load. This is not the case for phosphorus in the Cocheco River, where the point source load particularly from the Rochester WWTF is responsible for the majority of the phosphorus load. Therefore, in this case, requiring total phosphorus reductions solely from the Rochester WWTF will result in a significant decrease in the overall phosphorus load to the Cocheco River and is expected to "attain and maintain applicable narrative water quality criteria and will fully protect the designated use."

Lastly, regarding the request for a compliance schedule, see Response 3.

No changes have been made to the Final Permit as a result of this comment. EPA's decision[10] to maintain the phosphorus limit in the Final Permit at this time (rather than

[9] As noted by the commenter in Comment 1, their existing Administrative Order (AO) has a Total Nitrogen interim limit of 262 lb/day until Oct 31, 2025. After that date, the Permittee must comply with the limit in the Great Bay Total Nitrogen General Permit of 198 lb/day.

[10] The decision to move forward with permit issuance is based on the best information reasonably available at the time of permit issuance is consistent with case law interpreting the CWA and APA. The CWA disfavors unnecessary delay in progressing toward the achievement of applicable water quality standards. Under Section 402 of the Act, all NPDES permits are limited to terms of five years, ensuring reevaluation and, if necessary, tightening of permit limitations at regular intervals. In enacting the CWA, Congress stated that its goal was to eliminate the discharge of pollutants by 1985, CWA § 101(a)(1), with limitations "necessary to meet water quality standards" to be achieved by July 1, 1977. CWA § 301(b)(1)(C). While these initial goals have not been entirely met, they must imbue EPA's regulatory efforts with a spirit of haste rather than hesitation. *Cf. Scott v. City of Hammond*, 741 F.2d 992, 998 (7th Cir. 1984) (criticizing continuing delay in implementing provision of the CWA designed to ensure achievement of water quality standards, given that "[t]he statutory time limits demonstrate that Congress anticipated that the entire process would take a relatively short time after the passage of the 1972 amendments"). While there will always be an irreducible amount of uncertainty regarding the precise impact of nutrients in a particular waterbody, EPA is nevertheless obligated to exercise its scientific expertise and apply its technical judgment based on the information it has at the time of permit reissuance, which under the Act is called for at regular intervals not to exceed five years. *See Upper Blackstone*, 690 F.3d at 22 ("[N]either the CWA nor EPA regulations permit the EPA to delay issuance of a new permit indefinitely until better science can be developed, even where there is some uncertainty in the existing data."); *Ethyl Corp. v. EPA,* 541 F.2d 1, 28 (D.C.Cir.1976) (en banc) ("[R]ecognizing ... the developing nature of [the field].... [t]he [EPA] Administrator may apply his expertise to draw conclusions from suspected, but not completely substantiated, relationships between facts, from trends among facts, from theoretical projections from imperfect data, from probative preliminary data not yet certifiable as 'fact,' and the like."). But

allow for delay based on further studies and/or regulation changes described in the comment) is also based on EPA's awareness that the cycle of cultural eutrophication appears to be ongoing, demanding reasonably expeditious action, consistent with EPA's precautionary approach to controlling the effects of nutrient pollution. Further, EPA notes that the City's NPDES permit was last issued in 1997 and this reissuance includes many updated requirements to protect water quality that should not be delayed.

Comment 3

Schedule for Compliance

In addition to the technical objections and proposed alternative method (including interim effluent limit and special condition) in Section 6 of Attachment 1, and mindful of the City's objections to the exceedingly low proposed phosphorus limit, should a final low Total Phosphorus effluent limit be imposed, the City specifically requests a compliance schedule in order to meet the new, low Total Phosphorus limit within the draft permit. If EPA's new limit is instituted immediately, the City of Rochester cannot comply with this term of the proposed permit which is a new requirement issued after July 1, 1977. This request is therefore consistent with Env-Wq 1701.03(a) which authorizes a compliance schedule to afford a permittee adequate time to comply with one or more permit conditions. The estimated cost of upgrading the facility to meet the proposed Total Phosphorus will cost the City in excess of $18.3 million dollars (not adjusted for current inflation, service and supply chain limits, increasing interest rates and other potential factors escalating costs for an upgrade), plus an estimated $300,000 per year increase in operation and maintenance costs. As set forth above and in Attachment 3, this upgrade will result in a medium burden upon the City's ratepayers. When combined with the medium burden, a lack of available staffing and other regulatory burdens created by this draft permit, a compliance schedule is needed to provide adequate time to comply. This schedule would work in parallel to the alternative approach (including an interim limit) proposed in Section 6 of Attachment 1.

The request for inclusion of a reasonable compliance schedule is consistent with 40 C.F.R. 122.47(a)(1) which provides time for the City to design, bid, seek grants and loan opportunities, fund, procure services and supplies, construct and complete the necessary upgrades. Consistent with 40 C.F.R. 122(a)(3) and Env-Wq 1701.3(b), the City proposes that EPA incorporate the following schedule of compliance for an upgrade of the City's facility to meet the phosphorus limit once the permit becomes effective:

> Design – In parallel with the proposed special condition and monitoring proposed in Section 6 of Attachment 1, the City will complete a design of the wastewater facility upgrade within 48 months of the effective date of the permit. The City will need an

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here, once again, what remains clear on the record before EPA is the fact that large amounts of phosphorus contribute to documented excursions of the state's narrative water quality standards for nutrients in the Cocheco River. *Miami–Dade County v. EPA,* 529 F.3d 1049, 1065 (11th Cir.2008) (holding that the "EPA is compelled to exercise its judgment in the face of scientific uncertainty unless that uncertainty is so profound that it precludes any reasoned judgment"). In light of this fact and applicable case law construing the Act, EPA is more than justified to proceed with the imposition of a reasonable permit effluent limit, designed to achieve significant reductions, for the primary discharger contributing to ongoing water quality excursions.

extended period to incorporate the results of the monitoring, but also perform technical review of best available technology and value engineering to determine the best upgrade design for the facility. third-party technical review and value engineering evaluations of any bids. The City will submit the necessary plans to EPA and NHDES for review and comment.

Funding – During the Design phase, the City will review potential funding mechanisms, including grants and loans, such as but not limited to Clean Water SRF funding opportunities and Bipartisan Infrastructure Law programs, for plant upgrades to meet the anticipated phosphorus limit, as well as other upgrades necessary for compliance with this permit (including back-up power generation, necessary monitoring equipment upgrades, etc.). Upon completion of the Design, the City anticipates applying for applicable loans and grants within 12 months of the completion of the design.

Upon review and approval of the design plans by EPA and NHDES, the City shall submit the plans for public bid and solicitation. Given that the City intends to seek either state or Federal funding to assist with this project, additional approvals may be anticipated before bidding and award of the project. The City also anticipates, given the potential cost of the upgrades, hiring a third-party for technical review of the bids. The City therefore expects the bidding and procurement to be completed over a twenty-four (24) month period.

Upon completion of bidding and award of a contract, the City anticipates (current inflation and anticipated supply chain challenges) a construction schedule of forty-eight (48) months to complete the necessary phosphorus related facility upgrades. The City will provide annual progress reports to EPA during the interim construction phase of the project, consistent with 40 C.F.R. 122.47(a)3)(ii).

This extended schedule of compliance will also allow the City to complete construction of its dewatering facility and planned dewatering of its sludge from its lagoons over the next five years. Once the sludge dewatering project is completed, the City expects that it will reduce the amount of phosphorus levels in the WWTF's effluent.

Upon substantial completion of construction of the facility upgrades (including additional back-up power), the City anticipates a twelve (12) month period to complete bringing the facility online and monitoring the effectiveness of the facility upgrades.

This schedule of compliance is designed to ensure compliance with the proposed phosphorus limits after the effective date of the permit because the City cannot meet the effluent limits as proposed without an upgrade. Placing the City in immediate non-compliance is inconsistent with the intent of the Clean Water Act and provisions of 40 C.F.R. s. 122.47 [1] and Env-Wq 1701.03.

The financial burden given current inflation, staffing challenges, supply shortages, limited availability of necessary chemicals for treatment, other regulatory burdens from MS4 and the Nitrogen General Permit obligations, present challenges to the City's ability to increase sewer rates burdened by these costs combined with anticipated pressure to limit sewer rate increases given current inflation. The combined increases caused by the anticipated debt service, increased

annual maintenance and chemical costs and other associated maintenance and operational costs associated with any upgrade would place a heavy burden upon the City.

1. This request for inclusion of a schedule of compliance is also consistent with EPA's guidance entitled, "Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits," dated May 10, 2007. Specifically, while the City objects to the proposed phosphorus limit, if imposed on the City, EPA and NHDES should grant the proposed schedule of compliance given the factors and steps necessary for the City to install and modify treatment at the existing facility to achieve the new, low phosphorus limits proposed in this draft permit.

Response 3

As noted in the comment, EPA has the authority, at its discretion, to include a schedule of compliance leading to compliance with the CWA and applicable regulations in NPDES permits. *See* 40 C.F.R. §122.47(a)[11]. EPA notes that this provision states "[t]he permit *may*, *when appropriate*, specify a schedule of compliance leading to compliance with CWA and regulations." (emphases added). While this provision gives EPA the authority to establish compliance schedules in an NPDES permit, it does not require EPA to establish such a schedule nor does it require that such a schedule be included in an NPDES permit. The guidance document referenced by the commenter in fact emphasizes that compliance schedules are discretionary by laying out principles that are applicable to determining whether a compliance schedule would be consistent with the requirements of the Clean Water Act. The state regulations referenced by the commenter indicate that, unless an exception applies, permits may not contain compliance schedules. *See* Env-Wq 1701.03 (An NPDES permit "shall not" specify a compliance schedule "unless" two identified conditions are met.) Finally, and more generally speaking, "[t]he decision whether to include a special condition in an NPDES permit falls within the scope of the permit issuer's discretion." *Keene*, 18 E.A.D. at 758.

In this case, EPA determined that it would be more appropriate for a phosphorus compliance schedule to be memorialized in an administrative order, which would be issued after the limits in the Final Permit become effective, rather than as a permit condition. See Fact Sheet at 33. *See also In re Springfield Water and Sewer Commission*, 18 E.A.D. 430, 475 (EAB 2021) (it is not reviewable error for EPA to "agree to a permit applicant's request for relief but [to] decide[] on a different vehicle than the one proposed to provide that relief.") EPA's determination is based, in part, on the fact that Rochester is already under an administrative order to meet its nitrogen limit under the GBTN GP. EPA finds it would be most effective to coordinate a proposed second (*i.e.*, separate) schedule of compliance for phosphorus with EPA's Enforcement and Compliance Assurance Division (ECAD), because ECAD is most familiar with the permittee's upcoming obligations under the nitrogen administrative order, and thus is best situated to evaluate the appropriateness and feasibility of the deadlines proposed in the commenter's requested phosphorus compliance schedule in light of these existing obligations. As one example, if it is the case that compliance with either the nitrogen limit or the phosphorus limit (or both) would require upgrades to the facility, ECAD is well-situated to evaluate proposals for the relative timing of any such upgrades. ECAD is also best situated, in this

[11] The comment in one instance references "40 C.F.R. 122(a)(3)." EPA assumes the comment intended to cite 40 C.F.R. § 122.47(a)(3).

instance, to evaluate the financial analysis and issues identified in the comment. The comment describes the financial burden of complying with the phosphorus limit in the context of the permittee's other financial obligations, including the Nitrogen General Permit obligations. Thus, it is logical and administratively efficient in this instance for ECAD to evaluate the commenter's financial analysis and other pertinent information in light of the existing nitrogen administrative order and any applicable guidance. Response 2, above, also discusses the commenter's expressed financial concerns.

EPA's determination is also based on the fact that incorporating a compliance schedule in an administrative order allows for more flexibility should it need to be revised, whereas changes cannot be made as easily to a compliance schedule that is integrated into a permit without a major permit modification.

Finally, EPA disagrees with the commenter's assertion that "placing the city in immediate non-compliance" is inconsistent with the intent of the Clean Water Act and applicable regulations. In fact, it would undermine the Clean Water Act to impose permit terms derived primarily for ease of compliance rather than for the intentions identified by the Act. The intent of the Clean Water Act and its implementing regulations is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251.[12] The limits and other terms of this permit further this objective. EPA likewise disagrees with the commenter's assertion that "placing the city in immediate non-compliance" is inconsistent with the state and federal regulations governing compliance schedules. As discussed above in this response, these regulations emphasize that a compliance schedule is not required in any instance, but rather a permit writer may include one if certain criteria are satisfied.

For these reasons, a compliance schedule has not been included in the permit and, once the permit becomes effective, the Permittee may contact EPA's Enforcement and Compliance Assurance Division (ECAD) to discuss the administrative order process further.

Comment 4

Permit Pg 17, Part 1.G.2 – Ambient Phosphorus Monitoring – The City requests this provision be deleted given the proposed alternative approach offered by the City in the technical comments from Brown & Caldwell incorporated in Attachment 1.

Response 4

EPA notes that this ambient monitoring requirement is included to provide EPA with sufficient information to characterize the Cocheco River upstream of Rochester's discharge with respect to phosphorus. The results of the ambient phosphorus monitoring may be used by EPA in the next permit reissuance in determining whether the phosphorus limit is sufficiently stringent so as to ensure adequate protection of the quality of the downstream receiving water.

[12] Additionally, EPA notes that it may be the case that the permittee's proposed compliance schedule, subject to review by EPA's ECAD as described in this Response, does not meet the regulatory requirement that schedules of compliance "shall require compliance as soon as possible." 40 C.F.R. § 122.47(a)(1).

The Draft Permit requires the monitoring of the receiving water for total phosphorus once per month, from April through October, every other year. EPA does not consider this requirement to be burdensome or otherwise infeasible, and this requirement remains unchanged in the Final Permit.

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See* CWA § 308(a)(A), 33 U.S.C. § 1318(a)(A) (specifying that permittees must provide records, reports, and other information EPA reasonably requires); CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (requiring permittees to provide data and other information EPA deems appropriate); 40 CFR § 122.41(h) (permittees shall furnish "any information" needed to determine permit compliance); 40 CFR § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); *see also, e.g., In re City of Moscow*, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has "broad authority" to impose information-gathering requirements on permittees); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers "broad authority" on permit issuers to require monitoring and information from permittees). Additionally, the Environmental Appeals Board has held that "for a petitioner to raise a material issue of fact as to whether an information gathering requirement in a permit is unreasonable and therefore exceeds the Agency's authority under Section 308(a), a petitioner must cite evidence sufficient to support a finding that there is no basis in fact for the Agency to require information in the first place." *In re City of Port St. Joe*, 7 E.A.D. 275, 310 (EAB 1997). The commenter, here, has not done so.

EPA's response to the alternative approach proposed by the City may be found in Response 38.

Comment 5

Permit Fact Sheet Pg 6, Part 2.2.3; Pg 7, Part 2.2.4; Pg 8, Part 2.25; Pg 13, Part 3.1.1 The City incorporates the technical responses and objections of its consultant, Brown & Caldwell found in Attachment 1. The City requests that NHDES provide a statement to the extent that effluent limits in the Draft Permit can be made less stringent without violating the requirements of Env-Wq 1700, et seq., in light of the proposed change in regulations for nutrient permitting and the suggested alternatives provided by the City's consultant, Brown & Caldwell found in Attachment 1.

The City requests that EPA review the technical comments and alternative approach provided by Brown & Caldwell in Attachment 1. Please note that the City may encounter temporarily elevated discharges of legacy total phosphorus during removal of sludge from the lagoons and de-watered once the new biosolids facility is completed. This work is anticipated to be completed over a five-year period. The City offers this point in support of the schedule for compliance proposed above, as the schedule should allow for completion of the sludge removal and dewatering discussed in Section 3.0 (5), above. The City has proposed a pilot chemical treatment process test to evaluate reduction of phosphorus, but also anticipates a reduction in total phosphorus discharges upon completion of the sludge removal and dewatering work.

Response 5

This comment requests a statement from NHDES regarding the impact proposed regulations may have on the permit's phosphorus limit. At this time, NHDES has not provided a statement to this effect. EPA cannot speculate on future permitting decisions based on hypothetical regulations.[13] Rather, as described in Response 2, EPA must issue permits consistent with all currently applicable federal and state regulations. *See Keene* at 720; *See also* 40 C.F.R. § 131.21(e). The comment also requests a statement from NHDES regarding the alternatives suggested in Attachment 1 to Brown & Caldwell's comment, and additionally requests that EPA review these alternatives. EPA has responded to the technical comments and alternative approach provided by Brown & Caldwell in Responses 31 through 41, below.

EPA has responded to this commenter's request for a compliance schedule in Response 3, above. The commenter's note that the compliance schedule should allow for completion of sludge removal and dewatering is information that the commenter may wish to relay to EPA's Enforcement and Compliance Assurance Division (ECAD) as outlined in Response 3.

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

Comment 6

Rolling Average Effluent Flow

Permit Pg 2, Part I.A.1; Permit Pg 5, Part I.A.1 - Footnote 5:

The City objects to the inclusion of a 5.03 MGD rolling average flow limit as unnecessary given the 80% flow notification requirements in Part 1.C.6(f) and Part 1.I.6, which ensure compliance for any prolonged capacity exceedances for the facility. The City also objects to the rolling average effluent flow limit by EPA because EPA is using flow as a surrogate for pollutants and EPA lacks authority to regulate flow as a pollutant. See Virginia Department of Transportation et al v. United States Environmental Protection Agency et al., case number 1:12-cv-00775. In addition, while EPA may utilize flow based upon design flow for its calculation of reasonable potential for phosphorus and other water quality-based effluent limitations, the inclusion of the design flow limit is not necessary to preserve the integrity of the reasonable potential and effluent limitation determinations.[2] The City's effluent flows are limited by other provisions of this permit including the requirements to reduce Infiltration/Inflow and report any exceedances of 80% flow over a three (3) month period which requires reporting and affirmative steps by the City. See Permit Pg 22, Part 1.I.8. Should EPA nevertheless persist in maintaining this condition despite it being unnecessary and potentially unlawful, the City requests that EPA add language to the permit to the effect that: "The facility shall not be subject to non-compliance for individual exceedances of the 5.03 MGD limit due to isolated wet weather events."

[13] Additionally, "it is well established that [EPA] may not 'look behind' a State certification issued pursuant to [CWA § 401] for the purpose of relaxing a requirement of that certification." *In re Gen. Elec. Co*., 4 E.A.D. 468, 470-71 (EAB 1993) (citations omitted).

2. See In Re City of Lowell, NPDES Appeal No. 19-03, 2020 WL 3629979 at 37 (June 29, 2020).

Response 6

This comment raises several objections to the proposed effluent flow limits in the Draft Permit. First, the comment notes that this limit is unnecessary given the 80% flow notification requirements in the permit, which ensure compliance for any prolonged capacity exceedances for the facility. Second, the comment notes that flow is being used as a surrogate for pollutants and EPA lacks authority to regulate flow as a pollutant. Third, the comment notes that the inclusion of the design flow limit is not necessary to preserve the integrity of the reasonable potential and effluent limitation determinations. Fourth, the comment notes that the City's effluent flows are limited by other provisions of this permit including the requirements to reduce Infiltration/Inflow and report any exceedances of 80% flow over a three (3) month period which requires reporting and affirmative steps by the City. Fifth, if EPA maintains this limit in the Final Permit, the City requests the following language be added: "The facility shall not be subject to non-compliance for individual exceedances of the 5.03MGD limit due to isolated wet weather events."

First, EPA notes that a NPDES permit allows a facility to discharge wastewater in accordance with the limitations set forth in the permit. In this case, the Rochester WWTF may discharge effluent flow up to the flow limit as an annual average flow. EPA acknowledges that the effluent flow at this facility varies throughout the year and is likely to be higher under wet weather conditions due to the I/I present in the collection system. However, the permit allows the facility to discharge up to the flow limit under all instream conditions. Therefore, EPA has chosen this as the "worst case" condition to evaluate the need to establish effluent limitations because this is what the permit allows. Establishing water quality-based effluent limitations that are sufficiently protective to meet in-stream water quality criteria requires EPA to account for both wastewater effluent and receiving water flows under critical conditions, as EPA explained in the Fact Sheet. Conditions imposed by EPA to limit wastewater effluent flows from the facility for the permit term are designed to assure that the facility's pollutant discharges do not result in excursions above in-stream water quality criteria, in accordance with section 301(b)(1)(C) of the Act and implementing regulations. 40 C.F.R. §§ 122.4(d), 122.44(d)(1), 122.44(d)(1)(vii)(A), 122.44(d)(5).

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

EPA acknowledges that effluent flow volumes can vary in the short-term but EPA must make a reasonable estimate of worst-case effluent flow volume in order to evaluate appropriate limits as discussed above. Again, EPA considers that the design flow of the facility is the appropriate effluent flow value for this analysis.

Most trenchantly, 40 CFR § 122.4(d) prohibits issuance of an NPDES permit "[w]hen the imposition of conditions cannot ensure [emphasis added] compliance with the applicable water quality requirements of all affected States." Section 122.44(d)(1) is similarly broad in scope and obligates the Region to include in NPDES permits "any requirements…necessary to: (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality." "Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. Arkansas v. Oklahoma, 503 U.S. 91, 105 (1992). Under CWA section 402, EPA may issue NPDES permits "for the discharge of any pollutant, or combination of pollutants" if the permit conditions assure that the discharge complies with certain requirements, including those of section 301 of the CWA. The Act defines "pollutant" to mean, inter alia, "municipal . . . waste" and "sewage…discharged into water." CWA § 502(6).

To the extent the comment is suggesting that the effluent flow limit itself is not necessary because this effluent flow would not occur during periods of instream drought conditions, EPA disagrees. If there were no annual average flow limit then the facility could presumably increase its annual average flow significantly to the point that even the low variation of the flow is above the original design flow used in the development of the permit limits. Therefore, EPA asserts that it is the flow limit itself that prevents the flow from exceeding the design flow under worst case ambient conditions and is necessary as a backstop to protect WQS throughout the permit term.

In Part I.I.8 of the permit, NHDES requires the Permittee to plan for facility improvements as flows exceed 80% of the design flow capacity. The provisions states "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." This provision also works in conjunction with the effluent flow limit given that this provision, by itself, cannot ensure that the effluent flow does not exceed 100% design flow capacity during the permit term. Rather, this provision ensures that the facility "plans" for expected flow increases in a manner that will comply with the permit limits. Without the effluent flow limit, a Permittee could merely submit these facility improvement plans in accordance with this provision and then proceed to discharge above the design flow capacity of the facility. Such discharges would potentially cause or contribute to violations of water quality standards given that they exceed the assumptions applied in developing the permit limits. Additionally, such an increase in pollutant loading would potentially violate antidegradation provisions without the necessary antidegradation review. To avoid this, EPA must include an effluent flow limit in the permit and if an increase in flow above the design flow capacity is necessary, EPA and NHDES may increase the effluent flow limit through a permit modification or permit reissuance based on the facility improvement

plans and other necessary information to ensure protection of all WQS, including antidegradation provisions, at the higher effluent flow.

Second, the commenter's citation to Virginia Department of Transportation et al v. United States Environmental Protection Agency et al pertains to a TMDL appealed by Virginia DOT and is not relevant to this proceeding. That case concerned EPA's approval of TMDLs under Section 303 of the Act, not the development of reasonable effluent limitations under separate and distinct authority governing the NPDES permitting process—Sections 301, 402 and implementing regulations.

Third, EPA has implemented Sections 301(b)(1)(C) and 402 of the Act through numerous regulations, which specify when the Region must include specific permit conditions, water quality-based effluent limitations or other requirements in NPDES permits. The wastewater effluent flow limit is a condition designed to ensure that WQS will be met. More specifically, EPA based both its reasonable potential calculations and its permit effluent limitations for individual pollutants on a presumed maximum wastewater effluent discharge from the facility. EPA's reasonable potential regulations require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," 40 C.F.R. § 122.44(d)(1)(ii), which is a function of both the wastewater effluent flow and receiving water flow. EPA guidance directs that this reasonable potential analysis be based on critical conditions. EPA, accordingly, is authorized to carry out its reasonable potential analysis by presuming that a plant is operating at its design flow during critical instream conditions (i.e., 7Q10) when assessing reasonable potential.

Fourth, Part I.C.3 of the permit says "The Permittee a 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." This provision works in conjunction with the effluent flow limit given that this provision, by itself, cannot ensure that the effluent flow does not exceed 100% design flow capacity during the permit term. Rather, this provision is designed to ensure I/I does not cause a violation of the permit limits, including the annual average effluent flow limit, to protect water quality standards.

Fifth, the City requests the following language be added if EPA maintains the flow limit: "The facility shall not be subject to non-compliance for individual exceedances of the 5.03 MGD limit due to isolated wet weather events." EPA notes that higher daily flows (or even monthly average flows) may occur well above 5.03 MGD seasonally due to storm events and/or elevated levels of I/I and these isolated events would not be expected to result in an exceedance of the 12-month rolling average flow limit. As noted in the Fact Sheet, the imposition of a 12-month rolling average flow limit accounts for the month-to-month variation in flows, including during periods of wet weather. Although the flow of 5.03 MGD was exceeded twice during the review period when measured as a *monthly average* [5.358 MGD (April 2017) and 5.256 MGD (November 2018)], there were no cases where the 12-month rolling average of 5.03 MGD was exceeded, with values ranging from 2.72 to 3.52 MGD during the five-year review period. Presumably

there were many isolated wet weather events over this recent five-year period, yet the rolling annual average flow never exceeded 3.52 MGD.

EPA confirms that the effluent flow limit is necessary and appropriate for the reasons cited above, and this comment does not result in any change to the Final Permit.

Comment 7

Staffing

As a general comment on the draft permit and as noted in City Manager Cox' cover letter, the City currently has vacancies in two (2) wastewater positions (out of 8 total positions) and has had difficulty recruiting and retaining staff. The additional obligations of the industrial pretreatment program, when coupled with the mandatory CMOM obligations, increased monitoring resulting from this draft permit and existing ongoing compliance activities related to the City's wastewater collection system will require the City to add approximately six (6) additional full time equivalent positions. Given the regional and nation-wide challenges of recruiting, training and retaining qualified staff, the City includes comments related to various draft permit provisions which will require additional time for development, implementation and enforcement to ensure compliance with these requirements. The City of Portsmouth recently noted in its public comments in response to the draft NPDES permit for its Pease facility that their staffing is down 25%. The staffing challenges also support the City's request for a compliance schedule as discussed in Section 3.0 above.

Also as discussed in City Manager Cox' cover letter, EPA previously provided funding during the 1970's and 1980's to establish wastewater collection training programs that were housed in local vocational schools, community colleges or universities throughout New England and beyond. Recognizing a lack of adequately trained wastewater operators, the Administration implemented training programs called the "Onsite Technical Assistance Training Program"[3] working in collaboration with the states.

The Clean Water Act specifically provides a mechanism for EPA to make grants to or contract with institutions of higher learning for developing programs to prepare undergraduate students to enter an occupation involving the design, operation and maintenance of treatment works.[4] The federal government actively established and promoted these training programs through the early and mid-1970's; however, by the late 1980's the federal government phased out its role with these programs, transitioning that obligation to the individual state programs. EPA's focus then shifted to supporting the state self-sufficient programs by assisting in developing training materials.

The industry is once again facing shortages of trained personnel to replace the aging workforce in these facilities. Given the recent passage of the American Rescue Plan (ARPA), the Bipartisan Infrastructure Law (BIL), and other federal monies being directed to EPA, the City requests that EPA consider utilizing a portion of those funds to revitalize the Technical Assistance Training Program to support local vocational schools, community colleges or universities to establish EPA-funded training programs on a regional scale that will assist cities and towns throughout

Region 1. This will not only promote employment within this sector, but also provide opportunities for well-paying, meaningful careers.

3. See 33 U.S.C.A. §1254
4. See 33 U.S.C.A. §1259(a) – Training grants and contracts – "(a) The Administrator is authorized to make grants to or contracts with institutions of higher education, or combinations of such institutions, to assist them in planning, developing, strengthening, improving, or carrying out programs or projects for the preparation of undergraduate students to enter an occupation which involves the design, operation, and maintenance of treatment works, and other facilities whose purpose is water quality control….".

Response 7

EPA acknowledges that the wastewater industry is facing general staffing shortages. It remains the obligation of EPA, however, to impose appropriate conditions in an NPDES permit to implement the objectives of the Clean Water Act.

EPA acknowledges the request related to recent appropriations. The expenditure of appropriated funds for the Technical Assistance Training Program is beyond the scope of an NPDES permit proceeding. For informational purposes: The Technical Assistance Training Program referenced by the commenter is an annual EPA funding program which focuses on training and technical assistance to water and wastewater system staff and private well owners. This program supports operational and managerial practices that continue efforts to protect public health and promote sustainability in small communities, which are defined in this program as community and non-community water systems serving a population of less than 10,000 persons. The next grant cycle for this program will be announced in late Fall 2022. In the meantime, the City can contact the New England Interstate Water Pollution Control Council (NEIWPCC) which hosts trainings for the wastewater and drinking water facilities, including operator trainings. See https://neiwpcc.org/learning-center/massachusetts-wastewater-operator-training-certification for more information.

Comment 8

Ammonia

Permit Page 2, Part I.A.1 – Ammonia Nitrogen (May 1 – October 31) 2.0 mg/L and Ammonia Nitrogen (November 1 – April 30) 6.3 mg/L; Permit Fact Sheet Pg 20 – 21, Part 5.1.8; Permit Fact Sheet Page 21, Part 5.1.8:

For the reasons set forth in Brown and Caldwell's technical comments (Attachment 1), the City objects to these lower Ammonia Nitrogen limits. There is no reasonable potential that the existing limits would cause exceedance of acute criteria. The existing winter monthly limit of 7.7 mg/L is protective, and the appropriate summer monthly limit should be 2.8 mg/L instead of 2.0 mg/L.

The City also objects to the inclusion of reference to Atlantic salmon in the vicinity of the City's WWTF in the second paragraph on page 21 of the Fact Sheet. There is no fish ladder at the Watson Dam and therefore no way for Atlantic salmon to swim upstream beyond the dam and EPA should not assume that salmonids could be present in the receiving water segment at the

WWTF. Finally, the City objects to the expansion of the warm weather season to include May for Ammonia limits and other proposed effluent limits including Phosphorus (expanded to April).

Response 8

This comment refers to the technical comment (see Comment 40), which states that the 30-day 10-year low flow (30Q10) should be used to calculate the ammonia limit instead of the 7Q10 (7-day, 10-year low flow). EPA disagrees and notes that the currently effective New Hampshire Water Quality Standards, at Env. Wq. 1705.02 (d), state "[f]or rivers and streams, the 7Q10 flow shall be used to apply aquatic life criteria and human health criteria for non-carcinogens.". Env. Wq. 1700 contains no mention of the 30Q10 low flow for calculating permit limits or otherwise. EPA must issue permits consistent with all currently applicable federal and state regulations. *See Keene* at 720; *See also* 40 C.F.R. § 131.21(e).

The technical comment goes on to claim that Fact Sheet Appendix B contains incorrect calculations of "reasonable potential" and that the limit calculations should consider effluent variability. The term "reasonable potential" in 40 C.F.R. § 122.44(d)(1)(i) is an indication of whether an effluent limit is needed for a given pollutant to protect water quality standards. Since there are water-quality based ammonia limits in the 1997 Permit, it has already been determined that there is reasonable potential for this discharge to cause or contribute to a violation of water quality standards with respect to ammonia and ammonia limits are necessary. Therefore, in this permit reissuance it is more appropriate to determine whether the current limits continue to be protective of water quality standards under updated environmental conditions or if they need to be lowered to continue to be protective. See Appendix B of the Fact Sheet for a more detailed discussion.

In other words, using the effluent limit in the mass balance calculation is appropriate in order to determine whether the current limit is stringent enough to protect water quality standards under current conditions. In this case, it was demonstrated in Appendix B of the Fact Sheet that a discharge at the current permit limits (*i.e.*, 3.6 mg/L and 7.7 mg/L) would violate water quality standards under critical conditions while being in compliance with the permit. Therefore, EPA determined it is not appropriate to maintain those limits and it is appropriate to adjust them limit (to 2.0 mg/L and 6.3 mg/L) to ensure compliance with WQS under current conditions.

Regarding salmonids, salmonids comprise the Family Salmonidae, which includes salmon and trout, among others. Trout are both naturally present and actively stocked in the Cocheco River by the NH Department of Fish and Game. A fact sheet posted by NHDES states,

> The primary freshwater habitat on the Cocheco River is above the dams. The river supports a warm water finfish population that includes: American eel, Lamprey white sucker, yellow perch, Eastern chain pickerel, Eastern brook trout, small-mouth bass and common shiner. The New Hampshire Fish and Game Department has identified 17 fish species, including red river herring, using the ladder located

at Cocheco Falls in Dover. The Cocheco River is stocked in the spring-early summer at its upper reaches by the New Hampshire Fish and Game Department for rainbow and brook trout.

See https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/rl-23.pdf.

Regarding the comment that Atlantic salmon are not likely present in this stretch of the Cocheco River because of the lack of a fish ladder at Watson Dam, EPA notes that Atlantic salmon essential fish habitat is designated by NOAA Fisheries as occurring in the Cocheco River. (https://www.habitat.noaa.gov/apps/efhmapper/?page=page_3). Also see Table 31 on page 99 of this pdf Omnibus Essential Fish Habitat Amendment 2. EPA is required to consult with NOAA Fisheries when EFH is designated within the discharge area of an NPDES outfall. It is the designated habitat and not the species which is being consulted on. The term "essential fish habitat" means those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity." Adverse effects to EFH may result from actions occurring within EFH or outside of EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. The current or future presence of the identified fish species in the designated habitat is not a part of the required consultation between EPA and NOAA Fisheries.

Regarding the City's objection to the expansion of the warm weather season to include May for Ammonia limits and other proposed effluent limits including Phosphorus (expanded to April), the City did not provide a rationale for its objection. EPA disagrees with the comment and notes that our assumptions are based on critical conditions (increased temperature in May for ammonia, increased sunlight for TP in April) of the receiving water in those months. More specifically, EPA does not consider that the assumption of 5 degrees C in the winter months is the "worst case" in May and would not be adequately protective at times when the May temperature is higher. Similarly, EPA considers that the assumption that there is not adequate sunlight for eutrophication to occur in the winter months is not the "worst case" condition in April as sunlight increases significantly by that time. EPA notes that the warm weather periods during which these limits apply are reflected in many other permits and are warranted due to generally increasing water temperatures beginning in May as well levels of increased sunlight in April, both of which could cause or contribute to eutrophication.

Comment 9

WET Testing

Permit Pg 3, Part I.A.1; Permit Pg 4, Part 1.A.1:

For the reasons set forth in Brown and Caldwell's technical comments attached as Attachment 1, the City objects to the requirement to test effluent quality (hardness, ammonia, metals and TOC) in conjunction with WET testing and requests that it be removed. The City already monitors ammonia routinely and its limit is set to prevent toxicity to aquatic life. Given that there is no reasonable potential for metals toxicity, and the lack of water quality standards for hardness and

TOC, this testing would impose significant cost upon the City without a useful purpose. The City also questions EPA's authority to impose this chemical testing in the absence of reasonable potential.

The City also objects to the inclusion of ambient monitoring requirements (hardness, ammonia, metals, TOC, DOC, pH, temperature and total phosphorus). As with the chemical effluent monitoring associated with the WET test, this monitoring imposes a significant cost on the City without a useful purpose. Similarly, the City questions the EPA's authority to impose these monitoring requirements given that there is no reasonable potential for exceedances. While phosphorus monitoring may be beneficial, it should be conducted in accordance with the proposed phosphorus linkage study as discussed in Section 2.0 above.

The City requests that EPA modify the Whole Effluent Toxicity (WET) Testing measurement frequency to once per year given the City's limited historic exceedances during prior WET testing. The nature of the exceedances were related to diluent water toxicity, which is understood to not be considered a WET test violation. As noted above in Section 5.0, a reduction of measurement frequency would enable the City to deploy limited funds and staffing resources more effectively elsewhere in implementing this permit.

Response 9

The commenter objects to the chemical-specific monitoring required as part of the WET tests, which includes effluent and ambient monitoring for hardness, ammonia, metals and TOC. Additionally, the commenter objects to ambient monitoring for DOC, pH, temperature and total phosphorus, which are not part of the WET tests.

First, EPA notes that the monitoring required in the WET testing protocol is useful in at least two ways. First, these data may be used to determine the source of any toxic impacts. Second, this data may be used by EPA to characterize the discharge as well as the receiving water with respect to the various pollutants (such as cadmium, copper, zinc, ammonia, etc.) in determining whether the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards in future permitting proceedings. While these monitoring requirements have been included in the WET testing protocols for many years, EPA has recently required these results to be reported in each relevant DMR. This reporting does not represent separate monitoring requirements but merely requires the Permittee to report the results from the WET test into the DMR to facilitate access to the data by EPA and by the public through EPA's Enforcement and Compliance History Online (ECHO) tool[14].

Second, the ambient monitoring for DOC, pH, temperature and total phosphorus which are not part of the WET tests, may also be used to characterize the discharge in future permitting proceedings. Specifically, as noted in the Fact Sheet at 36, 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

[14] Accessible at: echo.epa.gov.

warranted in order to assess potential impacts of aluminum in the receiving water. Further, as noted in the Fact Sheet at 20, the freshwater ammonia criteria are dependent on pH and temperature so ambient monitoring for these parameters is warranted in order to assess potential impacts of ammonia in the receiving water under updated conditions at the time of the next permit reissuance. Finally, ambient phosphorus monitoring is likewise warranted to characterize the receiving water with respect to phosphorus in the next permit reissuance. As EPA is not including the phosphorus linkage study in the Final Permit, this ambient monitoring requirement is unchanged.

Regarding the comment about WET testing frequency, EPA notes that quarterly WET testing with 2 species is recommended by EPA's 1994 POTW Toxicity Policy[15] for WWTFs of this size which have dilution factor of less than 10, as described in the Fact Sheet. Due to the limited dilution and the WET limit violations noted in the Fact Sheet for both test species, EPA considers that the quarterly testing frequency in accordance with the policy is appropriate to ensure the discharge does not cause or contribute to toxicity in the receiving water.

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

Comment 10

General Limitations

Permit Pg 8, Part I.A.2:

The City objects to the inclusion of the following sentence: "The discharge shall not cause a violation of water quality standards for the receiving water." This provision is overly broad and should be removed. It is contrary to the Clean Water Act permit shield afforded to the City for regulated discharges and does not provide fair notice to the City of what it might do to comply.

The provision provides no opportunity for due process in the context of the City's right to know what limits EPA and NHDES believe are warranted, provides no opportunity to comment on the correctness of those limits and no right to appeal any such determination. This also deprives the

[15] EPA Region 1 POTW Toxicity Policy. EPA Region 1 March 2, 1994.

City of a schedule for compliance to come into compliance with a new or more stringent requirement.

The City notes recent permit changes by EPA Region 3 on March 27, 2019 to remove this language from State of West Virginia Permits. The City also references and incorporates the briefs from ongoing litigation in the 9th Circuit Court of Appeals, In re: City and County of San Francisco appealing an EAB decision on NPDES Appeal No. 20-01 (December 1, 2020) disputing this particular issue of generic prohibitions. The permit fact sheet provides no factual basis for this general prohibition, nor does the permit or fact sheet clearly state how the City must operate its facility to ensure which limits the discharges must meet to comply with this general prohibition, despite the specific applicable water quality-based effluent limitations set forth in the permit[5].

5. See In re: City and County of San Francisco, Brief of the Petitioner City and County of San Francisco, 2021 WL 3950988 at 30, C.A. No. 21-70282 (9th Cir., August 25, 2021).

Response 10

EPA disagrees with the commenter's assertion that the following provision is unlawful, unfair, and undermines the permit shield provision of the CWA: "The discharge shall not cause a violation of water quality standards of the receiving water." Draft Permit, Part I.A.2.

EPA's authority is not as narrowly constrained as the commenter implies. To the opposite, Section 402 of the Act authorizes EPA to issue an NPDES permit with conditions that ensure that the discharge will meet, among other things, the requirements of § 301 of the CWA. That provision includes § 301(b)(1)(c), which requires that a discharge shall achieve "...any more stringent limitation, including those necessary to meet water quality standards...established pursuant to any State law or regulation...." (emphasis added). Nowhere does the statute specify that EPA may only impose specific numeric effluent limitations to meet state water quality standards. EPA's regulations at 40 C.F.R. § 122.44(d)(1) state that each permit shall include "any requirements in addition to or more stringent than promulgated effluent limitations guidelines.... necessary to achieve water quality standards...." While § 122.44(d) does require "effluent limits" to be established when EPA determines that a particular pollutant has the reasonable potential to cause or contribute to an in-stream excursion above a water quality criterion, the regulations do not require that all "effluent limitations" necessary to meet water quality standards be expressed in terms of specific pollutant by pollutant numeric limitations. They may be narrative in form, including for example, when they are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes or intent of the CWA. See In re: City of Lowell, 18 E.A.D. at 175-186. As explained below, this requirement narratively tracks a key, and unambiguous, provision of the NH WQS.

The language included in Part I.A.2 is both lawful and consistent with EPA Region 1's past practice. Exactly the broad narrative language to which the commenter objects is included in all New Hampshire NPDES permits and was included in the City's previous

NPDES Permit (Part I.A.3.a of the 1997 Permit). EPA includes this provision to ensure full implementation of Sections 301(b)(1)(C) and 402 of the Clean Water Act. 33 U.S.C. §§ 1311(b)(1)(C), 1342. Northwest Envtl. Advocates v. City of Portland, 56 F.3d 979, 990 (9th Cir. 1995) (concluding that "the statutory language, legislative history, and case law authorize citizens to enforce permit conditions stated in terms of water quality standards"). Moreover, this provision is also consistent with requirements under New Hampshire state law and regulations. The NH Statute at Section 485-A:12 (III) states,

"No activity, including construction and operation of facilities, that requires certification under section 401 of the CWA and that may result in a discharge, as that term is applied under section 401 of the CWA, to surface waters of the state may commence unless the department certifies that any such discharge complies with the state surface water quality standards applicable to the classification for the receiving surface water body."

EPA's Draft Permit is consistent with, and derived from, this state requirement.

While the commenter may feel that the narrative prohibition is duplicative, EPA sees merit in including a more general, narrative, preventative permit provision that restates the commands of Section 301 and the implementing regulations at 40 C.F.R. §§ 122.4 and .44 to "ensure" compliance with quality standards, and that similarly mirrors the NH Statute at Section 485-A:12 (III). Doing so not only allows EPA to incorporate a legal assurance in the permit that water quality standards will be met, consistent with its obligations under sections 301 and 402 of the Act and NH WQS, but also will allow it to address, as necessary, water quality violations caused or contributed to by the Permittee due to such circumstances as unanticipated changes in or alterations to effluent quality that might otherwise meet permit conditions or the discharge of pollutants not identified in the City's permit application, for example. Again, this requirement narratively tracks a key provision of the NH WQS, which EPA is not required to translate or express as a series of individual numeric limitations, but that it may instead frame as a narrative prohibition in furtherance of its obligation to include in permits conditions that ensure compliance with water quality standards, as it is incontrovertibly entitled to do under law. The "[Clean Water] Act permits enforcement of broad, narrative criteria." PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology, 511 U.S. 700, 700 (1994).

The commenter claims that this provision provides no opportunity for due process in the context of the City's right to know what limits EPA and NHDES believe are warranted, provides no opportunity to comment on the correctness of those limits and no right to appeal any such determination. However, the commenter, in this case the permittee, has been operating under a permit that contains this provision since at least 1997. See Ohio Valley Envtl. Coal. v. Fola Coal Co., LLC, 845 F.3d 133, 144 (4th Cir. 2017) (finding that a permittee had fair notice of narrative water quality standards included in its permit due in part to the amount of time the permittee was bound by that language). The language in the permit clearly states what is required of the permittee: that the permittee ensure no violation of New Hampshire water quality standards. This narrative standard is consistent with the CWA and adequately puts the permittee on notice of its obligations.

See Upper Blackstone Water Pollution Abatement Dist. v. E.P.A., 690 F.3d 9, 33 (1st Cir. 2012) ("EPA regulations [at 40 C.F.R. § 122.41(d)(1)(i)] require permitting authorities to include in NPDES permits conditions which 'control all pollutants or pollutant parameters ... [that] are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality.'").

Moreover, the permittee has been aware of EPA's application of such narrative water quality standards since the last permit that reissued in 1997. New Hampshire's water quality standards are fully available to the public, as codified 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. To the extent that the commenter states that the public is precluded from an opportunity to comment on or appeal such water quality standards, this is incorrect. In fact, the notice-and-comment procedures as well as the appeal procedures required pursuant to the CWA and its regulations provide just such opportunity (33 U.S.C. § 1369(b); 40 C.F.R. § 124.19), and in submitting the above concerns during the public comment period, the commenter has availed itself of that procedure.

The commenter generically mentions due process violations but fails to specify whether it refers to substantive or procedural violations and further fails to identify with particularity how EPA's action is inconsistent with the requirements for ensuring either type of due process in this particular setting. See, e.g., Mathews v. Eldridge, 424 U.S. 319 (1976) (identifying factors for assessing a procedural due process violation); Collins v. City of Harker Heights, Tex., 503 U.S. 115 (1992) (outlining what constitutes a substantive due process claim). EPA is not required to develop arguments on behalf of a commenter.

As for the commenter's reference to the March 27, 2019, letter from EPA Region 3 to the State of West Virginia, this letter is specific to the State of West Virginia and its revisions to its authorized NPDES program. Changes to the authorized NPDES program and state water quality standards in West Virginia have no bearing on the EPA's implementation of the NPDES program in New Hampshire. As stated above, EPA's inclusion of Part I.A.2 is consistent with law and regulations and ensures that the permit is in compliance with New Hampshire's State Certification and water quality standards.

Finally, the commenter's assertion that this provision deprives it of its Clean Water Act permit shield is entirely without merit. Section 402(k) of the Clean Water Act, 33 U.S.C. § 1342(k), establishes the "permit shield" by stating "[c]ompliance with a permit issued pursuant to this section shall be deemed compliance" with section 301 (among other sections) of the CWA. In order to avail itself of the protections of section 402(k), a permittee must first be in compliance with all express terms of the permit. See Ohio Valley Envtl. Coal. v. Fola Coal Co., LLC, 845 F.3d 133, 142 (4th Cir. 2017) ("[A] permit shields its holder from liability as long as the permit holder complies with the express terms of the permit and with the Clean Water Act's disclosure requirements."

(internal quotations omitted)). Courts have clearly held that narrative water quality standards are express terms when included in an NPDES permit. Id. at 144; PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology, 511 U.S. 700, 700 (1994) (The "[Clean Water] Act permits enforcement of broad, narrative criteria."); Nat. Res. Def. Council v. Metro. Water Reclamation Dist. of Greater Chicago, 175 F. Supp. 3d 1041, 1053–54 (N.D. Ill. 2016) (The NPDES Permit "incorporates the WQS as substantive terms of the permit, compliance with which is required in order for the permit shield to apply. . . . [T]he permit shield defense can apply only if the three WRPs' effluent does not cause violations of the Illinois WQS."). Thus, when included in a permit, narrative water quality standards are enforceable conditions that must be met for the permittee to invoke the permit shield provision of the CWA. The permittee is not deprived of the protections afforded by section 402(k). Rather, the permittee is required, as is always the case, to comply with all its permit terms prior to invocation of the permit shield. The City's concern the narrative prohibition will deprive it of its ability to comply with a new or more stringent requirement according to a schedule is misplaced, as the permit limit together with schedule comprise the enforceable effluent limitation. So long as the City is complying with the terms of a compliance schedule for a given limit, it will not be subject to an enforcement action for failing to meet a final limit not yet in effect, and it can avail itself of the permit shield.

EPA is aware of the pending City of San Francisco matter in the 9th Circuit Court of Appeals. Notably, that case is an appeal of Environmental Appeals Board decision upholding a nearly identical permit provision as the one the City objects to here. See In re: City and County of San Francisco, 18 E.A.D. 322, 338-350 (E.A.B. 2020). This decision followed on the heels of the E.A.B. affirming Region 1's use of such a permit term. See In re: City of Lowell, 18 E.A.D. at 175-186. Thus, the current state of the law clearly authorizes the Region's use of such a permit provision.

Comment 11

PFAS

Permit Pg 3, Part I.A.1; Permit Page 4, Part 1.A.1, Attachment D, Paragraph 18; Permit Pg 15, Part 1.F(4); Permit Fact Sheet Page 36, Part 5.3.3; Permit Fact Sheet Pg 36, Part 5.3.3; Permit Attachment D, Paragraph 18 Perflourohexanesulfonic acid (PFHxS), Perflourononanoic acid (PFNA), Perflourooctanesulfonic acid (PFOS), Perflourooctanoic acid (PFOA):

While the City appreciates the health and environmental concerns that the PFAS chemicals pose, the City objects to inclusion of influent, effluent and sludge monitoring for PFAS chemicals as there is no federal or state wastewater narrative water quality standard. This additional monitoring on a quarterly basis will be unnecessary and overly burdensome. As stated by EPA, the purpose is to gather information; however, the proposed sampling for influent and effluent should be limited to four (4) quarterly grab samples (instead of composite samples) over the first year of the permit rather than quarterly during the entire permit term. This sampling data should be sufficient to provide EPA with background PFAS results, especially in light of similar PFAS sampling obligations and data collection efforts at other WWTFs in the region.

The City objects to the proposed sludge sampling on a quarterly basis for the above-referenced PFAS constituents as unnecessary and overly burdensome because the City landfills its sludge solids at the Turnkey Landfill which serves a municipal landfill function pursuant to 40 CFR §257.2 and §258.2. While the City recognizes the concern with PFAS, there is no federal or state limit (load, concentration, or narrative standard) for PFAS in wastewater or sludge. The City asks that EPA eliminate the required sampling for sludge, given the expense and burden, as well as the lack of available labs to conduct this testing. If EPA requires this testing, the City asks that it be reduced to four (4) quarters, rather than the full permit term to provide EPA and NHDES with sufficient background information on PFAS constituents in sludge, especially when combined with similar recent requirements for other facilities. The City does not utilize land application methods for disposal of its sludge solids.

The City also notes that pending legislation, New Hampshire House Bill 1185 is currently awaiting signature by the Governor, having passed both the House and Senate. HB 1185 will provide cities and towns with the option of requiring industrial or commercial facilities or septage haulers to test their discharges to determine PFAS levels. In light of this bill shifting the burden from the municipalities to the industrial/commercial/septage discharges, the City asks that EPA either remove the PFAS sampling obligation for industrial dischargers or authorize the City to delegate that obligation to dischargers upon the effective date of HB1185. If sampling is required, then the City requests the use of grab samples instead of the composite sampling methods.

Response 11

EPA recognizes that this new PFAS monitoring requirement entails increased cost. However, EPA maintains that the monitoring frequency should be at least quarterly to ensure that there are adequate data to assess the presence and concentration of PFAS in facility discharges. These data will enable EPA to obtain comprehensive and representative information on the sources and quantities of PFAS discharges and EPA will use these data in the future to inform its actions. EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. *See* CWA § 308(a)(A), 33 U.S.C. § 1318(a)(A) (specifying that permittees must provide records, reports, and other information EPA reasonably requires); CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (requiring permittees to provide data and other information EPA deems appropriate); 40 CFR § 122.41(h) (permittees shall furnish "any information" needed to determine permit compliance); 40 CFR § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); see also, e.g., *In re City of Moscow*, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has "broad authority" to impose information-gathering requirements on permittees); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers "broad authority" on permit issuers to require monitoring and information from permittees).

The commenter suggested that influent and effluent sampling shall be limited to four (4) quarterly grab samples (instead of composite samples) over the first year of the permit. Given that limited PFAS data for WWTFs are available and that this is a new monitoring requirement, EPA would not consider one year of sampling as adequate to characterize the levels of PFAS in the discharges from the facility. In addition, composite samples are

preferred as they would capture levels throughout a longer period as compared to grab samples. However, EPA will evaluate all available data in the next permit reissuance and may reduce PFAS monitoring in the future based on the results of this sampling and other updated information in comparison to any PFAS water quality criteria that may be in effect at that time.

Regarding sludge, in EPA's judgment, PFAS monitoring of influent, effluent and sludge is necessary to better understand the fate and transport of PFAS throughout the treatment process. Additionally, these data may be used to inform future decisions regarding appropriate sludge disposal practices.

Finally, this monitoring is consistent with EPA's *October 2021 PFAS Strategic Roadmap*[16].

The commenter mentions New Hampshire House Bill 1185 which may provide cities and towns with the option of requiring industrial or commercial facilities or septage haulers to test their discharges to determine PFAS levels. EPA recognizes that permittees have other regulatory avenues to require such monitoring and the annual monitoring requirement may be implemented through any of those regulatory avenues. Discharges to the wastewater collection system are controlled through local limits, pretreatment programs, industrial discharge permits, and sewer use ordinances. If certain industrial WWTF influents are found to contain PFAS at unacceptable levels, then it would be appropriate to begin searching the collection system for the source(s). In such cases, the City could put that requirement into its IP program and require the individual industrial users to perform those tests and provide the results to us at their expense. Thus, the Permittee may transfer all or part of the PFAS-associated monitoring cost to the industrial user, as it deems appropriate.

Comment 12

pH

Permit Pg 16, Part 1.G.1; Permit Pg 20, Part 1.I.5; Permit Fact Sheet Pg 19, Part 5.1.5:
The City requests a modification of the pH range from 6.0 to 9.0 rather than 6.5 to 8.0 due to the City's nitrification/denitrification process being implemented at the WWTF. Note that this range is within DES's acceptable upper range.

Response 12

The receiving water is a Class B water. Fact Sheet at 1. Per Env-Wq 1703.18, the pH of class B waters "shall be 6.5 to 8.0 unless due to natural causes." *See also* RSA 485-A:8, II (state statute requiring the same.) For this reason, EPA disagrees with the commenter's assertion that a range of 6.0 to 9.0 would be within DES's acceptable range. As further discussed below, the narrative natural causes exception in the state WQS does not apply here. Thus, EPA is bound to apply the 6.5-8.0 range established by the EPA-approved state WQS for Class B waters.

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

As set forth in Part I.I.5 of the Permit, the pH range may be modified if the Permittee satisfies certain conditions. Upon notification of an approval of a pH range modification by NHDES, EPA would review and, if acceptable, submit written notice to the Permittee of the permit change. To allow for a pH demonstration and limit adjustment, the permittee must demonstrate to NHDES that either:

(1) 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.

However, NHDES has determined that the Permittee has not satisfied either condition because the segment receiving the discharge is impaired for pH. Therefore, the facility is neither eligible to perform a pH study nor receive a pH adjustment at this time.

Regarding condition #1, EPA acknowledges that 17 of 46 of the upstream pH values (shown in Appendix A of the Fact Sheet) are below 6.5 s.u. However, these values do not represent a "natural condition" because the receiving water is impaired for pH. *See* New Hampshire's 2020/2022 Section 305(b) and 303(d) List. As recently affirmed in *Keene,* "the inclusion of the receiving water on the 303(d) list supports the Region's conclusion that the low pH of the receiving water… is not 'due to natural causes' within the meaning of New Hampshire's water quality standard codified at N.H. Code Admin. R. Ann. Env-Wq 1703.18(b)." *Keene* at 739, *see also, generally, Keene* at 737-744. This is because

> New Hampshire's water quality standard for pH has two components: a numeric pH range and a narrative exception for waters with pH outside the specified range "due to natural causes." N.H. Code Admin. R. Ann. Env-Wq 1703.18(b); *see also* 40 C.F.R. § 122.44(d)(1) (requiring that permits contain conditions necessary to achieve water quality standards, "including State narrative criteria for water quality"). Thus, in order to list a water body as impaired for pH, the State necessarily determined both that (1) there is an excursion of the numeric pH range, and (2) the exception for natural causes does not apply. *See* The New Hampshire 2020/2022 Consolidated Listing and Assessment Methodology ("CALM") document[17].

Keene at 739. Just like in *Keene,* "New Hampshire has listed [Rochester's] receiving water as impaired for pH, and the Region [has] reasonably concluded that New Hampshire had determined that the low pH was not due to natural causes" and thus applied the WQS's numeric limit of 6.5-8.0. in the final permit. *Id.*

Regarding condition #2, it is likely that the pH in the receiving water is significantly altered by the Permittee's discharge. In general, as dilution decreases, the impact of

[17] 2020/2022 Section 305(b) and 303(d) Consolidated Assessment and Listing Methodology, NHDES 2/18/22 (also referred to as the "303(d) List")

effluent on river pH increases. Because the Rochester WWTF discharge has a very low dilution factor, the discharge likely has a large impact on the pH of the receiving water. This impact is typically assessed with a pH demonstration study. However, because the segment of the river to which the facility discharges is impaired for pH, a pH limit adjustment is not allowable and a pH demonstration study is unnecessary.

Therefore, the facility is not eligible for a modification to its pH range because it does not meet either of the two conditions noted above because the segment of the river to which the facility discharges is impaired for pH.

Comment 13

Permit Fact Sheet Pg 17, Part 5.1.2.2 – CBOD Mass Limits. The City objects to the inclusion of the Maximum Daily (Summer, Winter) CBOD limits as legally inconsistent with EPA's regulations which specify either monthly/weekly technology based limits or require monthly and weekly average limits.[6] EPA has included average monthly and weekly limits for both Summer and Winter seasons and therefore the maximum daily limits are unnecessary and inconsistent with EPA regulations and permitting in other regions.

6. 40 CFR §122.45(d)(2)

Response 13

As noted in the 2022 Fact Sheet, the $CBOD_5$ limits are water quality-based effluent limits (WQBELs) carried forward from the 1997 Permit and are more stringent than the technology-based limitations (TBELs) that would have been required under 40 C.F.R. § 122.45(d)(2) as referenced in the comment. As described in the 1997 Fact Sheet, these limits were derived from Dissolved Oxygen (DO) modeling that was a result of the Cocheco River Waste Load Allocation (WLA) Study performed by NHDES in 1987-1990 and published in January 1990. Specifically, the 1997 Fact Sheet at 8 indicates the following with respect to the $CBOD_5$ limits:

> "Draft permit limits developed from this model are sufficient to protect Class B NH Standards for DO in the receiving water after mixing with the effluent. That is, the combined effect of $CBOD_5$ and Total Ammonia limits, on an *average monthly* basis, will not cause the DO in the Cocheco River to be less than a daily average of 75 percent of saturation, or, on a *maximum daily* basis, will not cause the DO to be less than an instantaneous minimum of at least 5.0 mg/L." (emphasis added)

As a result of that analysis, the 1997 Permit included the maximum daily WQBELs for $CBOD_5$ to ensure compliance with New Hampshire's water quality standards (WQS) for an instantaneous minimum of DO in the receiving water.

Therefore, these WQBELs (including the daily maximum WQBELs) are not derived from the technology-based secondary treatment regulations referenced above. EPA is required to include the more stringent of either applicable TBELs or WQBELs. Therefore, EPA is required to retain these limits in the Final Permit in accordance with

anti-backsliding requirements unless an exception to anti-backsliding applies and a less stringent limit could satisfy WQS. The commenter has provided no basis for removing these limits pursuant to an exception to anti-backsliding requirements and EPA does not find that any anti-backsliding exceptions apply in this case.

Finally, EPA notes that a river segment downstream of Rochester's discharge, NHRIV60030608-03, is listed as impaired for dissolved oxygen saturation in the 2018 and 2020/2022 New Hampshire 303(d) Lists. This continued impairment downstream of the discharge further supports the need to retain these WQBELs.

Comment 14

Permit Fact Sheet Pg 18, Part 5.1.3.1 – TSS Concentration Limits. The City objects to inclusion of the Maximum Daily (Summer, Winter) TSS limits as legally inconsistent with EPA's regulations which specify either monthly/weekly technology-based limits or require monthly and weekly average limits.[7] EPA has included average monthly and weekly limits for both Summer and Winter seasons and therefore the maximum daily limits are unnecessary and inconsistent with EPA regulations and permitting in other regions.

7. 40 CFR §122.45(d)(2)

Response 14

In the 1997 Permit, EPA established TSS limits "based on the level of BOD_5 allowed in the effluent." In other words, the $CBOD_5$ limits discussed in Response 13 above were WQBELs developed to protect WQS for DO and then the TSS limits were established as TBELs (not WQBELs) given that the facility's treatment system was expected to "produce similar effluent concentrations of BOD_5 and TSS." See 1997 Fact Sheet at 10. In other words, EPA included the maximum daily TSS limits as technology-based effluent limitations ("TBELs") based on best professional judgment ("BPJ").

In order to consider removal of these limits, EPA must consider whether an exception to anti-backsliding applies. EPA concludes that these limits were based on a mistake of both a technical and legal nature, thus covered by the exception at Section 402(o)(2)(D). EPA has promulgated secondary treatment regulations which establish the applicable TBELs for TSS, in addition to BOD_5 and pH. *See* 40 C.F.R. Part 133. For TSS, the secondary treatment regulations establish weekly and monthly limits, but no daily limits. 40 C.F.R. § 133.102. As the commenter correctly points out, EPA's regulations elsewhere establish a default of weekly and monthly effluent limitations for POTWs, not daily, unless impracticable. 40 C.F.R. § 122.45(d)(2). Here, EPA inappropriately established a daily TBEL, in contravention of both the secondary treatment regulations and 40 C.F.R. § 122.45(d)(2), for the sole reason that it expected the Facility to achieve that limit based on the controls necessary to comply with a WLA-derived $CBOD_5$ limit. EPA acknowledges this was a mistake and thus may be corrected through the applicable anti-backsliding exception at Section 402(o)(2)(D).

Having concluded that these TSS maximum daily limits qualify for an exception to anti-backsliding, EPA must still consider whether the removal of that limit would satisfy section 402(o)(3) of the Act, which prohibits the relaxation of effluent limitations in all cases if the revised effluent limitation would result in a violation of applicable effluent guidelines or water quality standards, including antidegradation requirements. In this case, EPA considers water quality concerns related to TSS to be chronic, long-term loading impacts that are adequately protected by monthly average and weekly average TSS limits. See Response 43 below for a more detailed discussion regarding water quality impacts related to TSS. Therefore, the maximum daily TSS limits are unnecessary from a water quality perspective and the removal of the maximum daily limits will not have any impact on water quality downstream as long as the average monthly and average weekly limits are maintained.

EPA also considered whether this change would require antidegradation review. Because EPA has concluded that there will not be an actual increase in discharge of TSS due to the retention of the weekly/monthly limits, see above, EPA does not consider this change as triggering antidegradation. EPA has confirmed with NHDES that it agrees with this understanding.

Based on this comment, EPA has confirmed that removal of the maximum daily TSS limits is justified, and they have been removed from the Final Permit.

Comment 15

Permit Fact Sheet Pg 19, Part 5.1.6 – Bacteria. The City requests that EPA modify the sampling location for bacteria collection to after the City's UV disinfection outlet rather than in the receiving water sampling because the treated effluent travels from the UV disinfection outlet along an open-air channel that could pick up additional bacteria either from animals or other sources and is not representative of the treated discharge. Since the City of Rochester utilizes a UV disinfection system which is a zero residual disinfection process, the most representative sample site to measure treatment effectiveness and permit compliance is immediately downstream from all entering wastewater streams prior to discharge into the receiving stream. In this case this is in the effluent channel directly after the UV disinfection equipment.

Response 15

The Fact Sheet does not specify a sampling location for bacteria. The commenter's mention of "receiving water sampling" does not apply to bacteria. In Part I.A.1, the wording "the receiving water and the influent shall be monitored as specified below" refers to the ambient (receiving water) and influent sampling that is required, which does not include bacteria sampling.

As noted in Footnote 1 of Part I.A., "a routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month." The City's proposed sampling location for bacteria is acceptable as this is the point where the effluent has received all the treatment provided by the WWTF and is therefore representative of the discharge. However, if the Permittee believes that contamination of the effluent could occur in the effluent channel after UV disinfection

has occurred, then the monitoring location should be beyond the area where potential contamination could occur, or just prior to exiting the effluent channel.

Comment 16

Permit Fact Sheet Pg 20, Part 5.1.7 -Dissolved Oxygen. The City objects to the continued inclusion of the Dissolved Oxygen limit of 7.0 mg/L because as cited by EPA, there has been no exceedances of the DO limitations and DO is not listed as an impairment in the approved 2020/2022 303(d) List for the freshwater Cocheco River. The City requests that it be removed from the permit, similar to the action by EPA to remove the metals limits in this permit.

Response 16

As noted in the 2022 Fact Sheet, the DO limit is retained and derived from the 1997 Permit. As discussed in Response 13, the Fact Sheet accompanying the 1997 Permit indicates that DO modeling used the DO level of 7.0 mg/L to be consistent with the Cocheco River WLA study (published January 1990), and thus EPA used 7.0 mg/L as the basis for the DO limit in the 1997 Permit. The comment provides no technical basis to question or refute the Cocheco River WLA study on which the 1997 Permit limits were based. EPA and NHDES continue to assess a need for this limit, consistent with the Cocheco River WLA study, given the exceedingly low dilution factor and the addition of BOD to the system.

Further, EPA disagrees that the 2020/2022 303(d) List does not include any DO impairments in the Cocheco River. Rather, a segment downstream of Rochester's discharge, NHRIV60030608-03, is listed as impaired for dissolved oxygen saturation in the 2018 and 2020/2022 New Hampshire 303(d) Lists. This supports the need for the DO limit to be carried forward. Note, the 1990 WLA explicitly states that at least the 0.2 miles of this reach is impacted by the City's DO discharge. 1990 WLA at III-4. While the commenter provides no suggested rationale for how removal of this limit could satisfy anti-backsliding requirements, EPA notes that even were an anti-backsliding exception to apply EPA sees no basis for concluding the safety clause at section 402(o)(3) could be satisfied due to this impairment.

EPA also notes that there were no specific metals limits in the 1997 Permit and, therefore, no metals limits have been removed. The monthly reporting requirements for copper, lead, and zinc in the 1997 Permit have been eliminated because EPA determined that the discharge does not have the reasonable potential to cause or contribute to an excursion above water quality standards for these metals.

Comment 17

Permit Pg 5, Part 1.A.1. – Footnote 1 – Sampling Days and Times – The City objects to the requirement in Footnote 1 that effluent samples have to be taken on the same days and same time each month. This restriction is not supported in either the federal or state regulations. Moreover, it is impractical because sampling should occur on different days and different times to ensure that the City is getting representative data. For example, non-domestic users may vary operations, therefore sampling the same day of the month at the same time might miss fully

characterizing their contributions. The requirement that samples be representative is all this is necessary (and typical of the vast majority of NPDES permits issued nationwide).

Response 17

EPA clarifies that the intent of this requirement is not to require that every sample be taken at the same time of the day (*e.g.*, 10 a.m. every day), which could indeed preclude capturing the inherent variability of the effluent as described in the comment. Rather, the intent of this requirement is twofold. Firstly, it is to require the Permittee to set up a sampling program that would yield the most representative data, noting that the most representative sampling program may require setting different sampling times on different days within a given month (*e.g.*, 10 a.m. on Mondays, 2 p.m. on Tuesdays, etc.). Secondly, it is to require the Permittee to adhere to this sampling program each month in order to ensure consistently representative data that can be analyzed for long term trends, etc.

EPA disagrees that a routine sampling plan with specific days and times of sampling does not have any basis. Rather, such a plan facilitates the ability to track long-term trends in effluent quality and to characterize the discharge without any bias related to the variability within a given day or week. This is a standard permit requirement which has been applied, in general, in all recent NPDES permits issued to POTWs, and further delineates the representativeness requirement, which may be subject to varying interpretations. EPA has in the past encountered issues with certain permittees' sampling practices that tested the boundaries of the term "representative," to which this additional layer of guidance is a response. The Environmental Appeals Board has affirmed EPA's practice. *See In re: City of Lowell*, 18 E.A.D. at 192-93 (E.A.B. 2020).

EPA has broad authority under the Act to impose appropriate conditions in an NPDES permit that are rationally related to implementing the objectives of the Act, in this case, to ensure that the data collected to ensure compliance with permit limitations and achievement of water quality standards is representative.

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

Comment 18

CMOM/I&I/Alternative Power Source

a. Permit Pg 9, Part 1.C.1 – CMOM – Staffing – The City requests EPA grant 18 months from the effective date of the permit to implement this requirement for sufficient staffing to recruit, hire, and train necessary and qualified. The City incorporates its comments on staffing set forth in Comment 7, above.

b. Permit Pg 9, Part 1.C.2. – CMOM – Preventative Maintenance – The City requests 18 months from the effective date of the permit to develop a preventative maintenance plan to prevent overflows and bypasses caused by malfunctions or failures, for the reasons stated in the City's comments in Comment 7, above.

c. Permit Pg 10, Part 1.C.3 – CMOM – Infiltration/Inflow – The City requests additional time to complete the ongoing Sewer System Master Plan, which is an ongoing, existing study and project to be completed by October 31, 2024, consistent with the AOC referenced in the General Comment above. The City incorporates its comments on staffing set forth in Comment 7, above.

d. Permit Pg 10, Part 1.C.4 – CMOM – Collection System Mapping. The City requests sixty (60) months to develop mapping required in Part 1.C.4(k) related to pipe diameter, date of installation, type of material, distance between manholes, and direction of flow. The City also asks that the language in Part 1.C.4 be amended as follows:

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

e. Permit Pg 10-11, Part 1.C.5. – CMOM – Collection System O&M Plan. The City requests an additional one (1) year beyond the effective date of the permit to submit parts 5.a(1-3). The City also requests that deliverables for the O&M Plan 5.b(1-8) be submitted within 24 months of the submission of the 5.a(1-3) deliverables to EPA. The City incorporates its comments on staffing set forth in Comment 7, above.

f. Permit Pg 11, Part I.C.5.b.(6) - CMOM – Collection System O&M Plan – This paragraph requires a description of "…programs 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." It is generally understood that no program can prevent overflows or bypasses under every conceivable scenario caused by external factors such as extreme precipitation events, and that all overflows must be reported pursuant to the conditions of the permit and the Clean Water Act. The City therefore requests that EPA amend the permit language to modify or remove the word "preventing" and replace it with "minimizing, to the extent practicable."

g. Permit Pg 12, Part 1.C.6 – CMOM – Annual Reporting Requirement – The City notes that consistent with the reporting requirement in Part 6.f the City must submit a report that includes the 80% flow capacity notification, plan development and additional reporting obligations if the monthly average flow exceeds 80% 5.03 MGD for 3 consecutive months. Given this obligation to notify the EPA and State, as set forth above in Comment 5, the City asks that EPA remove the rolling effluent flow limit.

h. Permit Pg 12, Part 1.D – Alternative Power Source – The City requests that EPA include this requirement within the City's requested compliance schedule in the permit to allow time to design, procure, permit and implement the additional power source(s) in conjunction with an upgrade to the facility, which may require additional power than does the existing facility. See

discussion on same in Comment 2, above. The City has experienced delays of up to a year or longer to procure generators for other City facilities.

i. Permit Fact Sheet Pg 38, Part 5.6 – Infiltration/Inflow (I/I) – While the City is working to study the collection system and identify sources of I/I, it objects to inclusion of this requirement within the draft permit as it should be given the autonomy to operate and maintain its facility in an appropriate manner consistent with 40 CFR §122.41(e).

j. Permit Fact Sheet Pg 39, Part 5.7 – Operation and Maintenance of the Sewer System – The City repeats and incorporates its comments above in both the Permit and Fact Sheet related to the CMOM plan, Staffing, Preventative Maintenance, I/I reduction, and Industrial Pretreatment Program.

Response 18

The permit conditions addressed in comments (a) and (b) are consistent with the Standard Conditions of Part II.

Regarding comment (a), EPA notes that the permit does not require a particular number of staff, rather "adequate" staff to carry out the operation, maintenance, repair, and testing functions of this permit. As the permittee must meet all requirements of the permit as described therein, the permittee also necessarily must have "adequate" staff to do so. Therefore, this requirement will remain in the permit as is.

Regarding comment (b), EPA disagrees that additional time is necessary to incorporate preventative maintenance of the facility. Rather, EPA notes that Part II, section B.3 of the 1997 Permit included a similar provision requiring the Permittee to "*prevent* any discharge…which has a reasonable likelihood of adversely affecting human health or the environment." (emphasis added). EPA notes that "overflows and bypasses caused by malfunctions or failures" noted in Part I.C.2 of the 2022 Draft Permit should be considered to have a likelihood of affecting human health or the environment and would be included in this prior condition. Given that the Permittee is already required to conduct this type of preventative maintenance, EPA does not agree that a compliance schedule is appropriate. To the extent the commenter is basing this request on staffing concerns, Response 7 addresses that topic.

For comment (c), the requirement to complete the Sewer System Master Plan is not subject to a schedule in this Permit, but rather is part of a Consent Order.

For comment (d), regarding the request for additional time, EPA finds, based on its experience with other permittees, that 30 months is sufficient time. EPA has been including these mapping requirements in municipal permits for large and small WWTPs in New Hampshire for more than 10 years and permittees and co-permittees have been able to fulfill these requirements within this timeframe. The City has also been on notice since publication of the Draft Permit in April 2022 that these requirements would be forthcoming and presumably could have laid the preliminary groundwork for fulfilling these obligations, especially since the City has not objected to the provisions on substantive grounds. EPA notes that the City has not provided any justification or

rationale for the requested time extension and, therefore, EPA is unable to provide any more specific response to the request for additional time. In any case, if the Permittee is unable to meet the deadline, then it is encouraged to contact EPA's Enforcement and Compliance Assurance Division (ECAD) to explore the possibility of an administrative order.

Regarding the requested language "*to the extent known and/or discoverable*," EPA does not deem it necessary to include this language given that this is implied already. In other words, the provision does not require that the City determine anything that is not known or discoverable as such a requirement would not be possible.

For comment (e), regarding the request for additional time, EPA finds that 6 months and 24 months, respectively, are sufficient time. EPA has been including these collection system O&M requirements in municipal permits for large and small WWTPs in New Hampshire for more than 10 years and permittees and co-permittees have been able to fulfill these requirements within this timeframe. The City has also been on notice since publication of the Draft Permit in April 2022 that these requirements would be forthcoming and presumably could have laid the preliminary groundwork for fulfilling these obligations, especially since the City has not objected to the provisions on substantive grounds. EPA notes that the only justification provided by the City is in regards to staffing. See Response 7 for a response to this issue. In any case, if the Permittee is unable to meet the deadline, then it is encouraged to contact EPA's Enforcement and Compliance Assurance Division (ECAD) to explore the possibility of an administrative order.

For comment (f), this cites a standard condition that the Region has routinely included in permits for WWTFs. EPA views this provision, in part, as implementing the regulation at 40 CFR § 122.41(e), which requires the proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. As explained in the Fact Sheet at Page 38, the provision requires the Permittee to "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." To the extent there is a violation of this provision, it would be due to the City's failure to develop and implement an I/I removal program.

EPA disagrees with removing the word "preventing" from this provision. The term "preventive maintenance" is a common term and implies that maintenance activities should not merely be reactive to system failures after they occur but should be proactive to predict where the most likely failures and/or malfunctions may occur and maintain those areas expeditiously before they occur. Such a maintenance program would effectively prevent many overflows/bypasses from occuring. The permit language at I.C.2 clarifies that "proper operation and maintenance" of the POTW includes "an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure" and "an inspection program designed to identify all potential and actual unauthorized discharges."

Regarding comment (g), Part 1.C.6(f) notes that if the monthly average flow exceeded 80 percent of the facility's 5.03 MGD design flow (4.02 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the Annual Report [regarding the Operation and maintenance (O&M) of the sewer system] shall include:

a. 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

b. A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

The comment suggests that this provision should allow removal of the effluent flow limit. EPA disagrees and notes that this provision works in conjunction with the effluent flow limit given that this provision, by itself, cannot ensure that the effluent flow does not exceed 100% design flow capacity during the permit term. Rather, this provision ensures that the facility "plans" for expected flow increases in a manner that will comply with their permit limits. Without the effluent flow limit, a Permittee could merely submit these facility improvement plans in accordance with this provision and then proceed to discharge above the design flow capacity of the facility. Such discharges would potentially cause or contribute to violations of water quality standards given that they exceed the assumptions applied in developing the permit limits. Additionally, such an increase in pollutant loading would potentially violate antidegradation provisions without the necessary antidegradation review. To avoid this, EPA must include an effluent flow limit in the permit and if an increase in flow above the design flow capacity is necessary, EPA and NHDES may increase the effluent flow limit through a permit modification or permit reissuance based on the facility improvement plans and other necessary information to ensure protection of all WQS, including antidegradation provisions, at the higher effluent flow. Therefore, EPA confirms that the effluent flow limit is necessary, and this comment does not result in any change to the Final Permit.

For comment (h), the City should have an alternate power source in place for the existing WWTF, as required by Part B.1 of the Part II (General Conditions) that was included with the 1997 Permit which reads as follows:

> "This provision requires the operation of backup or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit."

To the extent that the facility upgrade related to achieving the total phosphorus limit requires an accompanying upgrade to the backup or alternate power source, this item may also be included in the compliance schedule in the Administrative Order described in Response 3 above. Once the permit becomes effective, the Permittee may contact EPA's Enforcement and Compliance Assurance Division (ECAD) to discuss the administrative order process further.

Comments (i) and (j) refer to Sections 5.6 and 5.7 of the Fact Sheet which contain standard language regarding I/I and O&M requirements for WWTFs and point to specific components of these requirements in the permit. To the extent the comment requests a change to the Fact Sheet language, EPA notes that the Fact Sheet supports the Draft Permit and cannot be changed once the Draft Permit package has been issued for public notice and comment. With respect to the corresponding permit conditions, EPA has responded regarding those provisions in this comment above.

Comment 19

Permit Pg 9, Part 1.A.9 – The City requests 18 months to implement the industrial pretreatment plan to identify the volume and character of flow from all significant industrial users (SIUs), and re-evaluation on an annual basis going forward. The City incorporates its comments related to staffing in Comment 7, above.

Response 19

The City has been implementing an industrial pretreatment program (IPP) for many years and annually characterizing the volume and character of flow from all of its SIUs. This information is summarized in Rochester's annual industrial pretreatment report, the last of which was dated February 24, 2022 and covered calendar year 2021. Therefore, since the Permittee is already complying this requirement every year, no additional time is warranted and will not be granted in the Final Permit.

Regarding staffing, see Responses 7 and 18.

Comment 20

Permit Pg 12-13, Part 1.E.1 – Industrial Users and Pretreatment Program- Provides only 90 days from the effective date of the Permit for the City to develop and enforce specific local effluent limits and submit a written technical evaluation to EPA analyzing the need to revise local limits. The City requests one year from the effective date of the permit to conduct and submit this evaluation. The City also requests 180 days to revise and submit its Sewer Ordinance after notification by EPA that the Sewer Ordinance must be revised.

Response 20

The City currently has approved local limitations in place. The Permit only requires the City to complete the six page technical evaluation (Permit Attachment C) which summarizes current influent loadings to the POTW. EPA does not require any monitoring to be conducted to complete this spreadsheet. Therefore, the Final Permit retains the time period of 90 days from the effective date of the Permit to submit this evaluation. At this time, EPA is not requiring the City to revise its Sewer Use Ordinance (SUO) so the need to consider any extension of time does not apply to this provision. If EPA were to request that the City revise its SUO during the permit term, the City's submittal would be required within 180 days from EPA's request.

Comment 21

Permit Pg 13, Part 1.E.2(a) – The City requests that EPA amend this obligation to make inspection, surveying and monitoring each industrial user on a schedule of every two years, given the current limitations on staffing and available resources available to the City as stated in Comment 7, above.

Response 21

Annual inspection and monitoring of each industrial user is a federal requirement in accordance with 40 CFR § 403.8(f)(2)(v). This requirement applies to all POTWs with approved IPPs and cannot be changed through this permit issuance. This requirement could only be changed by amending the Clean Water Act. Therefore, this requirement will not be changed in the Final Permit. Regarding staffing, also see Responses 7 and 18.

Comment 22

Permit Pg 13, Part 1.E.2(a)- This section requires the City to "Carry out inspection, surveillance, and monitoring procedures…" for all significant industrial users. The word "surveillance" in this context is understood to differ from the inspection and monitoring of these users. However, it is unclear what action is to be undertaken by the City; therefore, the City asks that the permit language be modified to remove the word "surveillance" from the permit.

Response 22

"Surveillance" is specifically required by 40 C.F.R. § 403.8(f)(2)(v) and cannot be changed through this permit issuance. Surveillance includes, but is not limited to, general oversight activities, whether they be sampling and monitoring, inspections, or general engagement and communication with the IUs. The City's pretreatment coordinator should contact EPA for clarification of any terms or requirements of this Part that are not clear or understood. This requirement will be maintained in the Final Permit.

Comment 23

Permit Pg 14, Part 1.E.5 – The City requests that EPA amend this provision to remove the words "must assure" and substitute the following: The Permittee will, to the maximum extent practicable, ensure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW."

Response 23

The "assure" language is cited directly from the regulations (*see, e.g.,* 40 C.F.R. § 403.8(f)(1)(iv)(B)) and thus cannot be changed through this permit issuance. While this comment does not provide a rationale for this proposed change, EPA understands the concern to be that the Permittee cannot ensure that its categorical industrial users will comply with the requirements of the pretreatment program. Concerns over noncompliance by industrial users with the Permittee's pretreatment program appear to misunderstand the permit provision. As an analogy, EPA must write NPDES permits to ensure compliance with the Clean Water Act and State water quality standards. 40 C.F.R.

§§ 122.4(a),(d)[18]. That does not mean EPA must ensure that there will never be a permit violation, but simply that the terms of the permit itself (if complied with) will ensure compliance with such regulations and that EPA is responsible to enforce against any violations. In like manner, the terms of the permit, contract, or order used by the Permittee to control the contribution to the POTW by each industrial user (if complied with) must ensure compliance with applicable pretreatment standards and requirements and the Permittee is required to enforce against any violations. Therefore, EPA does not view it as appropriate to add the proposed language, as the Permittee can design its pretreatment in a manner to satisfy this permit provision. Therefore, this language will be maintained in the Final Permit.

Comment 24

Permit Pg 14, Part 1.E.6 – The City notes that EPA requires the City within 180 days of the effective date of the Permit to provide a separate submission to update its pre-treatment program to EPA for approval. While this is noted as a separate obligation, the City believes it should be permitted to submit this at the same time as the local limits analysis in Part 1.E.1 of the Permit. Consistent with comments to Part 1.E.1, the City requests an extension of 1 year to be consistent with Part 1.E.1.

Response 24

Part I.E.6 is a standard permit provision that applies only as applicable, as noted in that part. Although the permit requires a local limits evaluation under Part I.E.1, EPA is not necessarily mandating that any revisions to the IPP be developed under Part I.E.6. EPA has provided the template for the Part I.E.1 evaluation in Permit Attachment C and there is no monitoring that needs to be conducted to complete that evaluation. Since there are no deliverables apart from the local limits evaluation required by Part I.E.1, the time requirements for Part I.E.6 will not be changed in the Final Permit.

See Response 20 regarding Part I.E.1.

Comment 25

Permit Pg 14, Part 1.E.7 – The City requests, for ease of monitoring, that the EPA change the requirement for collection of composite samples to the collection of grab samples for industrial parameters.

Response 25

EPA understands the effort that will be required to conduct composite sampling for these industries. However, EPA reminds the City that four grab samples collected at 15 minute intervals may be combined to comprise a composite sample. Compositing of four samples may significantly reduce the time that the City spend on sample collection when compared to longer term composite samples. Given that, the language will not be changed in the Final Permit.

[18] "No permit may be issued: When[,*inter alia,*] the conditions of the permit do not provide for compliance with the applicable requirements of CWA, or regulations promulgated under CWA… [or] When the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States."

Comment 26

Permit Fact Sheet Pg 37, Part 5.4 – Industrial Pretreatment Program- The City repeats and incorporates its objections above related to this section and the industrial pretreatment program, including its staffing comments in Comment 7.

Response 26

EPA acknowledges the comment and incorporates Response 7 and 18 regarding staffing.

Comment 27

Permit Pg 14, Part 1.E.7 – This section requires that annual sampling be conducted on a list of multiple types of industrial discharges into the POTW, subject to the availability of a multi-lab validated method for wastewater sampling of four (4) specific PFAS compounds. Several of these provisions are addressed as follows:

(1). Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or Teflon type coatings. It is unclear whether the OSHA Standard Industrial Classification (SIC) Manual guidance explicitly lists industries that may produce PTFE or Teflon coated parts as part of their manufacturing process.
(2). Any Other Known or Expected Sources of PFAS. It is understood by the scientific community that PFAS represents a family of man-made chemicals that are ubiquitous in the environment, world-wide. The EPA online document titled Understanding PFAS in the Environment, which may be found at https://www.epa.gov/sciencematters/understanding-pfas-environment, notes that "PFAS are found in everyday items such as food packaging and non-stick, stain repellent, and waterproof products, including clothes and other products used by outdoor enthusiasts. PFAS are also widely used in industrial applications and for firefighting. PFAS can enter the environment through production or waste streams and are very persistent in the environment and the human body." Based on this understanding, it is unclear how known or expected sources of PFAS would be identified.

The City therefore requests that EPA modify or remove these two (2) categories of industrial discharges from the list in this part required for annual sampling.

Response 27

Regarding "Any Other Known or Expected Sources of PFAS," or "Manufacturers of Parts with Polytetrafluoroethylene (PTFE) or Teflon type coatings", the Permittee should require such monitoring for any other IUs that they have reason to believe may be a source of PFAS to the POTW. Guidance is available for these two (2) categories in the *Technical Resources for Addressing Environmental Release of Per- and Polyfluoroalkyl Substances (PFAS)*[19], specifically in Section 2. Permittees may use this list to identify, at their discretion, which IUs are potential sources of PFAS. Given the availability of this guidance, Part I.E.7 of the Final Permit remains unchanged from the Draft Permit.

EPA additionally notes that EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES

[19] https://pfas-1.itrcweb.org/

Permits. *See* CWA § 308(a)(A), 33 U.S.C. § 1318(a)(A) (specifying that permittees must provide records, reports, and other information EPA reasonably requires); CWA § 402(a)(2), 33 U.S.C. § 1342(a)(2) (requiring permittees to provide data and other information EPA deems appropriate); 40 CFR § 122.41(h) (permittees shall furnish "any information" needed to determine permit compliance); 40 CFR § 122.44(i) (permittees must supply monitoring data and other measurements as appropriate); see also, e.g., *In re City of Moscow*, 10 E.A.D. 135, 170-71 (EAB 2001) (holding that EPA has "broad authority" to impose information-gathering requirements on permittees); *In re Town of Ashland Wastewater Treatment Facility*, 9 E.A.D. 661, 671-72 (EAB 2001) (holding that CWA confers "broad authority" on permit issuers to require monitoring and information from permittees).

Comment 28

Permit Pg 20, Part 1.I.4.0 – The City requests that NHDES identify any and all public and privately owned water systems 20 miles downstream of the City's WWTF to allow for a complete list of waste systems in the event of a required notification for a bypass or upset. In addition, this notice requirement is overly broad. The City requests that the provision should be replaced with the following:

"The Permittee shall notify the downstream community water systems identified by NHDES of any emergency condition, plant upset or bypass, or permit noncompliance that could potentially adversely affect their ability to adequately treat drinking water. The Permittee may consult with such community water systems for the purpose of developing written agreements as to the type of events/releases by the Permittee that they want notice of. Any such agreement shall be provided to EPA and NHDES."

Response 28

The notification cited by the commenter is a NH state certification requirement. As noted in RSA 485-A13,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. EPA understands that DES is prepared to assist the Permittee in identifying all entities the Permittee would be required to notify. This requirement has not been changed in the Final Permit.

Comment 29

SSO Notification

Permit Pg 9, Part 1.B.2 – The City requests 18 months from the effective date of the permit to develop and implement the required website notification within 24 hours of unauthorized discharge (except SSOs that don't impact surface waters) on the City's website. This request is due to limited availability of staff as stated in the City's Comment in Section 5.0 above.

Response 29

This requirement will go into effect upon the effective date of the permit, which will be first day of the calendar month immediately following 60 days after signature. Although EPA acknowledges the commenter's concern of limited staffing, it is not clear from the comment why the staffing limitation requires the requested significant time extension to meet the notification requirement. The City of Rochester already has a publicly available website where it can post notifications of SSOs and enables residents to sign up for "E-alerts" on its Public Works webpage for any "Urgent alert updates". Although the City cited a limited availability of staff to implement this requirement, the existing webpage and notification capability is already in place and would require minimal effort to include a SSO notification component.

Comment 30

Corrections and Clarifications

Permit Pg 1 - Change Street Address – The City requests EPA change the street address listed in the draft permit for the facility to 245 Pickering Road, Rochester, NH 03867 (not 175 Pickering Road, Rochester, NH 03839). This change should also be made at the Permit Fact Sheet, Pg 1, and on the page after Appendix B, B-3.

Permit Pg 1 – Change Mailing Address – The City requests EPA change the mailing address listed in the draft permit for the facility to 31 Wakefield Street, Rochester, NH 03867 (not 45 Old Dover Road, Rochester, NH 03867). This change should also be made at the Permit Fact Sheet, Pg 1, and on the page after Appendix B, B-3.

Permit Fact Sheet Pg 1 – The City requests EPA to change mailing address to 31 Wakefield Street, Rochester, NH 03867, and change Facility address to 245 Pickering Road.

Permit Fact Sheet Pg 12, Part 3.1 – Location – Figure 2 referenced in the Fact Sheet is incorrect and needs to be updated. The City incorporates a new, modified Figure 2 attached as Attachment 3. The City also requests that EPA amend the latitude and longitude of the outfall which should be 43°15'50" N, 70°58'11" W, which is incorrectly stated in the Fact Sheet.

Permit Fact Sheet Pg 13, Part 4.1 – The first paragraph, second sentence EPA should remove the reference to "Mill Pond Dam" and substitute it with "Gonic Sawmill Dam." EPA should change the reference location of the Isinglass River in this paragraph to "Rochester, NH" instead of "Pickering, NH."

Permit Fact Sheet Pg 14, Part 4.1 – The City notes that in Part 4.1, second paragraph and Table 1 that the 2020/2022 303(d) List is now approved and should be referenced here. The City also notes that only pH and iron are listed in the 2020/2022 303(d) List for this segment of the Cocheco River . The segment immediately downstream from the receiving water segment is AU NHRIV600030608-03. EPA also includes a fragmented sentence which does not make any sense and omits information related to EPA's analysis/conclusion of this water segment, "EPA notes that the segment immediately downstream from receiving water segment, AU

NHIMP600030608-02 (Watson Waldron Dam)," EPA should re-issue and clarify this point, and provide the City with an opportunity to respond to this sentence.

Permit Fact Sheet Pg 35, Part 5.2.2 – Total Phosphorus – Site Specific Analysis – The City requests that EPA amend the Permit and Fact sheet to remove references to the "Town of Rochester" and substitute the "City of Rochester".

Permit Fact Sheet, Pg 45 – Figure 2. The City requests that EPA amend Figure 2 attached as Attachment 3, as stated in the comments above from page 12 in Part 3.1 of the Fact Sheet.

Response 30

These corrections are noted here for the record and the first correction has been reflected in the Final Permit. However, the Fact Sheet cannot be changed once the Draft Permit has been issued for public notice and comment. The Draft Permit only listed the incorrect street address of the facility and not the mailing address for the facility. The address of the facility has been corrected, but the mailing address was not added as it is only listed in the Fact Sheet and not the Draft Permit.

Regarding Section 4.1 of Fact Sheet on Page 14, EPA acknowledges that since the Fact Sheet was released, the 2020/2022 303(d) list has been approved, which replaced the 2018 303(d) list that was referenced. As described above, the Fact Sheet cannot be edited after release for public notice and comment. The 2020/2022 303(d) list continues to show that the receiving water segment is impaired for aquatic life integrity due to pH and iron, but as the commenter notes, it is no longer included on the 303(d) list as a category 5 impairment for fish consumption due to mercury, but the state has classified it as Category 4A.

As for the truncated sentence mentioned by the commenter that references waterbody segment NHIMP600030608-02, EPA acknowledges that this sentence was inadvertently truncated in the Fact Sheet. The truncated sentence followed EPA's discussion of designated uses and listing status for the immediate receiving water segment, NHRIV600030607-15. As EPA discussed elsewhere in the Fact Sheet (see page 30), a downstream segment of the Cocheco River (Assessment Unit NHRIV600030608-03) is listed as impaired for aquatic life designated use due to dissolved oxygen saturation. Accordingly, the information EPA intended to convey regarding the listing status of downstream segments was conveyed elsewhere in the Fact Sheet and thus EPA does not view this mistakenly truncated sentence necessitating opportunity for further comment.

The street address of the facility has been changed in the Final Permit, as requested.

B. Technical Comments prepared by Brown and Caldwell for the City of Rochester:

The following comments, prepared by Brown and Caldwell for the City of Rochester, NH, were included as Attachment I to the above set of comments which was submitted by the City of Rochester.

Comment 31

General Comment

In coordination with the City of Rochester, NH (City) and Rath Young Pignatelli, PC, Brown and Caldwell (BC) has prepared technical comments on the Draft National Pollutant Discharge Elimination System (NPDES) permit and accompanying Fact Sheet for the Rochester Wastewater Treatment Facility issued by the Environmental Protection Agency (EPA). These comments are respectfully submitted for EPA's consideration prior to issuance of the final NPDES permit for the Rochester Wastewater Treatment Facility.

Response 31

EPA acknowledges the comment.

Comment 32

The City objects to the proposed phosphorus limit on multiple technical bases and seeks an alternative approach to controlling phosphorus that more directly considers the characteristics and assimilative capacity of the Cocheco River. We believe that EPA has mischaracterized the nutrient-related status of the Cocheco River, which has distinctive characteristics that allow it to assimilate certain levels of phosphorus inputs without impairment. Moreover, USEPA's nutrient permitting method is overly simplistic and cannot consider the site-specific characteristics of the receiving water. The proposed limit is overly stringent and would incur high costs for no additional environmental benefit over more moderate limits. The City proposes an alternative, cooperative approach to identify defensible levels of phosphorus control for the Cocheco River, in accordance with New Hampshire's forthcoming rules for permitting-related standards (Env-Wq 1705).

More detailed comments on the City's perspective and proposed path forward are provided below. Some of the comments reference extensive monitoring performed by the City, and reports on those monitoring studies are attached as exhibits:

- Exhibit A – Visual Algal Survey of the Cocheco River (Brown and Caldwell, 2016)
- Exhibit B – 2016 Field Investigations of the Cocheco River and Regional Waters (Brown and Caldwell, 2017)
- Exhibit C – 2017 Field Investigations of the Cocheco River and Downstream Waters (Brown and Caldwell, 2018)
- Exhibit D – Non-Tidal Cocheco River Data Matrix (Brown and Caldwell, 2020)

Response 32

EPA acknowledges this comment and has responded to the specific issues in the responses set forth below.

Exhibits A, B, C, and D, which were included with these comments and referenced throughout these comments and responses. EPA reviewed these exhibits, but they are not reproduced in this Response to Comments document. However, they are part of the administrative record and are available for review upon request.

Comment 33

The City disagrees with EPA's claims of phosphorus-related impairments in the Cocheco River. In the draft permit fact sheet, EPA makes various claims of phosphorus-related effects or impairments of the Cocheco River. The City believes that EPA observations do not demonstrate nutrient impairments. Rather, they are unrelated to established assessment protocols or are highly subjective statements without basis in any objective or measurable goal. In fact, the freshwater Cocheco River is not listed as impaired for nutrients in any non-tidal assessment unit downstream of the Rochester discharge. The following comments address specific EPA observations/claims:

Claim: "The level of instream phosphorus dropped" (Draft Fact Sheet p. 27). Response: Phosphorus settling/uptake is expected in stream systems. Phosphorus reduction is not a response variable that indicates impairment, and by itself has no significance for designated use attainment. As discussed in comment 5, the Cocheco River has specific characteristics that allow phosphorus assimilation without causing nuisance algal conditions.

Claim: "Elevated levels of macrophytes"; "emergent and submergent aquatic vegetation…aquatic bryophytes". (Draft Fact Sheet p. 26) Response: EPA uses terms such as "elevated" aquatic macrophyte conditions, but does not link the conditions to non-attainment, quantify what level of aquatic macrophyte abundance would indicate designated uses have been attained, or demonstrate a useful relationship between external nutrient loads and macrophyte abundance. Most of these plants are native plants growing in normal densities and do not represent nuisance growths. EPA has no basis for citing these plants as impairments.

NHDES also cites the Cocheco River as having high densities of variable milfoil. This rooted aquatic plant is not native to New Hampshire but has become established in many water bodies throughout the state (NHDES, 2019a). A literature review (Brown and Caldwell, 2017; Exhibit B) revealed that rooted macrophytes obtain nutrients from the sediment and can practice luxury nutrient consumption. As a result, rooted macrophytes are usually limited by space/light rather than by nutrient concentrations and can proliferate even in oligotrophic water bodies. In fact, most of the water bodies with abundant milfoil in New Hampshire are lakes with relatively low nutrient concentrations. There is essentially no record of controlling rooted macrophytes such as milfoil by external nutrient load reductions. Potential control strategies cited by NHDES (2019b) include hand-pulling, diver-assisted suction harvesting, benthic barrier placement, and herbicide treatment. The lack of practical nutrient control options for invasive rooted macrophytes is also emphasized by the fact that submergent and emergent vegetation is also abundant upstream of the Rochester WWTP outfall, despite much lower phosphorus concentrations (Brown and Caldwell 2018, 2020, Exhibits C and D).

Claim: "Elevated levels of algal growth" "algal mats less than 1 mm thick". (Draft Fact Sheet p. 26-27) Response: The City believes that these EPA statements regarding elevated algal levels are arbitrary and without merit. They are not based in any regulatory standard, non- regulatory guideline, or recreational threshold. In fact, the visual periphyton scores were in the range of ~1—2 on a scale that runs from 0 to 4, indicating moderate productivity (Brown and Caldwell, 2018, 2020; Exhibits C and D). There was no apparent relation between visual periphyton scores and up-stream/downstream position relative to the Rochester WWTF or to total phosphorus

concentration. Extensive monitoring reveals that benthic algae were not observed to reach nuisance levels in the Cocheco River (Exhibits A, B, C, and D), and EPA has no basis for claims such as algal mats "greater than 1 mm thick" represent impairments. The algal conditions were consistent with a conceptual model of strong light limitations that allow moderate levels of algal growth and assimilation of phosphorus.

Claim: "Dissolved oxygen levels." (Draft Fact Sheet p. 28) Response: EPA presents DO data from more than four miles downstream of the City's discharge point as evidence of the need for further reductions in TP concentrations in the draft NPDES permit. EPA references three individual DO observations ranging from 104 to 117 percent saturation in August of 2017 from the Watson Road dam downstream to the Dover Dam. These measurements were taken in the late morning and early afternoon hours when photosynthetic activity typically results in higher saturation levels. While these measurements are an indication that photosynthetic activity was taking place, they do not indicate non-attainment of any designated use.

Additionally, EPA presents DO concentration data from within the Watson Dam impoundment measured on six days in August 2019. EPA claims DO measurements below 5 mg/L taken from below 2 meters in depth are evidence of the reasonable potential for the City's discharge to cause or contribute to cultural eutrophication and must be treated to remove phosphorus. However, DO measurements taken from depth are typically lower than surface measurements and for this reason are not used in use assessments (NHDES 2022). In impoundments such as the Watson Dam, NHDES requires DO measurements from the epilimnion (if stratified) and from the upper 25 percent of depth (if not stratified) (NHDES 2022). This does not appear to be the case for the measurements presented by EPA. DO measurements below 5 mg/L at depth are not indicative of cultural eutrophication, but rather indicative of natural processes in lakes and impoundments that result in increased oxygen demand compared to surface waters. Therefore, EPA's assessment of DO non-attainment is not relevant to the discussion of the need for a reduced TP concentration limit in the City's NPDES permit.

Claim: "Pervasive" or "elevated" duckweed (Draft Fact Sheet p. 26-29), Response: We placed floating plants last in this sub-comment list because we believe it merits the most consideration both with regard to interpretation of NH's narrative nutrient standard and exploration of potential phosphorus linkages. The City's own monitoring studies have confirmed the presence of duckweed in limited locations and times in the Cocheco River (Brown and Caldwell, 2016; attached as Exhibit A). However, the visible occurrence of this native plant does not necessarily indicate an impairment of designed uses, and the phosphorus limit proposed by EPA lacks any quantitative or even semi-quantitative link to a reasonable goal for floating plant coverage in the Cocheco River. The City proposes to explore such linkages through the special permit condition discussed in comment 6. In the meantime, EPA's assertions of "pervasive" duckweed growth as a basis for the proposed phosphorus limits are not supported, for the following reasons:

The floating plant biomass is not "pervasive" in space nor in time: An initial review of 15 historical aerial/satellite images from 1998 to 2022, we found that:

- 10 images showed negligible floating plant coverage on the Cocheco River between the outfall and Dover.

- images showed only small patches of coverage; primarily in the immediate vicinity of dams that retain floating material transported from upstream.
- Only 1 image (October 2020) showed a higher coverage near dams.

This simple evaluation is not comprehensive, and there is an opportunity to refine it with a systematic review of more frequent satellite imagery (e.g., Landsat) that might also compare coverage with season, streamflow, phosphorus loading. This is a topic for the special condition recommended in comment 6. In the meantime, the data do not support statements that duckweed coverage is either pervasive or frequent. Small patches of floating vegetation in the immediate vicinity of dams do not represent exceedances of NH's narrative standard.

The relation between floating plants and phosphorus loads is currently undefined. EPA assumes but makes no demonstration that the proposed duckweed will respond to point source phosphorus controls, and that the proposed phosphorus limit is the correct control level. Duckweed is part of the natural flora of New Hampshire water bodies, and is common in lakes, ponds, and other stagnant waters throughout the state[20]. In the non-tidal Cocheco, duckweed appears to be favored by dam backwater effects that create ideal hydraulic conditions for duckweed accumulation. The spatial pattern of duckweed occurrence is consistent with advective transport from upstream segments and accumulation in the most stagnant locations. Under this hydraulic regime, it would not be necessary to have high rates of duckweed growth in order for short segments of visible duckweed to develop under favorable conditions.

An extensive literature review (Brown and Caldwell, 2016; Exhibit A) revealed considerable uncertainty regarding the practicality of controlling duckweed growth with nutrient controls in impoundments. The scientific literature suggests that if temperature, light, and hydraulic conditions are favorable, duckweed can grow even under low nutrient concentrations[21]. As stated by Leng and others[22]:

> As a generalization, duckweed growth is controlled by temperature and sunlight more than nutrient concentrations in the water. At high temperatures, duckweeds can grow rapidly down to trace levels of P and N nutrients in water.

Other references infer linkages between floating biomass and nutrient concentrations. However, the literature has little in the way of demonstrated, point source-drive reductions in total floating biomass. For example, the Massachusetts Department of Environmental Protection (MDEP) set similar limits on phosphorus for POTWs as that proposed for the Rochester discharge, in part for the purposes of reducing biomass of aquatic macrophytes[23]. That TMDL modeling study acknowledges considerable limitations/uncertainties on the practicalities of limiting floating

[20] N.H. Department of Environmental Services. 2007. Aquatic Plants and Algae of New Hampshire's Lakes and Ponds. 102 p.
[21] Hasan, M. and Chakrabarti, R. 2009. Use of algae and aquatic macrophytes as feed in small-scale aquaculture. Fisheries and Aquaculture Technical Paper 531, Food and Agricultural Organization of the United Nation. 135 p.
[22] Leng, R.A., J H Stambolie and R Bell. 1995. Duckweed - a potential high-protein feed resource for domestic animals and fish. Livestock Research for Rural Development. Volume 7, Number 1.
[23] Massachusetts Department of Environmental Protection, 2004, Assabet River Total Maximum Daily Load for Total Phosphorus, Report Number: MA82B-01-2004-01, Control Number CN 201.0, Massachusetts Department of Environmental Protection.

plant biomass with point source controls. Since then, monitoring has revealed significant phosphorus reductions and interannual variations in duckweed on the Assabet River, but total floating plant biomass has actually increased[24].

We do not raise this issue of uncertainty to negate the possibility of a useful link between phosphorus loads and floating biomass. Rather, we believe there is an opportunity to use the City's long-term data on phosphorus loading in conjunction with image- and field-based estimates of floating plant coverage to explore the linkage and inform the correct level of phosphorus controls. For example, a systematic analysis might reveal the seasonal, streamflow, and phosphorus loading conditions associated with higher levels of floating plant coverage (e.g., October 2020) with other conditions in which coverage is much lower.

iii. Regulatory action related to floating plants should be based on a measurable and reasonable goal. Assuming that there is a useful link between phosphorus and floating plant coverage, planning/permitting should be based on a reasonable goal for floating plant coverage. Considering that duckweed is a species that naturally grows in NH waters, it would not be appropriate that the goal be "no duckweed". Similarly, the hydraulic properties of impounded rivers will inevitably allow a certain amount of accumulation of floating vegetation near dams or other obstructions under favorable seasonal and streamflow conditions. As part of a Phosphorus Linkage Study, we recommend a review of related goals set for other rivers, in conjunction with a more detailed evaluation of the spatial extent and frequency of floating plant coverage on the Cocheco. This information can be interpreted to set a measurable goal for floating plant coverage on the Cocheco River, to include both magnitude and frequency components.

Response 33

The commenter mischaracterizes EPA's summary of its evaluation of the qualitative (visual algal/macrophyte surveys) and quantitative (water quality sampling) studies that were conducted in the non-tidal and tidal reaches of the Cocheco River from 2015-2017[25] (the 2015, 2016, and 2017 Reports) as well as in 2019[26] (the 2020 Report). As noted in the Fact Sheet, the 2015-2017 reports were provided to EPA by the City of Rochester to review during the development of the draft permit, and which were subsequently re-submitted as appendixes to the City's comments. The 2020 report was part of a study that was conducted as part of a Federal Energy Regulatory Commission (FERC) investigation for two dams on the Cocheco River. See the Fact Sheet at 25-33.

Before addressing the specific objections individually, EPA first disagrees with the underlying basis of these comments. The commenter's rationale for opposing the phosphorus limit appears to be largely based on a claim that the Cocheco River is not "impaired" for phosphorus and their contention that EPA's analysis does not sufficiently

[24] Field-Juma, Alison and Roberts-Lawler, N. Using Partnerships and Community Science to Protect Wild and Scenic Rivers in the Eastern United States. Sustainability 20201, 13, 2102

[25] Technical Memorandum: Visual Algal Survey of the Cocheco River, Brown and Caldwell, May 2016. 2016 and 2017 Field Investigations of the Cocheco River and Regional Waters, Brown and Caldwell, May 2017 and April 2018.

[26] Cocheco Falls (FERC No. 4718) and Watson (FERC No. 6240) Projects FERC Relicensing 2019 Study Report, Americas Energy Services and Lakeside Engineering Inc., January 2020.

support a finding that the downstream segments are "impaired" for phosphorus. The commenter is conflating the process of designating a waterbody as impaired under CWA section 303(d) with the process of determining whether a discharge has the "reasonable potential" to cause or contribute to an excursion of water quality standards based on 40 C.F.R. § 122.44. EPA notes, as discussed also in Response 2, that a 303(d) listing is not a prerequisite to determining there is a reasonable potential for a discharge to cause or contribute to an excursion above an applicable water quality criterion. NHDES creates the 303(d) list, subject to EPA approval, in an entirely separate process from EPA drafting a NPDES permit. *See Keene* at 726-727.

As clearly presented in the Fact Sheet at 25-33, EPA's site-specific analysis was not designed to indicate a phosphorus impairment but, rather, supported the following three findings:

(1) At least certain segments of the freshwater Cocheco River downstream of Rochester's discharge (such as the impoundment above the Watson Road dam) are not less susceptible to phosphorus levels such that application of the Gold Book target of 0.1 mg/L would be considered too low.
(2) There is ample evidence of eutrophication in these downstream segments (including photos presented in Fact Sheet at 27 and 29 and DO impairment described in Fact Sheet at 30) at instream phosphorus levels above the target of 0.1 mg/L.
(3) Rochester's discharge is a significant contributor of phosphorus to these downstream river segments such that the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards.

Importantly, the impairment status of the receiving water with respect to phosphorus is a separate analysis that EPA did not undertake in the development of the Rochester Draft Permit. As has been established in the Environmental Appeals Board and the First Circuit, EPA's NPDES regulations do not require cause-and-effect proof between a pollutant discharge and an existing water quality impairment before establishing a numeric in-stream target to interpret a narrative water quality criterion, or before imposing a water quality-based effluent limitation to implement that criterion. EPA's determination of whether a source has the "reasonable potential to cause or contribute" to an exceedance of a water quality standard does not require a conclusive demonstration of cause and effect. Under 40 C.F.R. § 122.44(d)(1)(i), EPA is required to determine whether a given point source discharge "cause[s], ha[s] the reasonable potential to cause, or contribute[s] to an excursion above" the narrative or numeric criteria set forth in state water quality standards. Thus, the regulations require nothing more than a reasonable potential determination for the discharge to cause or contribute to an excursion of a numeric or narrative state water quality criterion; whenever such a potential exists, a permit must contain effluent limits to meet state water quality standards. Importantly, EPA notes that it is obligated to ensure protection of designated uses in the receiving water, including segments in the immediate vicinity of the permitted discharge as well as farther downstream of a permitted discharge.

In this case, not only is it unnecessary for EPA to establish a downstream phosphorus impairment but it is also not possible to establish such an impairment, regardless of the condition of the receiving water, as described below. The State of New Hampshire is responsible for identifying and listing impaired and threatened waters on a "303(d) list," based on CWA Section 303(d). To develop this list, NHDES has established a Consolidated Assessment and Listing Methodology (CALM)[27] with measurable thresholds for impairment with respect to a wide variety of pollutants. With respect to Total Phosphorus (River & Riverine Impoundments) found on pages 97-99 of the CALM, there is no methodology for listing any such segment as impaired for phosphorus. The only threshold presented is the following:

- II-PAS (Potentially Attaining Standards): Median total phosphorus is below 50 µg/L and there are no dissolved oxygen impairments.
- II-PNS (Potentially Not Supporting): Median total phosphorus is above 50 µg/L or there are dissolved oxygen impairments.

Therefore, under the current methodology applied by NHDES it would be impossible to list a river segment as impaired for phosphorus and it is no surprise that the Cocheco River does not have any such listing regardless of the condition of the river. This lack of any identification of phosphorus impairments (for 303(d) listing purposes) does not have any significant impact with respect to downstream water quality and should not be used to justify the continued discharge of elevated levels of phosphorus. See also Response 2.

With this clarification of EPA's analysis in view, EPA will also respond to the specific objections raised by the commenter as well as note several inconsistencies between the statements made by the commenter and the information presented in the Fact Sheet.

In the first claim above, the commenter seems to agree with EPA that this significant drop in phosphorus load indicates phosphorus uptake in the impoundment, but then attempts to reframe EPA's characterization of the data as an affirmative statement that the decrease in detected instream phosphorus concentration means that the receiving water is impaired. This reframing ignores the key fact, documented in the Fact Sheet at 27, that the same stretch of water which saw this significant phosphorus uptake also experienced elevated levels of algal growth and coverage and pervasive duckweed growth. In other words, this drop in phosphorus was not simply assimilated into the waterbody innocuously, rather, it fueled these indicators of cultural eutrophication. This supports the finding that the discharge has the reasonable potential to cause or contribute to a violation of the state's narrative water quality criteria for nutrients.

Also see Response 2 for a detailed response to the commenter's assertion that site-specific characteristics of the Cocheco River allow for phosphorus assimilation without causing nuisance algal conditions.

[27] The most updated 2020/2022 CALM can be found at: https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/r-wd-20-20.pdf.

In the second claim above, the commenter references the terms "Elevated levels of macrophytes"; "emergent and submergent aquatic vegetation…aquatic bryophytes" on page 26 of the Fact Sheet. In like manner, EPA has not made any assertions equating the presence and abundance of the aquatic macrophytes in the Cocheco River to an impairment of designated uses. Rather, EPA determined that the results of the algal surveys conducted in 2015 both upstream and downstream from the Rochester WWTF suggest that the discharge has the reasonable potential to cause or contribute to cultural eutrophication downstream and that the effluent must be appropriately treated to reduce phosphorus to levels which will ensure attainment and maintenance of the state's narrative water quality criteria for nutrients (see Fact Sheet page 26). This is further demonstrated when the results of the 2015 algal survey are analyzed in conjunction with the results of the water quality studies and algal surveys conducted in 2016, 2017 and 2019, as well as the instream and effluent total phosphorus data that were collected from 2016-2021 (see Fact Sheet pages 26-32). The comment appears to assert that the level of algal growth indicates a healthy waterbody and capacity to assimilate the City's phosphorus discharge. New Hampshire's water quality standards defined "cultural eutrophication" as "the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen." Env-Wq 1702.15. EPA documented in its Fact Sheet both a listed impairment for dissolved oxygen in the receiving waters and visual algal surveys documenting demonstrated elevated levels of macrophytes, algal mats less than 1 mm thick and/or pervasive duckweed growth. *See* Fact Sheet at 26-27. NHDES has not established a "quantitative" standard for determining "excessing plant growth," as called for by the comment, and so EPA must exercise its technical expertise in determining what meets this standard. Based on EPA's experience and expertise, the level of plant growth documented in the receiving water, along with the other site-specific factors analyzed, demonstrated the presence of cultural eutrophication.

Next, the commenter mentions a NHDES finding regarding milfoil and raises concerns that rooted macrophytes obtain nutrients from the sediment and are not easily controlled by external nutrient load reductions. EPA notes that rooted macrophyte growth (such as milfoil) were not included in EPA's finding (neither in the Fact Sheet nor in Response 2 above) that the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards related to eutrophication. Therefore, the proposed phosphorus limit is not derived to prevent rooted macrophyte growth in these downstream waters. In any case, the following response to the issues raised in the comment are provided. First, the commenter points to NHDES's finding of the "Cocheco River as having high densities of variable milfoil" (but does not provide any citations) and then states that "this rooted aquatic plant is not native to New Hampshire but has become established in many water bodies throughout the state". EPA is required to protect WQS, regardless of whether an aquatic macrophyte is invasive or not. In general, the presence of "dense growth" of rooted aquatic plants, which, as pointed out in the comment, "can obtain nutrients from the sediment and can practice luxury nutrient consumption", provides further evidence of the need to control the concentration of phosphorus because phosphorus in the water column can be sequestered by the sediments, which can then be taken up by rooted macrophytes and may result in its

growth reaching high densities. The commenter quotes a study from New Hampshire which found that "…Watershed/nutrient abatement strategies have little or no effect on the growth of rooted vegetation species, as these plants derive the bulk of their nutrient requirements directly from the bottom sediments". This statement points to the importance of controlling excess inputs of phosphorus to limit the amount of phosphorus accumulation that may occur in the sediments where it would become available for uptake by rooted aquatic macrophytes. In fact, this study expands upon this statement, concluding with "However, watershed and nutrient abatement strategies should be considered, where applicable, for long-term management and improvement of water quality[28]." In any case, EPA's analysis in the development of the permit did not consider milfoil or other rooted macrophytes (as mentioned above) and EPA confirms that the proposed phosphorus limit is not impacted by this comment and response regarding milfoil or other rooted macrophytes.

In the third claim above, the commenter mentions the statements "Elevated levels of algal growth" and "algal mats less than 1 mm thick." Again, EPA did not claim that these observations represent an impairment as the comment suggests. Rather, EPA noted that these observations suggest that the receiving water does not have an increased assimilative capacity for phosphorus above the 0.1 mg/L Gold Book target before evidence of eutrophication begins to be manifested. See Fact Sheet pages 26-27. Further, EPA's statements in the Fact Sheet describing the observed algal growth (*i.e.*, "elevated levels of algal growth" and "algal mats less than 1 mm thick") were taken directly from the reports provided to EPA by the Permittee while the Draft Permit was being developed and which were subsequently re-submitted to EPA as an attachment to the comments on the Draft Permit (the 2016, 2016 and 2017 reports). To the extent the comment suggests the phosphorus discharge is not causing or contributing to eutrophication because conditions immediately upstream of the outfall are similar to conditions immediately downstream, EPA reiterates that its focus was on the more vulnerable segments farther downstream (*i.e.*, especially NHRIV600030608-03 and NHIMP600030608-02), where conditions do differ and signs of cultural eutrophication are readily apparent. See also Response 34 and 35.

In the fourth claim above, the commenter objects to EPA's analysis of the dissolved oxygen (DO) data that was collected in 2017 (which was included in the 2017 Report that was submitted to EPA by the Permittee) as well as in 2019 (which was included in the Federal Energy Regulatory Commission report on the Watson and Cocheco Falls dams). The comment suggests that downstream DO supersaturation merely demonstrates photosynthetic activity is occuring and does not indicate non-attainment of any designated use. As stated above, EPA's analysis does not require a demonstration of non-attainment of a designated use (*i.e.*, impairment) in order to establish a permit limit based on a finding of the reasonable potential to cause or contribute to an excursion of the state's narrative water quality standard for nutrients. However, with regard to DO there

[28] Aquatic Control Technology. (2015). 2015 Aquatic Vegetation Survey Report, Millville Lake, Salem, New Hampshire.

is, in fact, a downstream impairment. This impairment was described in the Fact Sheet at 29 as follows:

> Lastly, in the New Hampshire Year 2018 Integrated List of Waters ("303(d) List"), dissolved oxygen saturation is identified as causing impairment of the aquatic life designated use in the downstream segment of the Cocheco River where Station 4 was located (Assessment Unit NHRIV600030608-03). While EPA notes that a permit limit can be established [based on 40 CFR § 122.44(d)(1)(vi)] even without the presence of a downstream water quality impairment, this downstream impairment does provide further evidence of downstream water quality problems for a parameter (dissolved oxygen) that is linked to cultural eutrophication as described above and, therefore, supports EPA's determination below.

This citation from the Fact Sheet reiterates that EPA's analysis is focused on assessing whether the discharge has the reasonable potential to cause or contribute to an excursion of water quality standards and not on establishing any impairment status downstream. Therefore, the existing DO impairment is used as one of many supporting factors.

Regarding the timing of the collection of DO samples in 2017, EPA agrees that the results are indicative of photosynthetic activity and notes that the time of sample collection did not include the early morning hours in which one would expect DO levels to be indicative of the degree of plant respiration (*i.e.*, hypoxia). Therefore, it is not surprising that DO supersaturation was observed during the time of sample collection rather than low DO concentrations which would be more likely to be found in the early morning hours when no sampling was performed. This timing consideration was mentioned in the Fact Sheet at 28 which the comment does not seem to address.

The comment also notes that DO measurements below 5 mg/L at a depth of greater than 2 meters are not indicative of cultural eutrophication, but rather indicative of natural processes in lakes and impoundments that result in increased oxygen demand compared to surface waters. However, data collected in 2019 for the Federal Energy Regulatory Commission on the Watson and Cocheco Falls hydroelectric projects shows that the dissolved oxygen continuous loggers, which were deployed in the upper 25% of the water column of the Watson and Cocheco Falls impoundments,[29] measured dissolved oxygen below 5 mg/L and dissolved oxygen saturation below 75%, which are the NHDES thresholds for dissolved oxygen impairment. At Station 5, in the Watson Dam impoundment, the dissolved oxygen dipped below 5 mg/L frequently from August 5 through August 16 of 2019, and the daily average dissolved oxygen saturation was below 75% from August 5 through August 9 of 2019 and was 50% on August 8, 2019[30].

[29] FERC. (2017). Water Quality Study Sampling and Analysis Plan for the Cocheco Falls (FERC No. 4718) & Watson (FERC No. 6240) Projects.
[30] FERC. (2020). FERC Relicensing 2019 Study Report for Cocheco Falls (FERC No. 4718) & Watson (FERC No. 6240) Projects.

Additionally, it should be noted that the occurrence of supersaturation despite lower instream total phosphorus concentrations (relative to 2016 [see the 2016 report]) provides further evidence supporting EPA's conclusion that there is not an increased assimilative capacity in these downstream locations of the receiving water, and that a limit is necessary to protect water quality standards (see Fact Sheet p.28). Similarly, EPA did not make any determinations with respect to impairment status in its analysis of the data from the 2019 report. Rather, one would expect DO concentrations that violate WQS to occur in areas experiencing algal growth. Therefore, the data from the 2019 report supports EPA's finding.

The fourth and final claim in this comment is regarding "pervasive" or "elevated" duckweed. The commenter suggests that duckweed growth does not indicate impairment for phosphorus without a "quantitative or even semi-quantitative link to a reasonable goal for floating plant coverage." Again, the commenter seems to misconstrue the water quality assessment process with the permitting process. EPA did not attempt to assess the impairment status of the downstream waters with respect to floating plant coverage, which would have required establishing a reasonable goal for floating plant coverage. Rather, EPA simply found that the observed duckweed growth, in combination with other information presented in the Fact Sheet at 25 to 33, confirms that the Rochester discharge has the reasonable potential to cause or contribute to an excursion of the state's narrative water quality standard for nutrients. Specifically, the NH WQS relative to nutrients states that nutrient discharges cannot "encourage cultural eutrophication". [Env-Wq1703.14] and then defines cultural eutrophication as "the human-induced addition of wastes containing nutrients to surface waters which results in excessive plant growth and/or a decrease in dissolved oxygen" [Env-Wq 1702.15]. Importantly, this WQS and definition do not exclude natural flora (*e.g.*, duckweed), nor do they exclude more susceptible locations (*e.g.*, upstream of dams). The comment suggests that EPA must demonstrate several additional factors before setting a limit, such as the magnitude of duckweed growth, the frequency of duckweed growth, and the precise response expected by controlling nutrients, and proposes a study be undertaken to investigate these things before setting a phosphorus limit. EPA disagrees that these details are necessary before setting a permit limit for the reasons specified above.

Further, the comment cites scientific literature that indicates duckweed is more dependent on temperature and sunlight than nutrient levels and duckweed can grow even under very low levels of nutrients. EPA acknowledges these points but notes that the nutrient load, as opposed to sunlight and receiving water temperature, is the most-readily controllable factor that can prevent eutrophication. *See* Gold Book at 27 ("of all of the elements required for plant growth in the water environment, phosphorus is the most easily controlled by man."). While EPA expects that the limit proposed in the Draft Permit will ensure the protection of water quality standards, extreme sensitivity to nutrient levels in downstream waters would only require more stringent effluent limits in the future. Moreover, EPA is not limited to setting permit limits only where such a limit will conclusively result in the complete abatement of degraded water quality, as the comment seems to suggest. Rather, when EPA determines that a discharge has the reasonable potential to *cause or contribute* to an excursion of WQS, then it must establish a

WQBEL, as it did here. The comment's focus on the complete abatement is thus misplaced, as the proper analysis is on the discharge's contribution to the problem.

Exhibit B of the commenter's supporting materials asserted that "Gerard and Triest (2014) found no difference in duckweed growth rates between eutrophic (30-100 µg/L phosphorus) and mesotrophic (10-30 ug/L phosphorus) conditions. Rather, oligotrophic (0-10 µg/L phosphorus) conditions were required to significantly reduce growth rates." However, this study also found that a reduction of phosphorus concentration from hypereutrophic (>100 µg/L) to eutrophic (30 - 100 µg/L) led to "important negative impacts on the relative growth rate" of invasive duckweeds[31]. For comparison, the commenter's own submitted materials (Exhibit D: Non-Tidal Cocheco River Data Matrix) show median phosphorus concentrations of

- 326 µg/L in NHRIV600030607-15 downstream of the Rochester WWTF,
- 250 µg/L in NHRIV600030608-03, the next downstream segment, and
- 140 µg/L in NHIMP600030608-02, the Watson Dam impoundment.

While reduction of phosphorus concentrations to an oligotrophic level would be ideal, smaller reductions from the current hypereutrophic conditions to merely eutrophic conditions should result in reductions of duckweed growth in the downstream segments of the Cocheco River and its impoundments.

Additionally, EPA notes that the comment confirms that "temperature, light and hydraulic conditions" are favorable for encouraging plant growth in certain locations downstream of the Rochester discharge, and that even low levels of instream phosphorus may encourage cultural eutrophication, thus, further supporting EPA's determination that the discharge has the reasonable potential to cause or contribute to violations of state's narrative WQS. At a minimum, this confirms that the Gold Book target of 0.1 mg/L as applied in the development of the Draft Permit is necessary to bring the downstream waters from a hypereutrophic status to a eutrophic status which is expected to reduce the growth rate of duckweed. Anything less stringent would maintain a hypereutrophic status in these downstream waters and allow duckweed growth rates to continue unabated at a level EPA has documented will continue to result in cultural eutrophication.

Finally, regarding the proposed phosphorus linkage study suggested in the comment, the City is welcome to undertake such a study and to submit the results to EPA for consideration, as such information may inform future permit decisions. It should be noted that the results of such a study may demonstrate that a much lower instream total phosphorus target is necessary to fully protect WQS in all downstream water segments under critical conditions. At this time, however, EPA must make permitting decisions based on all information available at the time of permit issuance, and the total phosphorus limit in the Final Permit remains unchanged from the Draft Permit.

[31] Gerard, J., & Triest, L. (2014). The effect of phosphorus reduction and competition on invasive lemnids: life traits and nutrient uptake. *ISRN Botany*. doi:http://dx.doi.org/10.1155/2014/514294

Comment 34

Multiple lines of evidence support lack of phosphorus impairments. Comment 1 above addresses specific EPA claims of nutrient-related impairment in the Cocheco. But beyond those claims, the available water quality and biological data support a positive interpretation of the Cocheco River's health and ability to assimilate nutrients. Much of this evidence was compiled by Brown and Caldwell (2020) (Exhibit D), which summarized multiple data types from multiple sources (e.g., NHDES, City of Rochester) both upstream and downstream of the City's outfall. The analysis focused on summer low-flow conditions to increase the likelihood of detecting nutrient impacts, if they were present. An evaluation of the most recent 10 years of data indicated the following:

Favorable dissolved oxygen concentrations: Both discrete measurements and DES sonde deployments showed favorable dissolved oxygen concentrations. Only a single grab sample (out of 145 under the selected conditions) has a DO concentration less than the water quality criterion of 5 mg/L, and that value was only slightly lower (4.9 mg/L). NHDES installed data loggers in three assessment units (NHRIV600030607-15, NHIMP600030608-02, and NHRIV600030608-03) over the data period, and none showed 24-hour minimum DO concentrations to fall below 5 mg/L.

No pH impacts: Values of pH were moderate on the Cocheco River below the Rochester WWTF under summer low flow conditions. The 90th percentile pH values were 7.5 or lower for all segments. Fewer than 3 percent of observations exceeded the water quality criterion of 8.0 in all segments. These data provide direct evidence that algal/plant growth rates are not high enough to cause pH exceedances on the Cocheco River.

Low chlorophyll-a: The 12 chlorophyll-a measurements taken under low-flow summer conditions had a median value of 3 ug/L. None exceeded the value used for assessment in non-tidal river segments (15 ug/L).

No nutrient-related impacts to benthic macroinvertebrates: The majority of the B-IBI scores (9 of 12) available for the Cocheco River since 2004 exceeded the relevant B-IBI threshold, indicating attainment of aquatic life uses. This included about 70% (5 of 7) of the scores from upstream of the Rochester WWTF outfall and 80% (4 of 5) of the scores from downstream of the Rochester outfall. Considering all observations, the median B-IBI score upstream of the Rochester WWTF was 61.0, and the median score downstream of the Rochester WWTF was 62.6. This was the case even though phosphorus concentration increased downstream of the outfall. The two lowest B-IBI scores were measured in September 2016 during a special NHDES evaluation of the Cocheco near the Rochester WWTF outfall. The scores upstream of the outfall (at CCH-16) and downstream of the outfall (at CCH-15) were similar, showing that the scores were unlikely to be related to ambient phosphorus levels.

Moderate algal levels: Visual periphyton scores were in the range of ~1—2 on a scale that runs from 0 to 4, indicating moderate productivity. As with B-IBI scores, there was no apparent relation between visual periphyton scores and up-stream/downstream position relative to the Rochester WWTF or to total phosphorus concentration. Benthic algae were not observed to reach nuisance levels at the segment. The algal conditions were consistent with a conceptual model of

strong light limitations that allow moderate levels of algal growth and assimilation of phosphorus.

Response 34

This comment attempts to demonstrate multiple lines of evidence supporting the lack of phosphorus impairments in the Cocheco River as evidence of the overall health of the Cocheco River. This comment is unpersuasive for three reasons. First, there does not need to be an impairment for EPA to determine that the discharge has the reasonable potential to cause or contribute to cultural eutrophication in the receiving water and to violations of the state's narrative WQS. Second, it is impossible for the segments to be listed as impaired for phosphorus, regardless of the level of water quality in the river, because the NH CALM does not include a methodology for assessing rivers or riverine impoundments with respect to phosphorus impairment. Third, a downstream segment, NHRIV60030608-03, is listed as impaired for dissolved oxygen saturation in the 2018 and 2020/2022 New Hampshire 303(d) Lists. Each of these three items were discussed in more detail in Response 33 above.

Having said that, EPA has also responded below to each of the lines of evidence described in the comment.

Regarding dissolved oxygen, EPA notes that the continuous dissolved oxygen data cited in the comment range from 2003 through 2016. A more recent study by the Federal Energy Regulatory Commission (FERC) in 2020 included several occasions with DO less than 5 mg/L in the impoundment, near the Watson and Cocheco Falls dams.

Further, this study documented an anoxic event in the Watson Dam impoundment in August 2019 where the benthic dissolved oxygen concentration was measured as 0.2 mg/L in the deepest part of the impoundment. While the commenter has noted that NHDES only uses DO measured in the top 25% of water depth in assessments, benthic anoxia in a riverine impoundment does not support a resilient ecosystem and violates NH WQS at Env-Wq 1703.07(d) which states "Unless naturally occurring, the dissolved oxygen content below those depths [*i.e.*, below the top 25%] shall be consistent with that necessary to maintain and protect existing and designated uses." While such events may be interspersed with higher dissolved oxygen periods due to rain events or variations in dam operation, anoxic events have long lasting deleterious effects on benthic biota[32]. Anoxic conditions may cause the release of phosphorus from sediments, fueling further plant growth in the impoundment[33].

Regarding pH, EPA notes that the Fact Sheet never discussed pH exceedances to justify a phosphorus limit. The comment points to the absence of high pH as proof that algal growth is not causing pH exceedances in the river. However, given that the receiving

[32] Jaiswal, D., & Pandey, J. (2019). Hypoxia and associated feedbacks at sediment-water interface as an early warning signal of resilience shift in an anthropogenically impacted river. *Environmental Research, 178*.
[33] Orihel, D. M., Baulch, H. M., Casson, N. J., North, R. L., Parsons, C. T., Seckar, D. C., & Venkiteswaran, J. J. (2017). Internal phosphorus loading in Canadian fresh waters: a critical review and data analysis. *Can. J. Fish. Aquat. Sci., 74*, 2005-2029.

water segment and downstream segments are listed as impaired for low pH (likely due to acid rain), one would not expect to see high pH exceedances in the river regardless of algal growth.

Chlorophyll a analysis is a phytoplankton detection method and does not account for macrophytes. *See* Nutrient Criteria Technical Guidance Manual at 44 ("Macrophytes can inhibit phytoplankton growth by competing for nutrients and sunlight, and by limiting light penetration and therefore photosynthetic processes below the surface."). In a situation where duckweed or other leafy plant matter is present in a chlorophyll a sample, the investigator will manually remove it from the sample. It is expected that in situations where duckweed is shading the water surface, the presence of phytoplankton would be less than it would otherwise be given the nutrient concentrations in the water column.

EPA also notes that among the 12 chlorophyll a samples mentioned in the comment, none were taken in segment NHRIV600030608-03 (which is impaired for DO saturation and only 2 were taken in segment NHIMP600030608-02 (just upstream of the Watson Dam). Notably, these 2 samples were the highest of the 12 (*i.e.*, 7.2 and 11.5 ug/L), supporting EPA's finding that eutrophication is more likely to occur in these more susceptible downstream segments. See Response 35 below for more detail.

Regarding benthic macroinvertebrates, according to the 2018 Assessment Summary for AUID NHRIV600030607-15, five invertebrate samples have been collected since 2011. Three of the five samples (2011, 2012, and 2013) had B-IBI ratios greater than the 1.0 threshold. The two most recent samples collected in 2016 from two different locations in the AUID had B-IBI ratios below the 1.0 threshold. B-IBI ratios (B-IBI score/B-IBI Threshold) less than 1.0 indicate the invertebrate community fails to meet the narrative aquatic life use water quality criteria. This designation was carried through to the 2020/2022 NHDES Watershed Report Card.

Regarding algal levels, the commenter states that algal productivity is moderate based on visual bucket surveys, and that there was no apparent difference in algal growth in locations upstream or downstream of the discharge. The commenter goes on to state that benthic algae were not observed to reach nuisance levels "at the segment," without specifying which segment is being referred to, and concludes that this is consistent with the conceptual model of strong light limitation. Assuming these refer to locations within the segment receiving Rochester's discharge (*i.e.*, NHRIV600030607-15), it is not surprising that algal levels are not immediately impacted by the elevated levels of phosphorus from the discharge. As discussed in more detail in Response 35 below, the receiving water in the vicinity of the discharge appears to be more light-limited than the more vulnerable segments of the receiving water farther downstream (*i.e.*, especially NHRIV600030608-03 and NHIMP600030608-02).

Comment 35

The Cocheco River has specific characteristics that aid in the assimilation of phosphorus. In promoting a simplistic, one-size-fits-all phosphorus permitting approach, EPA has not recognized the specific characteristics of the Cocheco River that increase phosphorus

assimilative capacity and reduce nutrient impacts. In the vicinity of the City's outfall and for more than 4 river miles downstream, the river is relatively narrow (~50 ft) and has abundant shading from a riparian corridor that mostly consists of relatively tall and dense tree cover (Figures 1 and 2). Even where nearby land uses are not forest, a forest buffer is maintained. The river widens somewhat at 4-5 river miles below the outfall but maintains a forested riparian corridor all the way to Dover.

In addition to high shading from the riparian corridor, the Cocheco River has naturally high levels of dissolved humic substances and TOC (5-10+ mg/L) that impart color to the water and further increase the light limitation on algal/plant growth (Figure 1). For example, color measures at station CCH-18 ranged from 140 to 210 PCU. To put these values in context, the Maine Department of Environmental Protection (2021) defines "colored" as water having >25 PCU, and states that:

> Natural environmental conditions [mitigate] the impact of phosphorus enrichment and the risk of those conditions changing. For example, limiting factors can reduce light availability (e.g., shade, turbidity, water color), bind phosphorus (e.g., clay, dissolved organic carbon…can make phosphorus unavailable for plant growth)…

The light limitations imposed by the combination of shade and natural color do not prevent algal growth in the Cocheco River; rather, they limit algal growth rates to moderate levels, such that phosphorus can be assimilated without causing nuisance levels of periphyton. These segment-specific characteristics should be considered when choosing a phosphorus permitting approach and targets for the Cocheco River.

Response 35

This comment suggests that the site-specific characteristics of the receiving water allow an increased load of phosphorus without encouraging cultural eutrophication. EPA largely agrees with the commenter's description of the immediate downstream receiving water (*e.g.*, relatively narrow, tree cover, forested riparian corridor) and that this contributes to light limitation and inhibits eutrophication in much of the immediate receiving water, especially in the vicinity of the discharge. However, EPA disagrees that these site-specific characteristics prevent eutrophication from occuring in more vulnerable segments farther downstream (*i.e.*, especially NHRIV600030608-03 and NHIMP600030608-02) where the "river widens" as described in the comment. In fact, photos on pages 27 and 29 of the Fact Sheet were from these more vulnerable segments showing clear violations of the state's narrative water quality standard for nutrients at these locations.

Areas with more light limitation in the vicinity of the discharge simply allow elevated phosphorus levels to continue downstream without significant assimilation until reaching areas with less light limitation that are more suitable for algal growth. This understanding is confirmed by the other water quality impacts observed in these downstream segments, as described in the Fact Sheet at 25 to 33. Therefore, EPA has considered the site-specific factors of the receiving water and finds that at least some portions of the downstream receiving water are not less susceptible to phosphorus loads and the Gold Book target of 0.1 mg/L is appropriate. *See also Response 2*

Comment 36

The appropriate background phosphorus concentration for permitting is 13 ug/L. EPA calculated a background P concentration of 27 ug/L, using all available data from station CCH-18. This station is actually in a small impoundment on the river and is farther upstream from the Rochester outfall than the river station CCH-16. Phosphorus concentrations in CCH-16 tend to be lower than those at CCH-18, presumably due to additional opportunity of phosphorus uptake in the stream downstream of CCH-18, and higher rates of algal/plant phosphorus uptake in the shallower river environment of CCH-16 than in the impoundment environment of CCH-18.

Background phosphorus concentrations also tend to be lower during the critical conditions for phosphorus permitting (summer low flow), compared with other conditions. This is because biological phosphorus uptake rates and phosphorus settling is higher under summer low flow conditions, and nonpoint source phosphorus inputs are lower. For this reason, it is important that the data used to calculate the background phosphorus condition reflect the appropriate seasonal and hydrologic condition. When the streamflow is equal to or less than 20.5 cfs (the August median streamflow, a streamflow statistic that DES is recommending for replacement of the 7Q10 for phosphorus permitting), the median phosphorus concentration at station CCH-16 is 12.5 ug/L. We are providing these data and our calculations to EPA for review (Exhibit E). EPA should therefore utilize the appropriate background phosphorus concentration of 13 ug/L.

Response 36

When making reasonable potential determinations, EPA attempts to characterize instream and effluent conditions using the most representative data available and considers factors such as proximity of sampling site to the discharge, sample size, and monitoring period (with more emphasis being placed on recent data). During the development of the Draft Permit, EPA determined that using data from station CCH-18 would be more appropriate, since it included more recent data as well as a more robust data set than station CCH-16. More specifically, station CCH-16 only included 5 samples taken from 2016 to present and they were all from a single growing season in 2016. In contrast, station CCH-18 included 22 samples in total with at least three samples taken from each growing season from 2016 through 2021. The lack of recent upstream data from station CCH-16 is in part due to accessibility issues at that site and because station CCH-18 has been a trend monitoring site to establish upstream conditions. Notably, NHDES uses station CCH-18 for its analysis of the Cocheco River in its "Water Monitoring Strategy Condition Report: Status and trends of water quality indicators from the River Monitoring Network," available at https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/2020-01/r-wd-19-21.pdf. Therefore, EPA considers the 22 results from CCH-18 to best characterize the condition of the upstream receiving water and this comment does not result in any change to the Final Permit.

EPA also notes that the data collected in June, July and August of 2016 (the only months with data available at both upstream sites) does not indicate a drastic difference between these two upstream locations (*i.e.*, median of 13 µg/L at CCH-16 and 19 µg/L at CCH-18). If EPA were to use the 2016 data from station CCH-16 along with the only available data for 2017 through 2021 (from station CCH-18), the median concentration would be 26 µg/L instead of 27 µg/L.

Further, EPA analyzed the available ambient phosphorus data and did not observe a decreasing trend in phosphorus concentration as ambient flows decrease.

In any case, the discharge has very little available dilution under 7Q10 conditions, with a dilution factor of 1.3. See Fact Sheet at 15. Based on this limited dilution, the phosphorus limit proposed in the permit is not impacted significantly by small changes in the background concentration. In fact, even changing the background concentration in the limit calculation (using the mass balance presented in Appendix B of the Fact Sheet) from 27 µg/L to 13 µg/L, as suggested in the comment, would result in an identical limit of 0.12 mg/L and would not have any impact on the Final Permit.

Comment 37

EPA's phosphorus permitting approach is overly simplistic and conservative. EPA's proposed phosphorus limit is based on the 7Q10 streamflow and Gold Book phosphorus target (100 ug/L). The primary appeal of this approach appears to be simplicity. The proposed limit is close to the limits of technology and extremely burdensome to the community. Unfortunately, EPA is ignoring the very real possibility that a simplistic permitting approach could result in an overly stringent limit and saddle the community with compliance costs that are higher than necessary and permanent. A phosphorus target that is informed by the Cocheco River's assimilative capacity.

The 7Q10 value streamflow is technically inappropriate for permitting nutrients. The 7Q10 streamflow was specifically derived for toxics permitting (USEPA, 1991), and its use for phosphorus represents a failure to adapt the toxics-based procedures to nutrients. The 7Q10 represents an extremely low and rare streamflow condition. Its use is highly conservative even for toxics, but completely inappropriate for nutrients. The implicit concept—that a one-in-ten year exceedance of a 7-day average nutrient concentration would cause impairments— does not reflect the temporal, spatial, and mechanistic aspects of how water bodies respond to nutrient inputs. The 10-year frequency is rarer than the 1-in-3 year exceedance frequency that is allowed even for toxics[34]. Similarly, the 7-day duration is shorter than the time scale at which eutrophication-related problems manifest themselves in streams, which can conservatively be stated as 30 days. Basing nutrient WLAs on very rare hydrologic conditions (7Q10 flows) will result in unnecessarily low WLAs.

New Hampshire is currently in a rulemaking process to consider revisions to permitting- related standards including those for phosphorus (Env-Wq 1705). We understand that NH is likely to recommend an alternative streamflow statistic (e.g., the August median streamflow) for phosphorus permitting. This rulemaking could be completed this year, well in time to be considered in parallel with the results of the site-specific phosphorus linkage study as discussed in comment 6.

[34] U.S. Environmental Protection Agency. 1991. Technical Support Document for Water-Quality-based Toxics Control. EPA/505/2-90-001. 335 p.

The Gold Book value should be replaced with a site-specific phosphorus limit that considers the Cocheco River's response to nutrient inputs. The simple use of the Gold Book value as toxics-like threshold for permitting is not scientific. This approach fails to consider water body-specific characteristics and therefore cannot be assumed to be founded in actual cause-effect linkages specified in NH's narrative standard. As stated by USEPA's Science Advisory Board (2010) regarding numeric nutrient targets:

> For criteria that meet EPA's stated goal of "protecting against environmental degradation by nutrients," the underlying causal models must be correct. Habitat condition is a crucial consideration in this regard (e.g., light, hydrology, grazer abundance, velocity, sediment type)…Numeric nutrient criteria developed and implemented without consideration of site specific conditions can lead to management actions that may have negative social and economic and unintended environmental consequences [emphasis added] without additional environmental protection.

Moreover, we disagree with application of the Gold Book phosphorus target as a not-to-exceed target. The Gold Book's use of the phrase "…should not exceed…" was referring to spatial (…"at any point…") rather than temporal variability. The Gold Book's only reference for the 0.100 mg/L target[35] discussed the value in context of a simple estimate of how much algae could be grown assuming "optimal growth conditions and maximum phosphate utilization". Even this overly simplistic estimate would inherently assume time for the growth to occur, as opposed to an unrealistic "instantaneous" algal response. Hence, the Gold Book value should be interpreted as a monthly or seasonal target rather than one to be applied under rare critical conditions.

It should also be pointed out that the Gold Book value is not the upper end of in-stream nutrient targets used by states, approved by EPA, or paired with typical summer flows that are significantly higher than the 7Q10 streamflow. Examples of higher nutrient targets come from Minnesota River Eutrophication standards (up to 0.150 mg/L), Boulder Creek, CO (up to 0.170 mg/L), Black River VT (0.26 mg/L), and Ohio's draft phosphorus targets (0.130 – 0.300 mg/L). In some settings, EPA has approved the use of a target similar to the Gold Book value, but applied at typical summer flows rather than a rare low streamflow. Examples include New Jersey's Technical Manual for Phosphorus Evaluations (0.100 applied at 70% exceedance flow, the Malibu Creek TMDL CA (0.100 mg/L applied at summer median flow, and Wisconsin phosphorus criteria (0.100 mg/L as a median growing season value). Hence, a site-specific evaluation for the Cocheco River should consider a wide range of values and select a goal that considers the river's characteristics and responses. The recommend approach is described in the following comment.

Response 37

This comment objects to EPA's permitting approach for phosphorus and suggests that it is overly simplistic and technically inappropriate. The concerns raised in this comment are not new. Rather, as mentioned in the Fact Sheet at 24-25,

[35] Mackenthun, K.M. 1973. Toward a cleaner aquatic environment. Environmental Protection Agency, Washington, D.C.

> …EPA observes that its overall approaches to establishing both phosphorus and nitrogen effluent limitations in NPDES permits have been extensively adjudicated over the past fifteen years, and they have been found to be reasonable and upheld by both the Environmental Appeals Board and the United States Court of Appeals for the First Circuit. Petitions for certiorari have twice been denied by the United States Supreme Court for Region 1 nutrient permitting (total phosphorus and total nitrogen) decisions under 40 CFR § 122.44(d)(1)(vi) in recent years.
> [See Fact Sheet at 24-25 for links to these prior court decisions.]
>
> EPA adheres to the overarching decision-making framework for nutrient permitting established by these precedents: administrative and judicial bodies have expressly found EPA's approach to be reasonable under the Act and, for its part, EPA has found the approach in its experience to be workable, expeditious, as well as demonstrably effective in addressing nutrient pollution, in a manner that is neither overly stringent, nor overly lax. While drawing on information from the scientific literature and national and regional EPA guidance, EPA also accounts for site-specific facts and circumstances surrounding the discharge and receiving waters in arriving at the permit result. EPA acknowledges that there are a range of alternative technical approaches and opinions when permitting for nutrients to ensure that uses for the waters designated by the state for its citizens are achieved; while some of these may have merit, EPA's existing approach has been proven to have merit and provides predictability for the regulated community.

The commenter questions the use of the Gold Book in setting phosphorus limits. As stated in the Fact Sheet (at 22-23), 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. See Env-Wq 1703.14(b), Env-Wq 1703.14(c), and Env-Wq 1702.15. Until the State adopts numeric criteria, EPA must derive phosphorus limits that are protective of the State's narrative water quality standards.

In the course of deriving protective phosphorus effluent limits that meet the narrative phosphorus criterion, the Region looked to a variety of sources, including the Gold Book, Ecoregional Nutrient Criteria (Ambient Water Quality Criteria Recommendations: Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (EPA December 2000) and Nutrient Criteria Guidance (Nutrient Criteria Technical Guidance Manual: Rivers and Streams, July 2000). These constitute information published under CWA §304(a) and were used as guidance to interpret the State's narrative criterion for nutrients and not as substitutes for state water quality criteria. The Region's use of the Gold Book and other relevant materials published under Section 304(a) to develop a numeric phosphorus limit sufficiently stringent to achieve the narrative nutrient criterion is consistent with applicable NPDES regulations. The Gold Book does not contain a phosphorus criterion, but instead, presents a "rationale to support such a criterion." Gold Book at 240.

EPA's guidance document recommends in-stream phosphorus concentrations of 0.05

mg/L in any stream entering a lake or reservoir, 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within the lake or reservoir. When deriving a numeric limit to implement a narrative water quality criterion, EPA is authorized under 40 C.F.R. §122.44(d)(1)(vi)(B) to: "Establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under Section 304(a) of the CWA, supplemented where necessary by other relevant information." EPA also relied on 40 C.F.R. §122.44(d)(1)(vi)(A) in arriving at its determination. This provision similarly entails derivation of an instream target based on relevant information that will protect designated uses.

The commenter states that an instream phosphorus target that is derived from a site-specific evaluation for the Cocheco River, which "should consider a wide range of values and select a goal that considers the river's characteristics and responses", should be applied as opposed to the instream target applied by EPA. This approach, which is described in further detail in comments 2 and 38, includes foregoing the inclusion of a phosphorus limit in the Final Permit, and instead including a provision allowing for an "interim phosphorus demonstration test and a special condition and schedule to derive a site-specific phosphorus target and final limit, in accordance with NH's forthcoming rules". EPA's response to this approach is addressed in Response 2 and 38.

The administrative record establishes that the discharge has the reasonable potential to cause or to contribute to violations of the State's narrative water quality standard for nutrients in the receiving water. Under law, EPA cannot fail to include a permit effluent limitation that it has determined to be necessary under Section 301, as that provision of the Act and implementing regulations requires, among other things, EPA to include limits in permits necessary to assure compliance with water quality standards. The commenter's proposals of forestalling the inclusion of an effluent limit to allow time for (1) conducting additional tests and demonstration studies; (2) development of alternative instream targets based on such studies, and (3) the promulgation of water quality standards, are not considerations based in water quality and have no purchase under Section 301 from the standpoint of establishing water quality-based effluent limitations. All of these factors counsel in favor of reasonably expeditious permit issuance, rather than waiting on the hope or expectation that more or better science will develop, while water quality degradation persists and potentially intensifies. Therefore, EPA has acted upon all available information and has concluded that the steady-state model applying the Gold Book guidance, as informed by other information in the administrative record, is a reasonable basis for the permit limit at this time. Should the permittee complete any demonstration studies, it may submit that information to EPA for review.

Furthermore, arguments similar if not substantively identical to the ones raised in the above comment relating to the use of the Gold Book as relevant information in setting phosphorus effluent limitations, as well those concerning the application of 7Q10 flows in nutrient permitting, have been addressed and have been decided in EPA's favor. *See e.g., Upper Blackstone Water Pollution Abatement Dist. v. U.S. Envtl. Prot. Agency*, 690 F.3d 9 (1st Cir. 2012), cert. denied, 133 S. Ct. 2382 (2013); *City of Taunton v. U.S. Envtl.*

Prot. Agency, 895 F.3d 120 (1st Cir. 2018), cert. denied, 139 U.S. 1240 (2019). Should the City wish to review these decisions, they are available here:

City of Taunton v. EPA (EAB and First Circuit)

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/0A045314B61E682785257FA80054E600/$File/Denying%20Review%20Vol-17.pdf

- https://yosemite.epa.gov/oa/eab_web_docket.nsf/A568248B44D1C63785258053005AEDD0/$File/Opinion%207.9.2018%20(46%20pages).pdf

Upper Blackstone Water Pollution Abatement Dist. v. EPA (EAB and First Circuit

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/A44361EC4C211B0685257865006EA1EC/$File/Upper%20Blackstone.pdf
- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/2D0D249E441A18F185257B6600725F04/$File/October%2018%202017.pdf

In re Town of Newmarket Wastewater Treatment Plant

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/97CCD304C9B7E58585257C3500799108/$File/Newmarket%20Decision%20Vol%2016.pdf

In re City of Attleboro MA Wastewater Treatment Plant

- https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/D506EBEE22A1035E8525763300499A78/$File/Attleboro.pdf

Regarding potential revisions to NH WQS, see Responses 2 and 38. Additionally, to the extent the commenter is challenging or questioning the merits of existing NH WQS, those issues are beyond the scope of this permitting appeal. *See, e.g., Keene* at 753-754.

Regarding the commenter's argument for interpreting the Gold Book instream phosphorus target as a monthly or seasonal target, as opposed to a "not to exceed" value, EPA notes this is in direct opposition to the Gold Book, in which the instream targets are clearly referenced as values not to be exceeded at any time, not annual averages. The Gold Book, at page 246, states the following:

"*To prevent the development of bioloqical nuisances and to control accelerated or cultural eutrophication, total phosphates as phosphorus (P)* ***should not exceed*** *50 uq/L in any stream at the point. where it enters any lake or reservoir, nor 25 uq/L within the lake or reservoir. A desired qoal for the prevention of plant*

nuisances in streams or other flowing waters not dischargina directly to lakes or impoundments is 100 ug/L total P".3)".

Therefore, it is appropriate to apply the recommended values to the 7Q10 flow as a critical condition. For comparison, the ecoregional value (31.25 µg/L) represents average values during the critical growing season. If EPA were to use a seasonal or annual averaging period and an associated longer-term critical river flow, the ecoregional value would be a more appropriate in-stream target concentration. Given the upstream median concentration of 27.0 µg/L, this approach would likely result in more stringent effluent limits. Moreover, NH WQS are required to be met under 7Q10 conditions (Env-Wq 1705.2(d)), and EPA therefore used the 7Q10 flow for the purposes of deriving the limit.

There is good reason for this in the context of nutrient permitting, which can, result in adverse short-term impacts on receiving water quality and aquatic life, including low DO, in addition to recreational and other designated uses. During the growing season, when light and temperature are optimal for plant growth and the receiving water is subject to elevated nutrient concentrations, aquatic plant biomass growth can proliferate in relatively short periods of time. A permit limit based on 0.1 mg/L and calculated using seasonal or annual flows would have the potential to allow periods of excessive loading of nutrients during and around critical low flow conditions while still meeting the overall limit. The resulting biomass from any plant growth would violate water quality standards and have the potential to settle into the sediments and contribute to future water quality violations. It is imperative, therefore, to ensure that phosphorus effluent discharges from the facility and the resulting ambient phosphorus concentrations are maintained at consistently low levels. A phosphorus effluent limit that assumes worst case hydrological conditions will accomplish the objective of maintaining consistently low phosphorus in-stream concentrations.

In terms of compliance, EPA imposes the limit as a monthly average, as explained. Not only is imposition of a 30-day average limit consistent with federal regulations governing the NPDES programs, such an averaging period will again reasonably minimize (when compared to a seasonal average limit) the amount of time that phosphorus effluent concentrations from the facility can cause an instream exceedance of 0.1 mg/L and still comply with the limit.[36] This approach maintains consistently low phosphorus effluent concentrations, as well as minimizes overall phosphorus loading into the system, which is important in impaired waters, like the receiving water here, and where there may be some potential for the existing sediment phosphorus deposits to recycle in the water column. A conservative approach is appropriate and consistent with EPA's obligation to ensure compliance with water quality standards. EPA does not foreclose the imposition of limits based on seasonal or annual flows in all instances, so long as such limits are sufficiently low to ensure compliance with water quality standards.

[36] *See* 40 C.F.R. § 122.45(d)(2) ("For continuous discharges all permit effluent limitations, standards and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as average weekly and average monthly discharge limitations for POTWs.").

The concerns raised in the above comments regarding costs to achieve the phosphorus limit that was included in the Draft Permit are addressed in Response 2.

Regarding the commenter's assertion that the Gold Book value is not the upper end of instream nutrient targets used by other states, EPA recognizes that other States may take different approaches, at least in part due to the unique water quality characteristics presented in their waters. Citations to alternate approaches adopted by other permitting authorities does not itself undermine the reasonable, explained, and technically-defensible approach adopted by EPA. Contrary to the comment, EPA did apply site-specific analysis for both reasonable potential purposes and calculating the effluent limitation, in addition to considering a range of values. For example, EPA considered EPA guidance specifically tailored to the applicable ecoregion, which as discussed above, likely would have resulted in a more stringent effluent limit. Ultimately, EPA's site-specific analysis informed its selection of the Gold Book in-stream target as the appropriate approach here. See Response 2 for further discussion.

In sum, EPA does not believe a 0.1 mg/L target that is calculated using seasonal or annual average flows would be sufficiently protective to ensure the discharge complies with applicable water quality standards, as it is required to under the Act. Therefore, this comment does not result in any change to the Final Permit.

Comment 38

In lieu of the simplistic phosphorus permitting approach, the City requests an interim phosphorus demonstration test and a special condition and schedule to derive a site-specific phosphorus target and final limit, in accordance with NH's forthcoming rules. As mentioned above, New Hampshire is currently in a rulemaking process to consider revisions to permitting-related standards including those for phosphorus (Env-Wq 1705). The next version of the rule language is expected to be available for comment this summer, well within the timeframe for consideration prior to finalization of the City's NDPES permit. The forthcoming rule language will contain an alternative to the 7Q10 streamflow for phosphorus permitting, and also will include options for deriving water body-specific phosphorus targets such as model or data-based evaluations. Given the imminence of this rulemaking, the City's NPDES permit should allow time for application of the state's new science-based process instead of the simplistic 7Q10/Gold Book-based limit. Specifically, the City recommends that the NPDES permit include the following in lieu of the proposed phosphorus limit:

Interim phosphorus demonstration test: The City has recently completed a bench-scale jar testing to estimate the coagulant dose and costs for reducing effluent total phosphorus discharges using Neo WaterFX300 (formerly known as RE300). Neo WaterFX300 shows some promise, but it is unclear whether it will work on a full-scale basis at the plant given the plant's unique configuration. Within 6 months of the effective date of the NPDES permit, Rochester will submit a plan to EPA and NHDES for full-scale demonstration testing at its WWTF. Once final and approved by EPA and NHDES, the City would implement this demonstration testing plan (implementation expected to be scheduled for summer 2023).

A special condition to derive site-specific phosphorus target in accordance with New Hampshire's forthcoming rules: We recommend that the permit include a special condition derived site-specific phosphorus concentration or loading target, to be based on the phosphorus concentrations or loads necessary to maintain or achieve desirable levels of response variables such as dissolved oxygen, chlorophyll-a, pH, and plant/algae growth. The special condition would include a schedule for the City to (1) develop a monitoring and analysis plan subject to DES and EPA review/approval; (2) perform the monitoring and analysis plan; and (3) interpret the results to propose a site-specific phosphorus target. Although the details of the monitoring and interpretation would be determined during the first phase, potential elements include:

- Water quality monitoring (including sonde deployment) and algae/plant monitoring at locations to be agreed upon between the City, DES, and EPA. Based on preliminary consultation with DES, at least two years of additional monitoring would be required.

- A focused evaluation of floating plant coverage, including compilation of historical aerial satellite images to quantify the extent and frequency of duckweed coverage on the Cocheco River. In parallel, a review of how goals for floating plants have been quantified in prior regulatory situations, used to support the development of a reasonable goal for floating plants in the Cocheco River.

- An empirical or model-based analysis to link phosphorus loads or concentrations with response variables and floating plant coverage, considering other environmental factors such as season and streamflow. The outcome of this evaluation would be a phosphorus loading or concentration target that is both protective and representative of the receiving water.

The City and DES have performed various other types of water quality and algal/plant monitoring in recent years, and these data can also be considered in the analysis. The additional monitoring/analysis would be intended to fill any data gaps and consider specific conditions such as floating plant biomass. Following is recommended language for the special condition:

Special Condition: Site Specific Phosphorus Linkage Study

Within 120 days of the effective date of this permit, the Permittee shall submit a Phosphorus Linkage Study Plan to EPA and NHDES. The plan will describe the City's method for deriving a site-specific phosphorus target for the non-tidal Cocheco River below the Rochester WWTP outfall. The plan shall include: (1) water quality monitoring methods, locations, and frequencies; (2) algae/plant monitoring methods, locations, and frequencies; (3) quality assurance and control measures; (4) interpretive methods for linking phosphorus loads or concentrations to key response variables in the river; and (5) methods for identifying response variable targets (e.g., water quality criteria or floating biomass goals). The interpretive methods should include the use of historical monitoring data, such as water quality data from the NHDES and the City. They may also include an evaluation of floating plant historical biomass as interpreted from historical aerial or satellite images, with empirical or model-based linkages to environmental factors such as phosphorus loads/concentrations, season, and streamflow.

The agency review period for the Phosphorus Linkage Study Plan shall be 60 days. The City shall revise and re- resubmit the plan to EPA and DES within 60 days of receipt of those comments. Upon notification of an approved Phosphorus Linkage Study Plan by NHDES, EPA will review any changes and, if acceptable, will submit written notice of approval to the Permittee.

Within 36 months of the effective date of this permit, the Permittee shall complete the monitoring described in the Phosphorus Linkage Study Plan. Within 42 months of the effective date of this permit, the Permittee shall submit to EPA and NHDES a Phosphorus Linkage Study Final Report that includes: (1) results of the monitoring conducted for the study; (2) interpretations of phosphorus linkages to response variables; and (3) a recommended phosphorus target (concentration or load) for the receiving water to be applied under the appropriate seasonal and hydrologic conditions.

Response 38

This comment requests three items in lieu of a phosphorus limit. First, that EPA allow time for a proposed WQS change related to nutrient permitting to go through the rulemaking process and be incorporated into Rochester's permit. Second, that the City be allowed to implement a full-scale "phosphorus demonstration test" using a new treatment technology. Third, that the City have 42 months to complete and submit a "Phosphorus Linkage Study" designed to determine an appropriate phosphorus target.

Regarding the first two items, see Responses 2 and 3.

Regarding the third item, see Response 33.

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

Comment 39

The special condition and associated monitoring/study will not significantly affect the timing of phosphorus-related upgrades at the Rochester WWTP. The WWTP would require a major capital upgrade to meet more stringent phosphorus limits. The present-day estimated cost of this upgrade is $18.3 million, and is likely to be significantly higher when constructed. This is a significant financial burden to the ratepayers of the City. For these reasons, it is estimated the City would require at least 10 years to plan, design, fund, construct, and bring online a new phosphorus removal system. Under the proposed schedule, the results of the Phosphorus Linkage Study would be available in time to inform the final phosphorus target prior to final design and construction of any related update.

Hence, the proposed special condition would not significantly delay phosphorus reductions at the Rochester WWTP.

Response 39

As confirmed in the responses above, the Final Permit retains the total phosphorus limit of 0.12 mg/L. As mentioned in Response 2, if the Permittee is unable to comply with the total phosphorus limit in the Final Permit (once it becomes effective), they may contact

EPA's Enforcement and Compliance Assurance Division (ECAD) to discuss a potential administrative order with an appropriate schedule to achieve this limit. In such discussions, EPA agrees that this Phosphorus Linkage Study should not affect the timing of phosphorus-related upgrades at the Rochester WWTP.

While not a requirement of the Final Permit, the Permittee is welcome to pursue a Phosphorus Linkage Study and may submit the results of such a study to EPA at any time. As with any submittals received by EPA related to NPDES permits, EPA will review the results and, if merited in EPA's discretion, will implement the findings in a future permitting action. However, given the significant uncertainty by EPA that this study would result in any relaxation of the phosphorus limit (as described in Response 33), EPA notes that the time to conduct this study and for EPA to review and implement the results of this study, if merited, do not constitute any cause for the City to delay progress toward expeditious compliance with the total phosphorus limit in the Final Permit.

Comment 40

Section 3: Proposed Ammonia Limits (Permit pp 2)
In the draft permit, EPA proposes lowering the monthly limits for ammonia nitrogen. The proposed limits are based on a mass balance under 7Q10 streamflow conditions. It would be more technically appropriate to use the 30Q10 streamflow with the chronic ammonia criterion, because that criterion is expressed as a 30-day average. New Hampshire is currently in a rulemaking process to consider revisions to permitting-related standards (Env-Wq 1705) including critical flows. We request that the draft permit utilize a streamflow for chronic ammonia that is consistent with DES' developing regulation.

There is no reasonable potential that the existing limits would cause exceedance of acute criteria: The table on page B-3 of the factsheet indicates that the existing permit limits have reasonable potential to exceed the acute ammonia criteria. We believe this is an error.

Ammonia limit calculations should consider effluent variability: The mass balance calculations in Appendix B appear useful for the RPA and for calculating the ammonia wasteload allocations (WLAs). However, it appears that EPA set the average monthly limit equal to the chronic WLA, without considering effluent variability. We request that EPA consider effluent variability in accordance with the Technical Support Document for Water Quality Based Toxics Controls (USEPA, 1991). Our own calculations[8] indicate that if this was done:
The existing winter monthly limit (7.7 mg/L) is protective. The appropriate summer monthly limit is 2.8 mg/L instead of 2.0 mg/L These calculations are provided in Exhibit F.

8. Assumptions: Ammonia coefficient of variation of 2.5, probability basis of 0.95, 8 samples/month, statistics based on achieving chronic criterion as 30-day (not 4-day) average.

Response 40

See Response 8.

Comment 41

Section 4: WET Testing (Permit pp 3)

The requirement to test effluent quality (hardness, ammonia, metals, and TOC) in conjunction with WET testing should be removed. The City already monitors ammonia routinely and has a limit specifically set to prevent toxicity to aquatic life. USEPA has already determined that the Rochester WWTP has no reasonable potential to exceed toxic thresholds of metals. Given the lack of reasonable potential for metals toxicity, and lack of water quality standards for hardness and TOC, this testing would impose significant testing costs without a useful purpose. We also question USEPA authority to impose this chemical testing in the absence of reasonable potential. Such testing should be reserved for facilities that experience persistent WET test failures, as and part of standardized procedures such as toxicity identification evaluations (TIE) or toxicity reduction evaluations (TRE).

The ambient monitoring requirements should be removed. The requirement to test ambient water quality (hardness, ammonia, metals, TOC, DOC, pH, temperature, and total phosphorus) in conjunction with WET testing should be removed as a default requirement. As with the chemical effluent monitoring associated with the WET test, this monitoring imposes a significant cost without a useful purpose, and we question USEPA's authority to impose monitoring requirements for constituents without reasonable potential of criteria exceedances. USEPA has already concluded that there is no reasonable potential for the facility to exceed metals criteria. USEPA's aluminum criteria are actually less stringent than New Hampshire's at the typical water quality of the Cocheco River (pH ≈ 6.6; hardness ≈ 25 mg/L, DOC > 4 mg/L). Hence, there would be no reasonable potential for aluminum exceedances even if NH adopted the USEPA criteria. Phosphorus monitoring may be beneficial, but should be conducted separately in accordance with the QAPP developed for the phosphorus linkage study recommended in these comments.

Response 41

Effluent and ambient sampling is required to be conducted as specified in the WET testing protocol. See Response 9 for a more detailed discussion.

Regarding EPA's authority to require testing, EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. See, e.g., CWA § 308. These data may be used to determine whether there is reasonable potential to cause or contribute to a violation of the State water quality standards in the next permit reissuance, and if there is, to inform the development of numeric effluent limits.

C. Comments from Tom Irwin and Melisa Paly of the Conservation Law Foundation:

General Comment

Conservation Law Foundation ("CLF") appreciates the opportunity to comment on the above-referenced draft National Pollutant Discharge Elimination System ("NPDES") permit

for the Rochester Wastewater Treatment Facility ("WWTF"). CLF is a non-profit environmental advocacy organization working to protect natural resources and build healthy communities in New Hampshire and across New England. Through our Great Bay-Piscataqua Waterkeeper program and regulatory advocacy, CLF has focused considerable resources to protect and restore New Hampshire's and southern Maine's Great Bay estuary, which has been designated an estuary of national significance. Our work has included active engagement in the public comment process for several WWTF NPDES permits in the estuary, including Portsmouth's Pease and Peirce Island WWTFs, WWTFs in Exeter, Newmarket, and Dover, and the recently issued Total Nitrogen General Permit. We have done so because the regulation of WWTFs provides an important opportunity to reduce pollutant concentrations and loads in furtherance of restoring the greatly stressed Great Bay estuary.

Comment 42

The Permit Must Include Effluent Limitations for Total Phosphorus that Ensure the Attainment of State Water Quality Standards

As EPA makes clear in its Fact Sheet, multiple water quality and algal surveys conducted by the agency demonstrate elevated levels of macrophytes, floating duckweed, and aquatic bryophytes downstream of the wastewater treatment facility. Sampling at upstream locations showed a median phosphorus concentration of 0.027 mg/L, while sampling of effluent from the Rochester Wastewater Treatment Facility had a median concentration of 1.42 mg/L. EPA used these data and 7Q10 flow data "to determine that there is reasonable potential for this discharge to cause or contribute to an excursion of WQS for phosphorus during the growing season (April 1 through October 31)." Fact Sheet at 32. The Fact Sheet further states:

> This information demonstrates that there is reasonable potential for the discharge to cause or contribute to cultural eutrophication downstream and, therefore, must be treated to remove phosphorus to ensure attainment and maintenance of the state's narrative water quality standards [See Env-Wq 1703.14(b) and (c)], especially in the more sensitive areas downstream like the "several extremely slow moving mini-segments" described in the report near the Watson Road dam.

Fact Sheet at 26 (emphases added). See also id. at 30 ("This information further illustrates that there is reasonable potential for the discharge of phosphorus from the Rochester WWTF to cause or contribute to cultural eutrophication downstream that must be treated to remove phosphorus to ensure attainment and maintenance of the state's narrative water quality standards [See Env-Wq 1703.14(b) and (c)]." (emphases added); id. ("Based on 40 CFR § 122.44(d)(1)(vi), EPA must establish effluent limits that will fully protect designated uses in all downstream waters that may be impacted by the discharge, including especially those areas that are deemed most susceptible."); id. at 27 ("Additionally, the algal surveys conducted on both sampling dates demonstrate elevated levels of algal growth and coverage, especially in Stations 4 (middle of NHRIV600030608-03), 5 (beginning of NHRIV600030608-05) and 6 (beginning of NHIMP600030608-04), further demonstrating likely violations of the state's narrative water quality standards.").[9]

CLF appreciates the attention that EPA has devoted to phosphorus-related problems in the Cocheco River and associated with the Rochester WWTF. We urge EPA, in its final permit, to include concentration- and load-based effluent limitations that achieve the touchstone requirement, as discussed above, of ensuring the attainment of state water quality standards. Technology exists to achieve total phosphorus effluent limitations that are considerably more stringent than the draft permit's proposed standard, which may be necessary to achieve the critically important requirement of ensuring the attainment of water quality standards.[10] Included in these effluent limitations, and because of the significant time periods during which many permits continue in effect (i.e., beyond their five-year terms), we urge EPA to also include protective effluent limitations for total phosphorus during the non-growing, winter months. Id. at 33 ("EPA notes that surface waters can also be affected by the year-round accumulation of phosphorus in the sediment during the winter and then be released during warmer weather and contribute to algal growth.")

9. In addition to the state water quality standards referenced in the Fact Sheet's discussion of total phosphorus, CLF notes that Env-Wq 1703.19, related to biological and aquatic community integrity, also must be considered.

10. See Declaration of David Pincumbe re State of Vermont Superior Court, Environmental Division, April 2018 (provided herewith)

Response 42

EPA agrees with the commenter that a phosphorus limit is warranted, and a seasonal concentration-based limit was proposed in the Draft Permit and retained in the Final Permit. The commenter requests the consideration of a mass-based phosphorus limit as well as a limit during the non-growing, winter months.

Regarding a mass-based limit, EPA calculated a potential mass-based limit of 2.6 lb/day in the Fact Sheet at 32-33 and solicited comments on whether a concentration-based or mass-based limit would be more appropriate. This comment is the only relevant comment, and it simply suggests both be included in order to achieve WQS. EPA notes that the proposed mass-based limit and the proposed concentration-based limit are fully protective of WQS under all expected flows and it is, therefore, unnecessary to apply both. As noted in the Fact Sheet, to ensure that the proposed mass limit is protective under the worst-case conditions, it was calculated using the lowest expected receiving water flow (2.24 MGD) and effluent flow (1.85 MGD). Since EPA did not receive any comments that suggest the mass-based limit is more appropriate than the concentration-based limit, the Final Permit retains the concentration-based limit of 0.12 mg/L.

Regarding the winter months, EPA notes that surface waters can be affected by the year-round accumulation of phosphorus that settles in the sediment during the winter that is then released during warmer weather and may contribute to algal growth. At this time, EPA does not have enough data during the non-growing season of November 1 to March 31 to determine whether a limit during this period is warranted. As noted in the Fact Sheet, the Draft Permit established a twice per month monitoring requirement during the non-growing season which has been retained in the Final Permit.

This data, along with other information regarding the health of the river downstream of the discharge once Rochester's discharge is significantly reduced in the growing season, may be used in a future permitting action to determine whether there is a need to establish a winter effluent limit at that time.

Comment 43

EPA Should Revisit the Draft Permit's Effluent Limitations for Total Suspended Solids

The Draft Permit retains water quality-based effluent limitations ("WQBELs") for total suspended solids ("TSS") that were developed for the current, 1997 permit. CLF supports the adoption of WQBELs for TSS – in terms of both concentration and load – but urges EPA to update its analysis in light of current conditions to ensure that TSS discharges – during the growing and non-growing seasons – do not cause or contribute to the violation of water quality standards.

Response 43

EPA acknowledges that suspended solids have been identified as a significant factor impacting the health of the Great Bay estuary, which is located downstream of the Rochester discharge. The Piscataqua Region Estuaries Partnership ("PREP"), part of EPA's National Estuaries Program, specifically identified total suspended solids as a "pressure indicator" for the Great Bay estuary in its 2018 *State of Our Estuaries* report. See PREP, *State of Our Estuaries* (2018) at 15. PREP's report identifies TSS as a "cautionary" trend for the estuary and explains that "[i]ncreasing suspended sediments reduce water clarity and impact primary producers such as eelgrass, seaweeds, and phytoplankton." Id. Importantly, PREP, with the support of its Management Committee, has adopted the goal of "NO INCREASING TRENDS FOR TOTAL SUSPENDED SOLIDS." *Id*.

EPA is proposing to carry forward average monthly and average weekly TSS limits in this permit reissuance. See Response 14 regarding removal of the maximum daily limits. To determine whether this permitting action is expected to satisfy the water quality goal discussed above, EPA presents the following information.

First, EPA notes that the Rochester WWTF is currently authorized to discharge total nitrogen under the Great Bay Total Nitrogen General Permit (GBTN GP). EPA expects that the efforts under the GBTN GP permitting strategy will result in an overall decrease in TSS and other constituents found in stormwater. Specifically, EPA articulated this understanding in the Response to Comments at 105 for the GBTN GP, which says the following:

> "Another question raised in the comments was whether EPA can describe other advantages of managing nonpoint source pollution in addition to nitrogen removal. Specifically, some commenters requested examples of measures that may have additional benefits such as aesthetics, total suspended solids (TSS) removal, erosion control, etc. Further, some commenters questioned whether implementing BMPs that are designed to maximize nitrogen reduction would

result in less potential for TSS or chromophoric dissolved organic matter (CDOM) reduction. There are many reasons a municipality may choose to implement BMPs throughout their jurisdiction, these reasons include stormwater system resiliency, flood mitigation, reduction of heat island effects, aesthetics, public safety and permitted pollutant reductions. The specific reason a municipality may choose one BMP over another, say tree planting over rain gardens, is a municipal decision based on local priorities. The pollution removal estimation tools provided by EPA Region 1 on https://www.epa.gov/npdes-permits/stormwater-tools-new-england#swbmp include information on nitrogen, phosphorus, TSS, metals and bacteria reduction based on the implementation of a variety of BMPs. This allows municipalities to use the best available information to define the pollution reduction realized by implementing different stormwater BMPs. Different BMP designs will optimize the reduction of one pollutant over another, but the agencies disagree that by prioritizing the removal of nitrogen in stormwater BMPs you would increase TSS or CDOM. Many BMPs rely on infiltration as a mechanism for pollution reduction, this will decrease the total volume of untreated stormwater reaching Great Bay and will reduce the overall loading of all constituents found in stormwater."

Second, EPA is holding the permitted weekly and monthly loads for TSS from the Rochester facility. The comment provides no basis for imposing more stringent limits.

Therefore, EPA asserts the following with respect to the overall TSS load to Great Bay:

- efforts by the municipalities under the GBTN GP (including Rochester) will result in significant decrease in TSS from stormwater sources;
- the TSS limits in the reissued Rochester WWTF permit will not result in an increase in TSS from Rochester; and
- in sum, the overall TSS load to Great Bay is expected to decrease based on the GBTN GP and the Rochester individual permit reissuance.

Therefore, EPA has determined that the Rochester permit is in accordance with State water quality standards and this comment does not result in any change to the Final Permit.

Comment 44

The Draft Permit's Effluent Limitation for Ammonium is Warranted to Protect Essential Fish Habitat

CLF supports the draft permit's more stringent ammonia limits to protect essential fish habitat for Atlantic salmon. Fact Sheet at 91.

Response 44

EPA acknowledges the comment. Also see Response 8.

Comment 45

The Final Permit Should Require Testing of More PFAS Chemicals

CLF shares EPA's concern about the problem of PFAS pollution and strongly supports monitoring for the presence of PFAS in WWTF influent, effluent, and sludge. However, in light of the thousands of PFAS that now exist, the draft permit's requirement for only four PFAS (PFOS, PFOA, PFHxS, and PFNA) to be tested in the Rochester WWTF's effluent, influent and sludge is inadequate.

EPA's Draft Method 1633 enables testing for 40 PFAS compounds. On its website, EPA describes Draft Method 1633 as follows:

EPA's Office of Water, in partnership with the Department of Defense's (DoD) Strategic Environmental Research and Development Program, has published draft Method 1633, a single-laboratory validated method to test for 40 PFAS compounds in wastewater, surface water, groundwater, soil, biosolids, sediment, landfill leachate, and fish tissue. This draft method can be used in various applications, including National Pollutant Discharge Elimination System (NPDES) permits. The method will support NPDES implementation by providing a consistent PFAS method that has been tested in a wide variety of wastewaters and contains all the required quality control procedures for the CWA. While the method is not nationally required for CWA compliance monitoring until EPA has promulgated it through rulemaking, it is recommended now for use in individual permits.

Historically, EPA published draft methods on this Clean Water Act Methods website after completing the single-laboratory validation report. However, due to many public and stakeholder requests, this method was made available while DoD and EPA prepared the single-laboratory validation study report. The report is now available below. Multiple EPA programs have reviewed this draft method. DoD has begun a multi-laboratory validation study of the procedure, which is expected to be completed in 2022. DoD's multi-laboratory validation is proceeding in collaboration with the Office of Water, the Office of Land and Emergency Management, and the Office of Research and Development.

The Office of Water will use the results of the multi-laboratory validation study to finalize the method and add formal performance criteria. The method validation process may eliminate some of the parameters listed in this draft method.
In the meantime, the Office of Water encourages laboratories, regulatory authorities, and other interested parties to review and use the draft method, with the understanding that it is subject to revision.

See https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas (last visited May 16, 2022) (emphases added).

CLF urges EPA, in finalizing the permit, to require testing for PFAS in the Rochester's WWTF's effluent, influent, and sludge using its Draft Method 1633, including testing for the broader suite of PFAS compounds facilitated by that Method.

Response 45

As PFAS contamination is an urgent public health and environmental issue, EPA agrees with the comment that the Final Permit should require all 40 PFAS analytes measured by Method 1633 to be monitored and reported each quarter for influent, effluent and sludge. This level of monitoring is recommended in EPA's *October 2021 PFAS Strategic Roadmap*[37] 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*[38].

Therefore, Table I.A.1., Effluent Characteristics, Influent Characteristics, and Sludge Characteristics has been modified in the Final Permit to now include monitoring for all 40 of the PFAS Analytes required to be tested in Method 1633. This analysis is to be conducted using Method 1633 until there is an analytical method approved in 40 CFR Part 136. A list of the PFAS analytes that are required to be tested is provided in Attachment E to the Final Permit. Part I.E.7 regarding PFAS monitoring for industrial users has also been updated to reference Attachment D. EPA notes that the addition of these analytes does not entail a significant cost or burden on the Permittee given that the analytical method required would measure these compounds in any case and the permit simply requires that they all be reported individually into NetDMR each quarter.

Finally, the Draft Permit indicated that the PFAS monitoring and reporting requirements will go into effect the first full calendar quarter following 6 months after EPA notifies the Permittee that EPA multi-lab validated methods for wastewater and for sludge are available. EPA notes this multi-lab validation (for Method 1633) is expected to be completed in the near future and the Final Permit has not been changed with regard to this timing.

[37] https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf
[38] https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf

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 Rochester, New Hampshire

is authorized to discharge from the facility located at

Rochester Wastewater Treatment Facility
175 Pickering Road
Gonic, NH 03839

to receiving water named

Cocheco River
Piscataqua-Salmon Falls Watershed

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

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

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

This permit supersedes the permit issued on July 23, 1997.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (Industrial Pretreatment Program Annual Report) 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 Cocheco 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]	5.03 MGD[5]	---	---	Continuous	Recorder
Effluent Flow[5]	Report MGD	---	Report MGD	Continuous	Recorder
$CBOD_5$ (June 1 - October 31)	6 mg/L 252 lb/day	6 mg/L 252 lb/day	9 mg/L 378 lb/day	2/Week	Composite
$CBOD_5$ (November 1 – May 31)	13 mg/L 546 lb/day	21 mg/L 882 lb/day	23 mg/L 965 lb/day	2/Week	Composite
$CBOD_5$ Removal	≥ 85 %	---	---	1/Month	Calculation
TSS (June 1 - October 31)	6 mg/L 252 lb/day	6 mg/L 252 lb/day	9 mg/L 378 lb/day	2/Week	Composite
TSS (November 1 - May 31)	13 mg/L 546 lb/day	21 mg/L 882 lb/day	23 mg/L 965 lb/day	2/Week	Composite
TSS Removal	≥ 85 %	---	---	1/Month	Calculation
pH Range[6]	6.5 - 8.0 S.U.			1/Day	Grab
Escherichia coli	126 /100 mL	---	406 /100 mL	3/Week	Grab
Dissolved Oxygen	≥ 7.0 mg/L			Continuous	Recorder
Ammonia Nitrogen (May 1 – October 31)	2.0 mg/L	Report mg/L	4.31 mg/L	2/Week	Composite
Ammonia Nitrogen (November 1 - April 30)	6.3 mg/L	Report mg/L	26.3 mg/L	2/Week	Composite
Total Phosphorus (April 1 – October 31)	0.12 mg/L Report lb/day	---	---	2/Week	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Phosphorus (November 1– March 31)	Report mg/L Report lb/day	---	---	2/Month	Composite
Perfluorohexanesulfonic acid (PFHxS)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[7]	---	---	Report ng/L	1/Quarter	Composite
Whole Effluent Toxicity (WET) Testing[8,9]					
LC_{50}	---	---	≥ 100 %	1/Quarter	Composite
C-NOEC	---	---	≥ 77 %	1/Quarter	Composite
Hardness	---	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Composite
Total Aluminum	---	---	Report mg/L	1/Quarter	Composite
Total Cadmium	---	---	Report mg/L	1/Quarter	Composite
Total Copper	---	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	---	Report mg/L	1/Quarter	Composite
Total Lead	---	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	---	Report mg/L	1/Quarter	Composite
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic[10]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Hardness	---	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/Quarter	Grab
Total Aluminum	---	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	---	Report mg/L	1/Quarter	Grab
Total Copper	---	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	---	Report mg/L	1/Quarter	Grab

Total Lead	---	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	---	Report mg/L	1/Quarter	Grab
Dissolved Organic Carbon[11]	---	---	Report mg/L	1/Quarter	Grab
pH[12]	---	---	Report S.U.	1/Quarter	Grab
Temperature[12]	---	---	Report °C	1/Quarter	Grab
Total Phosphorus[13] (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]**
$CBOD_5$	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
Perfluorohexanesulfonic acid (PFHxS)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[7]	---	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[7]	---	---	Report ng/L	1/Quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[14]	---	---	Report ng/g	1/Quarter	Composite[15]
Perfluorononanoic acid (PFNA)[14]	---	---	Report ng/g	1/Quarter	Composite[15]
Perfluorooctanesulfonic acid (PFOS)[14]	---	---	Report ng/g	1/Quarter	Composite[15]
Perfluorooctanoic acid (PFOA)[14]	---	---	Report ng/g	1/Quarter	Composite[15]

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 the State of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

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

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

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

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

5. The limit is a rolling annual average, reported in million gallons per day (MGD), which will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months. Also report monthly average and maximum daily flow in MGD.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). For NH: See Part I.G.1 below for a provision to modify the pH range.

7. Report in nanograms per liter (ng/L). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for wastewater is available.

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

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

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

11. 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.

12. 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.

13. See Part I.G.2 for special conditions regarding ambient phosphorus monitoring.

14. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for sludge is available.

15. Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

Part I.A., continued.

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

3. The discharge shall be free from 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 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. In accordance with 40 CFR § 122.44(j)(1), the Permittee must identify, in terms of character and volume of pollutants contributed from Significant Industrial Users (SIUs) discharging into the POTW 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.

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. 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.H below for reporting requirements.

2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location (including latitude and longitude) and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

a. All sanitary sewer lines and related manholes;

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

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

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

e. All pump stations and force mains;

f. The wastewater treatment facility(ies);

g. All surface waters (labeled);

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

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

j. The scale and a north arrow; and

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

5. Collection System O&M Plan

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

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

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

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

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

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

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;

(2) A preventive maintenance and monitoring program for the collection system;

(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;

(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and

(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the

permit.

6. Annual Reporting Requirement

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

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

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

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

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

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

f. If the monthly average flow exceeded 80 percent of the facility's 5.03 MGD design flow (4.02 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.

D. ALTERNATE POWER SOURCE

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

E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM

1. The Permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure

continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of this permit, the Permittee shall prepare and submit a written technical evaluation to EPA analyzing the need to revise local limits. As part of this evaluation, the Permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the Permittee shall complete and submit the attached form (see **Attachment C –** Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the Permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

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

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

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

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

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

3. The Permittee shall provide EPA and the State with an annual report describing the Permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with § 403.12(i). The annual report shall be consistent with the format described in **Attachment D** (Industrial Pretreatment Program Annual Report) of this permit and shall be submitted no later than **March 1** of each year.

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

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

6. The Permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The Permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the Permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the Permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The Permittee will implement these proposed changes pending EPA Region1's approval under 40 CFR § 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

7. Beginning the first full calendar quarter following 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater is available, 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
    - Contaminated Sites
    - Fire Fighting Training Facilities
    - Airports
    - Any Other Known or Expected Sources of PFAS

Sampling shall be for the following PFAS chemicals:

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

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

F. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 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. SPECIAL CONDITIONS

1. Provision to Modify pH Range

The pH range may be modified if the Permittee satisfies conditions set forth in Part I.I.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 even numbered year that occurs at least six months after permit issuance, and during even 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. For the years that monitoring is not required, the Permittee shall report NODI code "9" (conditional monitoring not required).

A sampling plan shall be submitted to EPA and NHDES (in accordance with Part I.H.2 and Part I.H.7, respectively) at least three months prior to the first planned sampling date as part of a Quality Assurance Project Plan. The sampling and analysis plan and/or supporting monitoring records shall include at a minimum the following information or criteria:

a) Site map with location of sampling point including a description of sampling point location, waterbody name, town/city and longitudinal/latitudinal coordinates.
b) Description of sampling methodology to include but not limited to:
    (1) Sample preservation prior to laboratory analysis
    (2) Sampling frequency
    (3) Replicate frequency, whether analyzed in house or by a contract laboratory, to be each sample event. Designate the replicate sample on monitoring records with "REP."
c) Individual(s) who performed the sampling
d) Date(s) and time(s) sampling and analyses were performed
e) Laboratory name
f) Laboratory analysis method
g) Total phosphorus laboratory Reporting Detection Limit (RDL) and Method Detection Limit (MDL). The RDL shall be 5 ug/L or less.
h) All data and monitoring information shall be retained for 6 years from the date of the sample event and will be made available to EPA and NHDES upon request.
i) Data for the sample shall be entered in the DMR.
    (1) If applicable, attach contract laboratory results for sample and replicate, including chain of custody, to the relevant DMR.
    (2) The relative percent difference (RPD) between the sample and its corresponding replicate sample should be ≤ 20%. A comment on the DMR identifying the RPD for the sample event is to be included. If the analysis is conducted in house, comment is to include result for replicate sample also.
j) Other changes or criteria as specified by the agencies

H. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. This includes the NHDES Monthly Operating Reports (MORs). See Part I.H.7. for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Industrial User and Pretreatment Related Reports

a. Prior to 21 December 2025, all reports and information required of the Permittee in the Industrial Users and Pretreatment Program section of this permit shall be submitted to the Pretreatment Coordinator in EPA Region 1 Water Division (WD). Starting on 21 December 2025, these submittals must be done electronically as NetDMR attachments and/or using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. These requests, reports and notices include:

(1) Annual Pretreatment Reports,

(2) Pretreatment Reports Reassessment of Technically Based Industrial Discharge Limits Form,

(3) Revisions to Industrial Discharge Limits,

(4) Report describing Pretreatment Program activities, and

(5) Proposed changes to a Pretreatment Program

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

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

4. Submittal of Biosolids/Sewage Sludge Reports

   By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

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

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

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request for reduction in testing frequency;

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

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

6. Submittal of 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/

7. 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.H.3 through I.H.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

8. Verbal Reports and Verbal Notifications

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

   b. Verbal reports and verbal notifications shall be made to:

EPA ECAD at 617-918-1510
and
NHDES Assigned NPDES Inspector at 603-271-1493

I. 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-A13,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. 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.

8. When the effluent discharged for a period of three (3) consecutive months exceeds 80 percent of the 5.03 MGD design flow (4.02 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.

Attachment A

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

Attachment B

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL

USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

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

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

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

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

2. Test Variability (Test Sensitivity)

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

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

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

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

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

Attachment C

EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

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

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

Please read direction below before filling out form.

ITEM I.

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

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

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

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

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

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

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

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

ITEM V.

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

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

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

Item VI.

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

(Item VI. continued)

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

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

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

ITEM VII.

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

ITEM VIII.

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

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

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

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

REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS (TBLLs)

POTW Name & Address : _____

NPDES PERMIT # : _____

Date EPA approved current TBLLs : _____

Date EPA approved current Sewer Use Ordinance : _____

ITEM I.

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

_____

_____

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

If yes, explain.

_____

_____

ITEM V.

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

ITEM VI.

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

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

*Hardness Dependent (mg/l - CaCO3)

ITEM VII.

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

ITEM VIII.

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

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

Attachment D
Industrial Pretreatment Program Annual Report

The Permittee shall provide the Approval Authority with an annual report that briefly describes the POTW's program activities, including activities of all participating agencies, if more than one jurisdiction is involved in the local program. The report required by this section shall be submitted no later than one year after approval of the POTW's Pretreatment Program, and at least annually thereafter, and must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127. The report required by this section must also include a summary of changes to the POTW's pretreatment program that have not been previously reported to the Approval Authority and any other relevant information requested by the Approval Authority. As of December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to the Approval Authority or initial recipient, as defined in 40 CFR § 127.2(b), in compliance with this section and 40 CFR Part 3 (including, in all cases, Subpart D to part 3), 40 CFR § 122.22, and 40 CFR Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, the Approval Authority may also require POTW Pretreatment Programs to electronically submit annual reports under this section if specified by a particular permit or if required to do so by State law.

The Permittee shall submit to Approval Authority and the State permitting authority a report that contains the following information requested by EPA:

1. An updated list of the POTW's Industrial Users by category as set forth in 40 CFR § 403.8(f)(2)(i), to include:
    a. Names and addresses, or a list of deletions and additions keyed to a previously submitted list. The POTW shall provide a brief explanation of each deletion. This list shall identify which Industrial Users are subject to categorical Pretreatment Standards and specify which Standards are applicable to each Industrial User. The list shall indicate which Industrial Users are subject to local standards that are more stringent than the categorical Pretreatment Standards. The POTW shall also list the Industrial Users that are subject only to local Requirements. The list must also identify Industrial Users subject to categorical Pretreatment Standards that are subject to reduced reporting requirements under paragraph (e)(3), and identify which Industrial Users are Non-Significant Categorical Industrial Users;
    b. Permit status - Whether each SIU has an unexpired control mechanism and an explanation as to why any SIUs are operating without a current, unexpired control mechanism (e.g. permit);
    c. Baseline monitoring reporting requirements for newly promulgated industries;
    d. In addition, a brief description of the industry and general activities.

2. A summary of compliance and enforcement activities during the preceding year, including the number of:
    a. significant industrial users inspected by POTW (include inspection dates for each industrial user),

b. significant industrial users sampled by POTW (include sampling dates for each industrial user),
c. compliance schedules issued (include list of subject users),
d. written notices of violations issued (include list of subject users),
e. administrative orders issued (include list of subject users),
f. criminal or civil suits filed (include list of subject users), and
g. penalties obtained (include list of subject users and penalty amounts).

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

4. The Permittee shall prepare annually a list of industrial users, which during the preceding twelve (12) months have significantly violated Pretreatment Standards or requirements 40 CFR § 403.8(f)(2)(vii). This list is to be published annually in a newspaper of general circulation in the Permittee's service area.

5. A summary of all monitoring activities performed within the previous twelve (12) months. The following information shall be reported:
   a. Total number of SIUs inspected;
   b. Total number of SIUs sampled; and
   c. For all industrial users that were in Significant Non-Compliance during the previous twelve (12) months, provide the name of the violating industrial user; indicate the nature of the violations, the type and number of actions taken (administrative order, criminal or civil suit, fines or penalties collected, etc.) and current compliance status. Indicate if the company returned to compliance and the date compliance was attained. Determination of Significant Non-Compliance shall be performed.

6. A summary of all enforcement actions not covered by the paragraph above conducted in accordance with the approved Enforcement Response Plan.
7. A description of actions being taken to reduce the incidence of significant violations by significant industrial users.
8. A detailed description of all interference and pass-through that occurred during the past year.
9. A thorough description of all investigations into interference and pass-through during the past year.
10. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies.
11. The Permittee shall analyze the treatment facility influent and effluent at least annually for the presence of the toxic pollutants listed in 40 CFR Part 122 Appendix D (NPDES Application Testing Requirements) Table III as follows:

    Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Cyanide, and Phenols.

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

12. The Permittee shall analyze the treatment facility sludge (biosolids) prior to disposal, for the presence of toxic pollutants listed above in 40 CFR 122 Appendix D (NPDES Application Testing Requirements) Table III at least once per year. If the Permittee does not dispose of biosolids during the calendar year, the Permittee shall certify to that in the Pretreatment Annual Report and the monitoring requirements in this paragraph shall be suspended for that calendar year.

    The Permittee shall use sample collection and analysis procedures as approved for use under 40 CFR Part 503 or specified in the EPA Region 8 General Permit for biosolids.

13. The summary shall include an evaluation of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraphs above or any similar sampling program described in this Permit.

14. Identification of the specific locations, if any, designated by the Permittee for receipt (discharge) of trucked or hauled waste, if modified.

15. Information as required by the Approval Authority or State permitting authority on the discharge to the POTW from the following activities:

    a. Groundwater clean-up from underground storage tanks;
    b. Trucked or hauled waste; and
    c. Groundwater clean-up from RCRA or Superfund sites.

16. A description of all changes made during the previous calendar year to the Permittee's pretreatment program that were not submitted as substantial or non-substantial modifications to EPA.

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

18. Results of all PFAS sampling conducted of industrial discharges in accordance with the Pretreatment Program requirements in Part I of the NPDES permit.
19. Any other information that may be deemed necessary by the Approval Authority.

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

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

(1) Criminal Penalties

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

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

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

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

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

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

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

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

d. *Prohibition of bypass.*

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

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

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

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

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

5. Upset

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

improper operation.

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

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

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

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

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

e. *Twenty-four hour reporting.*

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

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

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

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

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

Agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Municipality

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Upset see B.5.a. above.

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

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

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

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

2. Commonly Used Abbreviations

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

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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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: NH0100668

PUBLIC NOTICE START AND END DATES: April 19, 2022 – May 18, 2022

NAME AND MAILING ADDRESS OF APPLICANT:

City of Rochester
45 Old Dover Road
Rochester, NH 03867

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Rochester Wastewater Treatment Facility
175 Pickering Road
Gonic, NH 03839

RECEIVING WATER AND CLASSIFICATION:

Cocheco River, Assessment Unit NHRIV600030607-15
Piscataqua-Salmon Falls Watershed
Class B

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Appendices

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 Rochester Wastewater Treatment Facility (the Facility) into the Cocheco River.

The permit currently in effect was issued on July 23, 1997 with an effective date of September 1, 1997 and expired on August 31, 2002 (the 1997 Permit). The Permittee filed an application for permit reissuance with EPA dated May 1, 2002, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on September 18, 2002, the Facility's 1997 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d).

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

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 CFR §§ 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, and 304(d); 40 CFR Parts 122, 125, 131.

2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD_5), 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 WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, 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 the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

[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)*

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

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

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high

[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).

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.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 1997 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.

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

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The location of the treatment plant and Outfall 001 to the Cocheco River are shown in Figure 2. The latitude and longitude of the outfall is 43º 15' 51" N, 70º 58' 8" W.

The Rochester Wastewater Treatment Facility (WWTF) is an activated sludge wastewater treatment facility that serves approximately 30,000 residents in the Town of Rochester. The Facility has a design flow of 5.03 MGD, and the median flow for the last 5 years has been 3.04 MGD. The system is a separate system with no combined sewers. Wastewater is comprised of mostly domestic sewage with some commercial sewage and some septage.

There are 7 industrial users that discharge to the POTW:

(1) Albany Engineered Composites: Metal finishing, aircraft parts, 2 outfall locations;
(2) Bacon Felt Company: Manufacturing and fabrication of felt fabric;
(3) Frisbie Hospital: medical care facility;
(4) Lydall Performance Materials: specialty paper mill;
(5) Simple Life Recycling: Reconditioned metal working fluid & metal scrap
(6) Thompson Investment Casting: Metal finishing;
(7) Turnkey Recycling and Environmental Enterprises

Pollutants introduced into POTWs by a non-domestic source shall not pass through the POTW or interfere with the operation or performance of the treatment works.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from May 2016 through April 2021 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

A flow diagram of the Treatment Facility is shown in Figure 3.

3.1.1.1 Headworks

The unit processes at 151 Pickering Road, which is offsite from the main WWTF site, include screening, grit removal and influent pumping. Improvements were made to this portion of the facility in 2011/2012. There are three vertical centrifugal influent pumps, and two pumps can operate up to a peak flow of 16 MGD. Also located at this site are aeration blowers, emergency standby generator and an alternative septage receiving station.

A new extension of the headworks with only grit removal (no screening) is located at 245 Pickering Road, which was part of the 2001 upgrade. When flows exceed 10 MGD, automatic

weirs, activated by flow meters, direct 10 MGD to the main treatment process and the remaining flow (up to 6 MGD) is bypassed to the equalization (EQ) lagoons.

3.1.1.2 Activated Sludge Process and Aerated Basins

Following the headworks, flow is directed to the extended air activated sludge process, which includes two parallel train aeration basins followed by three secondary clarifiers. Each aeration basin has three anoxic zones in series at the influent end, followed by aeration. Each anoxic zone is divided into three smaller zones within each train.

Improvements have been made to the aeration basin portion of the process to allow operation of the aeration zones in a Simultaneous Nitrification and Denitrification (SND) mode with the addition of a supplemental carbon source.

After the secondary clarifiers, flow proceeds to one of three cloth filters. The filter media has an effective pore size of 10 microns.

Following the tertiary treatment, a Trojan© 4000 ultraviolet light (UV) disinfection system is used to reduce effluent bacteria. Following the disinfection system, to meet the effluent dissolved oxygen (DO) limit, a fine bubble post aeration system with three positive displacement blowers is used as the final treatment process at this facility. As part of the 2001 upgrade, flows in excess of the secondary treatment process capacity are diverted to one of two EQ lagoons. These lagoons were part of the lagoon system used prior to 2001. These lagoons have the capacity to receive flow in excess of 10 MGD, as well as: waste active sludge, septage, tertiary filter backwash, and filtrate from the water treatment facility alum sludge freeze/thaw drying lagoons.

As of 2022, a new Biosolids Dewatering Facility is in the construction process. Once the new Biosolids facility is constructed and operational, the solids in the EQ basins will be removed and utilized primarily as EQ basins only.

3.1.2 Collection System Description

The Rochester WWTF is served by a separate 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.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Rochester WWTF discharges through Outfall 001 into the Cocheco River, a tributary of the Piscataqua River, within Assessment Unit NHRIV600030607-15. This segment is 4.14 miles in length and travels from the Mill Pond Dam in Gonic, NH to the confluence with Isinglass River in Pickering, NH. The Cocheco River then flows into the Piscataqua River in Dover, NH. The Piscataqua River discharges to the Great Bay Estuary in Portsmouth, NH.

The Cocheco 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 Cocheco River Assessment Unit NHRIV600030607-15 is listed in the *New Hampshire Year 2018 Integrated List of Waters* ("303(d) List") as a Category 5 "Waters Requiring a TMDL.[5] The pollutants requiring a TMDL are pH, iron, and mercury in fish tissue. New Hampshire is covered under the Regional Northeastern Mercury TMDL.[6] To date no TMDL has been developed for this segment for any of the other listed impairments. 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	Not Supported (Iron, pH)
Primary Contact Recreation	Supported
Potential Drinking Water Supply	Supported
Secondary Contact Recreation	Supported
Fish Consumption	Not Supported (Mercury)
Wildlife	Not Assessed

EPA notes that the segment immediately downstream from receiving water segment, AU NHIMP600030608-02 (Watson Waldron Dam),

4.2 Ambient Data

A summary of the ambient data collected by the permittee 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.

[5] *https://www4.des.state.nh.us/onestoppub/SWQA/010600030608_2018.pdf*
[6] https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=67750

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 water[7]. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs at Env-Wq 1705.2 require that:

(a) The flow used to calculate permit limits shall be specified in (b) through (d), below.
(b) For tidal waters, the flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99% of the time.
(c) For non-tidal rivers and streams, permit limits for all human health criteria for carcinogens shall be developed based on the long-term harmonic mean flow, which is the number of daily flow measurements divided by the sum of the reciprocals of the daily flows.
(d) 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.

NHDES calculated the 7Q10 for the Cocheco River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gaging to the Facility along Cocheco River (Station Number 01072800 at Rochester[8]). NHDES determined the estimated drainage area for the Facility using the following:

- analysis of the stream flow data for the period of record from April 1, 1995 through March 31, 2020 at the upstream USGS Cocheco River Near Rochester, NH Gage (01072800)
- estimation of watershed flow contributions to the river segment between the upstream gage and the Rochester WWTF outfall using the Dingman equation[9]

<u>Dilution Factor Calculation</u>
The dilution factor for the Rochester WWTF was calculated using the following equation:

$$\text{Dilution Factor} = 0.9*(Q_S+Q_D)/Q_D$$

where

Q_S = 7Q10 flow of Cocheco River just upstream of outfall = 3.47 cfs = 2.24 MGD
Q_D = design flow of Rochester WWTF = 5.03 MGD
0.9 = factor to reserve 10% of the receiving water assimilative capacity

Dilution Factor = (0.9)*(2.24+5.03)/5.03 = 1.3

[7] EPA Permit Writer's Manual, Section 6.2.4
[8] USGS StreamStats National Data Collection Station Report for Station 01072800; http://streamstatsags.cr.usgs.gov/gagepages/html/01072800.htm
[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.

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 May 2016 to April 2021 (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 facility's design flow is 5.03 MGD. The 1997 Permit did not include a flow limit but did require flow reporting. The DMR data during the review period shows that the monthly average flow ranged from 1.85 MGD to 5.36 MGD, and that the 12-month rolling average flow ranged from 2.90 MGD to 4.22 MGD.

The Draft Permit includes a 5.03 MGD rolling annual average flow limit, based on the facility's design flow. 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 Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

5.1.2.1 $CBOD_5$ Concentration Limits

The 1997 Permit contains seasonal $CBOD_5$ limits that were developed to address dissolved oxygen impairments in the receiving water at the time that permit was issued. These limits are shown below:

The summer $CBOD_5$ limits (effective June 1 through October 31) are

- average monthly limit of 6 mg/L,
- average weekly limit of 6 mg/L, and
- maximum daily limit of 9 mg/L.

The winter $CBOD_5$ limits (effective November 1 through May 31) are

- average monthly limit of 13 mg/L,

- average weekly limit of 21 mg/L, and
- maximum daily limit of 23 mg/L.

The DMR data during the review period shows that there have been seven exceedances of $CBOD_5$ concentration limits. All of the exceedances occurred during the summer period.

These limits, which are more stringent that the secondary treatment standards in 40 CFR § 133.102, are maintained in the Draft Permit and are therefore consistent with the anti-backsliding requirements discussed in Section 2.6.

The monitoring frequency is 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 $CBOD_5$ Mass Limits

The 1997 Permit contains seasonal $CBOD_5$ mass limits which are based on the concentration limits in the 1997 Permit and the annual average design flow of the facility of 5.03 MGD. These limits are derived as shown below.

$$L = C_d * Q_d * 8.34$$

Where:
L = Maximum allowable load in lb/day
C_d = Maximum allowable effluent concentration for reporting period in mg/L
Q_d = Annual average design flow of Facility
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Summer Limits:

Average Monthly:	6 mg/L * 5.03 MGD * 8.345 = 252 lb/day
Average Weekly:	6 mg/L* 5.03 MGD * 8.345 = 252 lb/day
Maximum Daily:	9 mg/L* 5.03 MGD * 8.345 = 378 lb/day

Winter Limits:

Average Monthly:	13 mg/L * 5.03 MGD * 8.345 = 546 lb/day
Average Weekly:	21 mg/L* 5.03 MGD * 8.345 = 882 lb/day
Maximum Daily:	23 mg/L* 5.03 MGD * 8.345 = 965 lb/day

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

The Draft Permit proposes the same $CBOD_5$ mass limits as those in the 1997 Permit. The monitoring frequency is 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 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The 1997 Permit contains seasonal TSS limits which were developed to address dissolved oxygen impairments in the receiving water at the time that permit was issued. These limits, which are more stringent than the secondary treatment standards in 40 CFR § 133.102, are shown below:

The summer TSS limits (effective June 1 through October 31) are

- average monthly limit of 6 mg/L,
- average weekly limit of 6 mg/L, and
- maximum daily limit of 9 mg/L.

The winter TSS limits (effective November 1 through May 31) are

- average monthly limit of 13 mg/L,
- average weekly limit of 21 mg/L, and
- maximum daily limit of 23 mg/L.

The DMR data during the review period shows that there have been two exceedances of TSS concentration limits. Both of the exceedances occurred during the summer period.

These limits, which are more stringent that the secondary treatment standards in 40 CFR § 133.102, are maintained in the Draft Permit, and are therefore consistent with the anti-backsliding requirements discussed in Section 2.6. The monitoring frequency is 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 1997 Permit contains seasonal TSS mass limits which are based on the concentration limits in the 1997 Permit and the annual average design flow of the facility of 5.03 MGD. These limits are derived are shown below.

$$L = C_d * Q_d * 8.34$$

Where:
L = Maximum allowable load in lb/day
C_d = Maximum allowable effluent concentration for reporting period in mg/L
Q_d = Annual average design flow of Facility
8.34 = Factor to convert effluent concentration in mg/L and design flow in MGD to lb/day

Summer Limits:
Average Monthly: 6 mg/L * 5.03 MGD * 8.345 = 252 lb/day
Average Weekly: 6 mg/L* 5.03 MGD * 8.345 = 252 lb/day
Maximum Daily: 9 mg/L* 5.03 MGD * 8.345 = 378 lb/day

Winter Limits:
Average Monthly: 13 mg/L * 5.03 MGD * 8.345 = 546 lb/day
Average Weekly: 21 mg/L* 5.03 MGD * 8.345 = 882 lb/day
Maximum Daily: 23 mg/L* 5.03 MGD * 8.345 = 965 lb/day

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

The Draft Permit proposes the same TSS mass limits as those in the 1997 Permit. The monitoring frequency is twice per week, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance for facilities not using lagoons or sand filters for secondary treatment.

5.1.4 Eighty-Five Percent (85%) $CBOD_5$ and TSS Removal Requirement

In accordance with the provisions of 40 CFR § 133.102(a)(4) and (b)(3), the 1997 Permit requires that the 30-day average percent removal for BOD_5 and TSS be not less than 85%. The DMR data during the review period shows that the median $CBOD_5$ and TSS removal percentages are 98% and 98%, respectively. There were no exceedances of the 85% removal requirement for $CBOD_5$ or TSS during that period.

The requirement to achieve 85% $CBOD_5$ 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 no exceedances of the pH limitations.

The pH requirements in the 1997 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 1997 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 DMR data during the review period shows one exceedance of the maximum daily limit, in June 2016.

The Draft Permit proposes maintaining the effluent limits for bacteria in the 1997 Permit. 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 times per week, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance. These limits and sampling frequency are the same as in the 1997 Permit.

5.1.7 Dissolved Oxygen

The 1997 Permit includes a dissolved oxygen minimum limit of 7.0 mg/L. This requirement was established to address dissolved oxygen impairments in the receiving water at the time that permit was issued and to assure that assure that dissolved oxygen levels remain above the state water quality standard of 5.0 mg/L, particularly during low flow periods.

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

The Draft Permit maintains the dissolved oxygen limit of 7.0 mg/L that is in the 1997 Permit and is therefore consistent with anti-backsliding requirements described in Section 2.6.

5.1.8 Ammonia

The effluent limitations for ammonia in the 1997 Permit are 3.61 mg/L monthly average and 4.31 mg/L daily maximum for ammonia during warm weather (June through October). For the cold weather period (November through May), the limits are 7.65 mg/L monthly average and 26.3 mg/L daily maximum. The limits were established to protect downstream water quality in the Cocheco River.

The DMR data during the review period shows there were no exceedances of the ammonia limits.

Ambient data, taken upstream of the Rochester outfall in the Cocheco River, is presented in Appendix A and shows the median concentration for the warm weather period (May 1 through October 31) is 0 mg/L and for the cold weather period (November 1 through April 30) is 0.07 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.

EPA notes that since the 1997 Permit already contained a limit for ammonia, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring data from the upstream Cocheco River samples, which indicates that the median pH is 6.56 S.U. Additionally, the Cocheco River in the vicinity of the Rochester WWTF 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.

The current warm weather chronic limit is 3.61 mg/L and EPA has determined that a more stringent limit of 2.0 mg/L is necessary to continue to protect WQS for the reasons specified in Appendix B. Likewise, the cold weather chronic limit of 7.65 mg/L will be lowered to 6.3 mg/L in the Draft Permit to continue to protect WQS under current conditions. These more stringent limits do not include a compliance schedule given that the facility has been in consistent compliance with these lower limits during the review period.

The warm weather season has also been expanded to include May, so that the warm weather limit will be in effect from May through October, and the cold weather limit will be in effect from November through April. This change in season ensures that the limits are protective of the ammonia criteria under critical conditions in May based on EPA's temperature assumptions described above.

The maximum daily ammonia limits continue to be protective of water quality standards and will be carried forward into the Draft Permit. The Draft Permit requires twice per week monitoring of the effluent for ammonia, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance.

EPA notes that the 1997 Permit also included mass-based ammonia limits that were based on the concentration limits in that permit. EPA has determined that under critical conditions, the concentration-based limits described above are more stringent than mass based limits, and are sufficient to protect water quality standards. Therefore, the mass-based ammonia limits have not been carried forward in the Draft Permit.

5.2 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 permit, both phosphorus and nitrogen are nutrients of concern as discussed below.

5.2.1 Total Nitrogen

The Rochester WWTF has been authorized to discharge nitrogen under the Great Bay Total Nitrogen General Permit (General Permit number NHG58A000). Their discharge under that permit became effective on May 1, 2021, with authorization number NHG58A001. Therefore, the discharge of nitrogen is not included in this individual permit.

5.2.2 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter;[10] 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 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

[10] "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.

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 exceedances 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 VII, 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 0.1 mg/L because the receiving water is a stream/river not discharging directly to a lake or impoundment.

Prior to a consideration of site-specific information and data relevant to the discharge, EPA observes that its overall approaches to establishing both phosphorus and nitrogen effluent limitations in NPDES permits have been extensively adjudicated over the past fifteen years, and they have been found to be reasonable and upheld by both the Environmental Appeals Board and the United States Court of Appeals for the First Circuit. Petitions for certiorari have twice been denied by the United States Supreme Court for Region 1 nutrient permitting (total phosphorus and total nitrogen) decisions under 40 CFR § 122.44(d)(1)(vi) in recent years. Should the public wish to review these decisions, they are available here:

City of Taunton v. EPA (EAB and First Circuit, Supreme Court cert. denied)

https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/0A045314B61E682785257FA80054E600/$File/Denying%20Review%20Vol-17.pdf
https://yosemite.epa.gov/oa/eab_web_docket.nsf/A568248B44D1C63785258053005AEDD0/$File/Opinion%207.9.2018%20(46%20pages).pdf

Upper Blackstone Water Pollution Abatement Dist. v. EPA (EAB and First Circuit, Supreme Court cert. denied)

https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/A44361EC4C211B0685257865006EA1EC/$File/Upper%20Blackstone.pdf
https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/2D0D249E441A18F185257B6600725F04/$File/October%2018%202017.pdf

In re City of Lowell, MA (2020)

https://yosemite.epa.gov/OA/EAB_WEB_Docket.nsf/Filings%20By%20Appeal%20Number/6D63DE203BB980D2852585960069906D/$File/City%20of%20Lowell.pdf

In re Town of Newmarket Wastewater Treatment Plant (2013)

https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Case~Name/97CCD304C9B7E58585257C3500799108/$File/Newmarket%20Decision%20Vol%2016.pdf

In re City of Attleboro MA Wastewater Treatment Plant (2009)

https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/NPDES%20Permit%20Appeals%20(CWA)/D506EBEE22A1035E8525763300499A78/$File/Attleboro.pdf

EPA adheres to the overarching decision-making framework for nutrient permitting established by these precedents: administrative and judicial bodies have expressly found EPA's approach to be reasonable under the Act and, for its part, EPA has found the approach in its experience to be workable, expeditious, as well as demonstrably effective in addressing nutrient pollution, in a manner that is neither overly stringent, nor overly lax. While drawing on information from the scientific literature and national and regional EPA guidance, EPA also accounts for site-specific facts and circumstances surrounding the discharge and receiving waters in arriving at the permit result. EPA acknowledges that there are a range of alternative technical approaches and opinions when permitting for nutrients to ensure that uses for the waters designated by the state for its citizens are achieved; while some of these may have merit, EPA's existing approach has been proven to have merit and provides predictability for the regulated community.

Site-Specific Analysis

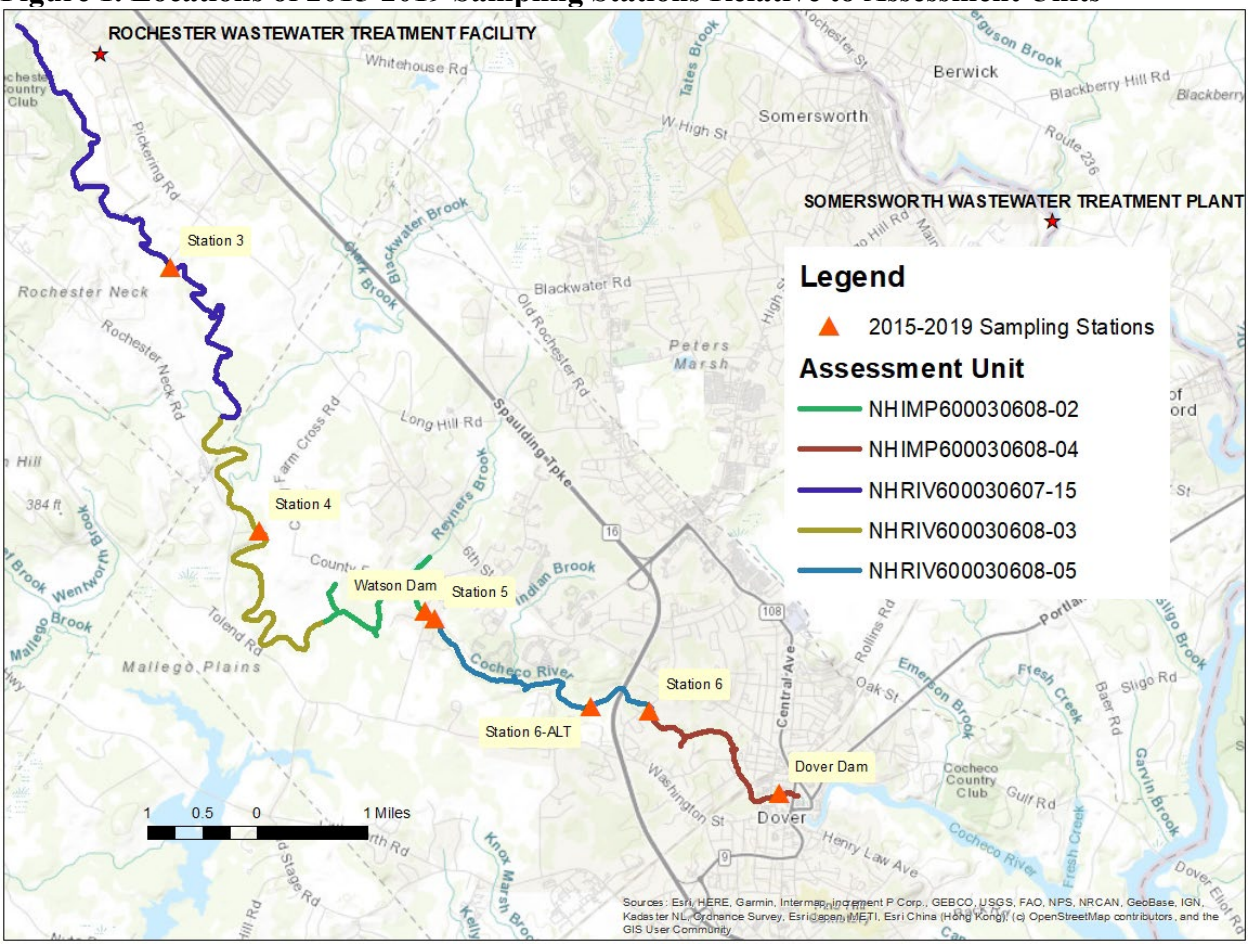
In developing the Draft Permit, EPA evaluated both instream and effluent total phosphorus data as well as other available information pertaining to response variables which might indicate the impacts of nutrient inputs into the receiving water. As part of this evaluation, EPA reviewed information provided by the Town of Rochester on March 4, 2022, which included the results of qualitative (visual algal/macrophyte surveys) and quantitative (water quality sampling) field investigations that were conducted in the non-tidal and tidal reaches of the Cocheco River from 2015-2017[11]. EPA also reviewed the results of water quality surveys that were conducted in 2019 as part of a Federal Energy Regulatory Commission (FERC) study for two dams on the Cocheco River (the 2019 Report)[12].

EPA provides an assessment of their review of these reports below. While these reports are not attached to the Fact Sheet, they are included in the administrative record and are available to the public upon request. The sampling stations and their locations relative to their respective assessment units are shown below in Figure 1.

[11] Technical Memorandum: Visual Algal Survey of the Cocheco River, Brown and Caldwell, May 2016. 2016 and 2017 Field Investigations of the Cocheco River and Regional Waters, Brown and Caldwell, May 2017 and April 2018

[12] Cocheco Falls (FERC No. 4718) and Watson (FERC No. 6240) Projects FERC Relicensing 2019 Study Report, Americas Energy Services and Lakeside Engineering Inc., January 2020.

Figure 1. Locations of 2015-2019 Sampling Stations Relative to Assessment Units



In 2015, visual algal surveys were performed on August 26 and 27 at a total of six stations (1 upstream and 5 downstream of the discharge). No water quality data were collected. Notably, two of the six stations (1 upstream and 1 downstream of the discharge) demonstrated between 10 and 25% coverage by macroalgae or algal mats greater than 1 mm thick. Additionally, other stations demonstrated elevated levels of macrophytes, algal mats less than 1 mm thick and/or pervasive duckweed growth. For example, pervasive duckweed growth can be observed on the surface of the dam backwater near Covered Bridge Road in the middle of assessment unit NHRIV600030608-03 (shown in Photo 7 at page 9 of the 2015 report, reproduced below). This information demonstrates that there is reasonable potential for the discharge to cause or contribute to cultural eutrophication downstream and, therefore, must be treated to remove phosphorus to ensure attainment and maintenance of the state's narrative water quality standards [*See* Env-Wq 1703.14(b) and (c)], especially in the more sensitive areas downstream like the "several extremely slow moving mini-segments" described in the report near the Watson Road dam.

Photo 7 from 2015 Cocheco River Report (page 9)

In 2016, water quality and algal surveys were conducted on August 3-4 and September 21-22 at nine stations (2 upstream and 7 downstream of the discharge). Five of the nine stations were sampled twice (in August and September) and the remaining four stations were sampled only once (in September). Upon review of these data, EPA notes that the level of instream total phosphorus in the September sampling dropped significantly between Station 4 which is located in the middle of assessment unit NHRIV600030608-03 (0.760 mg/L) and Station 5 which is located immediately downstream of the Watson Bridge dam that borders assessment units NHIMP600030608-02 and NHRIV600030608-05 (0.039 mg/L). These two stations are located approximately 1 mile apart. This significant drop indicates uptake of phosphorus in the impoundment (NHIMP600030608-02) located between these two stations, corresponding to the pervasive duckweed growth found in this same general location in the 2015 report discussed above. Additionally, the algal surveys conducted on both sampling dates demonstrate elevated levels of algal growth and coverage, especially in Stations 4 (middle of NHRIV600030608-03), 5 (beginning of NHRIV600030608-05) and 6 (beginning of NHIMP600030608-04), further demonstrating likely violations of the state's narrative water quality standards.

In 2017, water quality and algal surveys were conducted on August 14-16 and October 24-26 at eight stations (1 upstream and 7 downstream of the discharge). Upon review of this data, EPA notes that downstream phosphorus levels were significantly lower than in 2016. Station 3 (located in the middle of NHRIV600030607-15) in September 2016 was 1.3 mg/L, whereas the same station in 2017 was 0.04 mg/L in August 2017 and 0.058 mg/L in October 2017 (*i.e.*, over

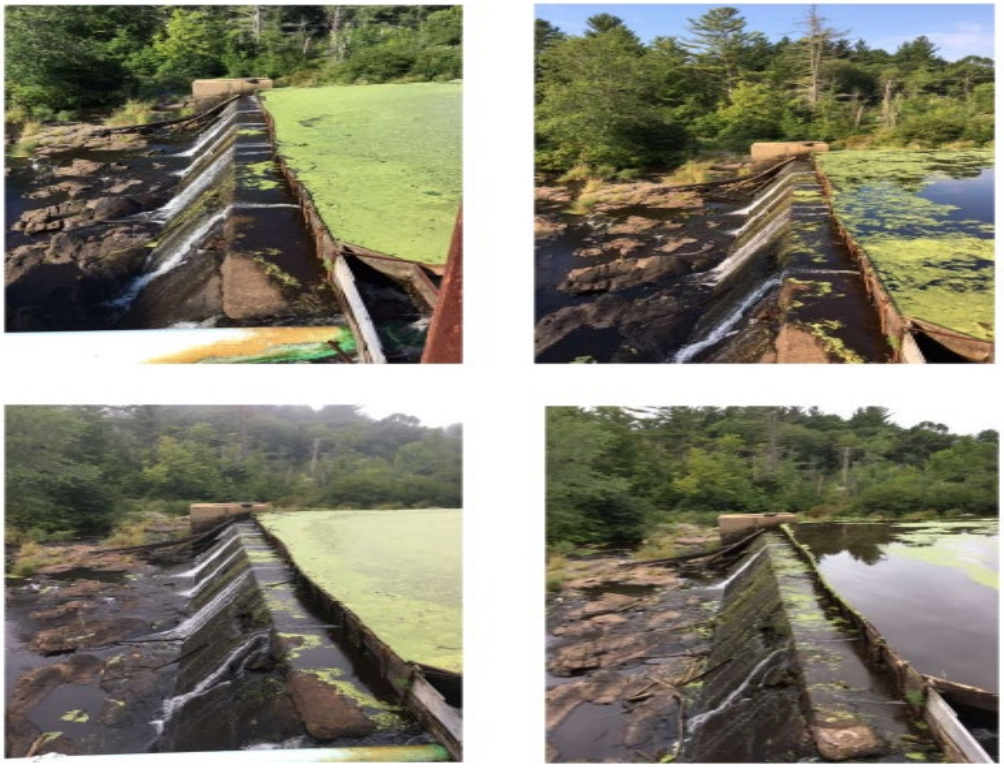
95% lower than 2016). This drastic reduction in ambient phosphorus from 2016 to 2017 can be attributed to the equivalently drastic reduction in effluent phosphorus from the Rochester WWTF which was 5.8 mg/L in September 2016 compared to 0.2 mg/L in August 2017 and 0.22 mg/L in October 2017 (*i.e.*, also over 95% lower than 2016 although still well above the proposed effluent limit discussed below). However, even at these much lower instream phosphorus levels, the water quality data show that dissolved oxygen supersaturation occurred in assessment unit NHIMP600030608-02 immediately upstream of the Watson Road dam (117.5%) as well as further downstream in assessment unit NHRIV600030608-05 at Station 6 ALT (111.1%) and in assessment unit NHEST600030608-01 at the station just upstream of the Dover Dam (104.1%). This supersaturation corresponds to ambient phosphorus levels in the range of 0.03 to 0.04 mg/L at these locations in August 2017. This suggests that even at these lower levels of phosphorus in Rochester's effluent (*e.g.*, 0.2 mg/L), the resulting phosphorus load in the impoundment (NHIMP600030608-02) upstream of the Watson Road dam continues to exhibit signs of eutrophication indicating that a limit below this level is necessary to protect water quality standards downstream. Notably, the time of sample collection ranged from mid-late morning throughout the early afternoon hours, missing the early morning hours in which one would expect dissolved oxygen concentration levels to be indicative of the degree of plant respiration (*i.e.*, hypoxia). Therefore, it is not surprising that dissolved oxygen supersaturation was observed during the time of sample collection rather than low dissolved oxygen concentrations which would be more likely to be found in the early morning hours when no sampling was performed.

In 2019, water quality surveys were conducted as part of a Federal Energy Regulatory Commission (FERC) study for two dams on the Cocheco River (the 2019 Report)[13]. Samples collected within the Watson Dam impoundment (NHIMP600030608-02) on August 6, 9, 13, 15, 16 and 20 of 2019 demonstrated dissolved oxygen levels less than the minimum State dissolved oxygen criterion of 5.0 mg/L, especially below two meters of depth in the water column (See Table 7.4 of the 2019 Report). Additionally, other stations located at the Watson Dam impoundment (NHIMP600030608-02) demonstrated elevated levels of macrophytes and/or pervasive duckweed growth. For example, emergent and submergent aquatic vegetation, floating duckweed, and aquatic bryophytes were observed at the Watson Dam Bypass Channel on August 9, 13, 16 and 20 of 2019 (shown in Figure D-3 at page 107 of the 2019 Report, reproduced below) and at the Lower Spillway on August 9, 13, 16, 20, 23 and 30, 2019 as well as on September 3 and 9, 2019 (shown in Figure D-5 at page 111 of the 2019 Report, reproduced below).

[13] Cocheco Falls (FERC No. 4718) and Watson (FERC No. 6240) Projects FERC Relicensing 2019 Study Report, Americas Energy Services and Lakeside Engineering Inc., January 2020.

Photo D-3 from 2019 Report (Appendix D page 107)

Photo D-5 from 2019 Report (Appendix D page 111)



This information further illustrates that there is reasonable potential for the discharge of phosphorus from the Rochester WWTF to cause or contribute to cultural eutrophication downstream that must be treated to remove phosphorus to ensure attainment and maintenance of the state's narrative water quality standards [*See* Env-Wq 1703.14(b) and (c)].

Lastly, in the New Hampshire Year 2018 Integrated List of Waters ("303(d) List"), dissolved oxygen saturation is identified as causing impairment of the aquatic life designated use in the downstream segment of the Cocheco River where Station 4 was located (Assessment Unit NHRIV600030608-03). While EPA notes that a permit limit can be established [based on 40 CFR § 122.44(d)(1)(vi)] even without the presence of a downstream water quality impairment, this downstream impairment does provide further evidence of downstream water quality problems for a parameter (dissolved oxygen) that is linked to cultural eutrophication as described above and, therefore, supports EPA's determination below.

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, the reports cited above have provided EPA with information regarding site-specific factors of the receiving water discussed above as well as other factors such as the level of shading below the outfall, seasonal leaf cover, water depth, river velocity, etc. While EPA acknowledges that some downstream locations may be less susceptible to increased phosphorus levels due to site-specific factors, other areas (such as the impoundment above the Watson Road dam) are not less susceptible and may in fact be more susceptible to phosphorus levels. Based on 40 CFR § 122.44(d)(1)(vi), EPA must establish effluent limits that will fully protect designated uses in all downstream waters that may be impacted by the discharge, including especially those areas that are deemed most susceptible.

Therefore, EPA concludes that these reports provide useful information pertaining to the relative abundance of various algal species as well as other river characteristics, but they do not demonstrate that the receiving water is significantly less susceptible to phosphorus loads such that application of the Gold Book target of 0.1 mg/L would be considered too low. On the contrary, these reports justify the need for a phosphorus limit at least as stringent as described in this Fact Sheet (based on the Gold Book instream target of 0.1 mg/L) at this time and may even be used to demonstrate that a more stringent target may be necessary in the future to ensure designated uses are protected in all downstream waters, including the impoundment upstream of the Watson Road dam. Given that Rochester's discharge is not immediately upstream of the impoundment but is approximately 4 miles upstream, EPA has chosen to apply the 0.1 mg/L instream target (rather than the more stringent 0.05 mg/L Gold Book target) at this time. However, if future data demonstrate that the limit established in this permit does not protect designated uses in the downstream impoundment then a more stringent instream target may be applied in a future permitting action.

In order to characterize the receiving water upstream of the discharge, EPA evaluated sampling data from 2016 through 2021[14] (summarized in Table 2 below) which reported in-stream

[14] http://nhdesonestop.sr.unh.edu/html5viewer/ Environmental Monitoring Sites Nonsecure Layer.

phosphorus concentrations collected at Station 18-CCH located approximately 1 mile upstream of the Rochester WWTF. As shown, the median of these upstream data was 0.027 mg/L.

Table 2. Upstream total phosphorus concentrations (mg/L)

Date	18-CCH 1 mile upstream
6/28/2016	0.031
7/19/2016	0.019
8/23/2016	0.0181
10/14/2016	0.0225
6/22/2017	0.0267
7/20/2017	0.0268
8/17/2017	0.0178
4/9/2018	0.0123
6/21/2018	0.0282
7/19/2018	0.0345
8/16/2018	0.0321
6/19/2019	0.0271
7/18/2019	0.0314
8/14/2019	0.0192
10/17/2019	0.0218
6/18/2020	0.0347
7/16/2020	0.0354
8/13/2020	0.0264
4/8/2021	0.0140
6/15/2021	0.0341
7/22/2021	0.0243
8/12/2021	0.0438
Median	0.027

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.

The Rochester WWTF is not required to report effluent phosphorus data on the monthly DMR under their 1997 Permit. However, the facility has been collecting effluent phosphorus data for many years. Upon EPA's request, on December 10, 2021 the City of Rochester transmitted to EPA weekly effluent phosphorus data collected from February 18, 2015 through November 17, 2021. EPA used these data to determine the monthly average for each month during the growing season and summarized the results in Appendix A. As shown in Appendix A, this data shows a range of phosphorus in the effluent from 0.17 mg/L up to 6.63 mg/L with a median concentration

of 1.42 mg/L. As shown in Appendix B, EPA used the 95th percentile[15] of data (6.11 mg/L) along with the ambient data presented above and the 7Q10 flow data described previously to determine that there is reasonable potential for this discharge to cause or contribute to an excursion of WQS for phosphorus during the growing season (April 1 through October 31). Therefore, the Draft Permit proposes a new phosphorus limit of 0.12 mg/L, applicable from April 1 through October 31.

Alternate Mass-based limit analysis and comparison

Phosphorus can also be viewed in terms of mass loading, which requires that Rochester not exceed its permitted phosphorus loading. To ensure a mass-based limit is protective under the worst-case conditions, the limit is calculated using the lowest expected receiving water flow and effluent flow. Hence, the upstream 7Q10 receiving water flow (2.24 MGD) and the lowest monthly average effluent flow during the review period (1.85 MGD, See Appendix A) are used. The numeric mass-based limit is determined based on the following equations:

$$Q_E C_E + Q_s C_s = Q_D C_D \times (0.90)$$

and

$$M_E = Q_E C_E \times 8.345$$

Substituting ($Q_D C_D$) with (M_E/8.345) in the first equation and solving for M_E results in:

$$M_E = (Q_D C_D \times (0.90) - Q_S C_S) \times 8.345$$
$$M_E = 2.6 \text{ lb/day}$$

where:

M_E = mass-based phosphorus limit
Q_E = effluent flow in MGD (lowest monthly average effluent flow = 1.85 MGD)
C_E = effluent phosphorus concentration in mg/L
Q_S = upstream 7Q10 flow (2.24 MGD)
C_S = upstream river phosphorus concentration (0.027 mg/L)
Q_D = downstream flow (4.09 MGD)
C_D = downstream river phosphorus concentration (Gold Book target = 0.100 mg/L)
0.90 = factor to reserve 10% assimilative capacity
8.345 = factor to convert from MGD * mg/L to lb/day

Solving for M_E gives the maximum allowable mass the facility may discharge without violating water quality standards. Table 4, shown below, shows the highest possible phosphorus concentration at a mass load limit of 2.6 lb/day and a range of effluent flow rates.

[15] EPA notes that based on the limited dilution available under critical 7Q10 conditions, any discharge from the WWTF significantly above 0.1 mg/L would result in a finding of reasonable potential to cause or contribute to an excursion above water quality standards and the need to establish a permit limit. Even using the lowest effluent concentration of 0.17 mg/L in this analysis would have resulted in the need to establish an identical permit limit.

In comparison, the potential concentration-based limit of 0.12 mg/L would be more stringent at effluent flows below 2.6 MGD and the potential mass-based effluent limit of 2.6 lb/day would be more stringent at effluent flows above 2.6 MGD. Given that the facility typically discharges above 2.6 MGD in the early months of the growing season (see Appendix A), EPA notes that compliance with a mass-based limit during these early months would require achieving an effluent concentration below 0.12 mg/L during these early months that typically have temperatures well below average summer temperatures.

Based on this analysis and comparison, the Draft Permit proposes a monthly average phosphorus limit of 0.12 mg/L, effective from April 1 through October 31, with sampling at 2/week. EPA is also soliciting comments regarding whether the application of a mass-based limit of 2.6 lb/day in lieu of the concentration-based limit of 0.12 mg/L would be more appropriate.

Since the current treatment facility will be unable to achieve the warm weather effluent limit of 0.12 mg/L without changes to the treatment process, EPA anticipates immediate non-compliance once the permit becomes effective and the need for a facility upgrade to achieve compliance. Rather than include a compliance schedule in the permit, EPA has discussed with the Permittee the possibility of an administrative order that may include a compliance schedule based on the steps necessary to achieve compliance. Once the permit becomes effective, the Permittee can contact EPA's Enforcement and Compliance Assurance Division (ECAD) to discuss this further. EPA notes that the Permittee is currently under an administrative order to achieve its total nitrogen limit of 198 lb/day under the Great Bay Total Nitrogen General Permit.

Additionally, EPA notes that surface waters can also be affected by the year-round accumulation of phosphorus in the sediment during the winter and then be released during warmer weather and contribute to algal growth. Consequently, this Draft Permit establishes a twice per month monitoring requirement during the non-growing season of November 1 to March 31. EPA may use this data in a future permitting action to analyze whether there is a need to establish an effluent limit in the winter months.

5.3 Metals

5.3.1 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 Cocheco 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 41.4 mg/L and the corresponding criteria are also presented in Appendix B.

New Hampshire aluminum criteria are not hardness dependent and should be applied in terms of acid-soluble aluminum (*See* Table 1703-1, Note S). However, without site-specific data showing the fraction of downstream aluminum in the acid-soluble form, EPA assumes that the ratio of acid soluble to total recoverable aluminum is 1:1.

5.3.1.1 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 1997 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_d) allowable to meet WQS based on current conditions.

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

As shown, there is no reasonable potential to cause or contribute to an excursion of WQS for aluminum, cadmium, copper, lead, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals.

A Water Effects Ratio (WER) for copper was accepted by NHDES on October 20, 2016. The WER recommended site-specific copper criteria of 35.4 µg/L chronic and 47.2 µg/L acute based on the Biotic Ligand Model. The acceptance letter is included as Appendix C to this Fact Sheet.

The monthly reporting requirements for copper (Cu), lead (Pb) and zinc (Zn) in the 1997 Permit have not been continued into the Draft Permit because EPA determined that the discharge does not have the reasonable potential to cause or contribute to an excursion above water quality standards for these metals and, therefore, the increased monitoring frequency is no longer necessary. Effluent and ambient monitoring for each of these metals will continue to be required in the quarterly WET tests.

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

The chronic and acute WET limits in the 1997 Permit are C-NOEC greater than or equal to 69% and LC_{50} greater than or equal to 100%, respectively, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has had three exceedances of the *Ceriodaphnia* C-NOEC and one exceedance of the *Pimephales* C-NOEC during the review period. (Appendix A).

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 1.3, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit changes the C-NOEC effluent limit to 77% (*i.e.*, 1/1.3), while continuing the LC_{50} effluent limit of 100%, using the same test organisms and the same testing frequency from the 1997 Permit. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachments A, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) and Attachment B, *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

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

5.3.3 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.[16] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

Background Information for New Hampshire

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:

	MCLs/AGQs	MCLGs
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 AGQSs for these PFAS in State statute at the identical levels as the challenged regulations. The statutory MCLs and AGQSs became effective on July 23, 2020.

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

[16] 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

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

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

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

5.4 Industrial Pretreatment Program

The permittee is required to administer a pretreatment program under 40 CFR part 403. *See also* CWA § 307; 40 CFR 122.44(j). The permittee's pretreatment program received EPA approval on July 23, 1997 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit, which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 CFR part 403 were amended in October 1988, in July 1990, and again in October 2005. Those amendments established new requirements for

implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. The activities that the permittee must address include, but are not limited to, the following: 1) develop and enforce EPA-approved specific effluent limits (technically-based local limits); 2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; 3) develop an enforcement response plan; 4) implement a slug control evaluation program; 5) track significant noncompliance for industrial users; and 6) establish a definition of and track significant industrial users.

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

In addition to the requirements described above, the Draft Permit requires the permittee to submit to EPA in writing, within 180 days of the permit's effective date, a description of proposed changes to permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the Draft Permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually by March 1st, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

5.5 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.

5.6 Infiltration/Inflow (I/I)

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

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

5.7 Operation and Maintenance of the Sewer System

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

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

Several of the requirements in the Draft Permit are not included in the 1997 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules in the Draft Permit for completing these requirements.

5.8 Compliance Schedules

New Hampshire regulations for schedules of compliance in NPDES Permits can be found at Env-Wq 1701.03). Finally, the permitting authority must make a reasonable determination that a schedule of compliance is "appropriate" and that the schedule proposed requires compliance "as soon as possible." *See* 40 CFR § 122.47(a), (a)(1).

5.9 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 Rochester Wastewater Treatment Facility. The Draft Permit is intended to replace the 1997 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 Cocheco River (NHRIV600030607-15).

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 *brevirostrom*) 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 Cocheco River, which drains to the Piscataqua River and subsequently the Great Bay. The facility is located

approximately 11 miles upstream from the intersection with the Piscataqua River, which serves as critical habitat for two species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrom*) and the Atlantic sturgeon (*Acipenser oxyrhynchus*). In general, adult shortnose sturgeon (SNS) and adult Atlantic sturgeon (ATS) are present in coastal waters. Sturgeon species have not previously been reported in the vicinity of the action area and are unlikely to travel the 11 miles upstream due to their preference for coastal waters.

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 Cocheco 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, two listed species, the northern long-eared bat (*Myotis septentrionalis*), and the Small Whorled Pogonia (*Isotria medeoloides*), were identified as potentially occurring in the action area of the Facility's discharge.

According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area on the Cocheco River near Gonic, New Hampshire overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Rochester Wastewater Treatment Facility NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated December 9, 2021 that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO).[17] The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Rochester WWTF NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

The Small Whorled Pogonia is a plant species and member of the orchid family. It has a historical range down the Atlantic Coast ranging from Maine to North Carolina, with additional habitat in the mountain regions of North Carolina, South Carolina, and Georgia. The Small Whorled Pogonia is classified as threatened throughout its range. While rare throughout the large range the pogonia is found in older hardwood stands of beech, birch, maple, oak, and hickory trees. The permitted facility has an outfall directly discharging into the Cocheco River and does not directly interact with the shoreline in or around the Facility. Subsequently, the permitted Facility's action does not overlap with the small whorled pogonia or its habitat. No ESA consultation with USFWS for this federal action is necessary regarding this species.

[17] USFWS Event Code: 05E1NE00-2021-E-14173, September 2, 2021.

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 threated 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 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". *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Rochester Wastewater Treatment Facility, which discharges though Outfall 001, to the Cocheco River, Assessment Unit NHRIV600030607-15, in Gonic, NH. The Cocheco River is covered by EFH designation for riverine systems at Latitude 43º 15' 51" N and Longitude 70º 58' 8" W, as determine by the NOAA EFH Mapper.[18] EPA's review of available EFH information indicated that this water body is not designated EFH for any species. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

[18] NOAA EFH Mapper available at https://www.habitat.noaa.gov/apps/efhmapper/

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

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:

Robin Johnson
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1045
Email: johnson.robin@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 at EPA's Boston office and on EPA's website.

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

8.0 Administrative Record

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

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Robin Johnson, EPA

Region 1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912 or via email to johnson.robin@epa.gov.

_____
Date

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

Figure 2. Location of the Rochester WWTF

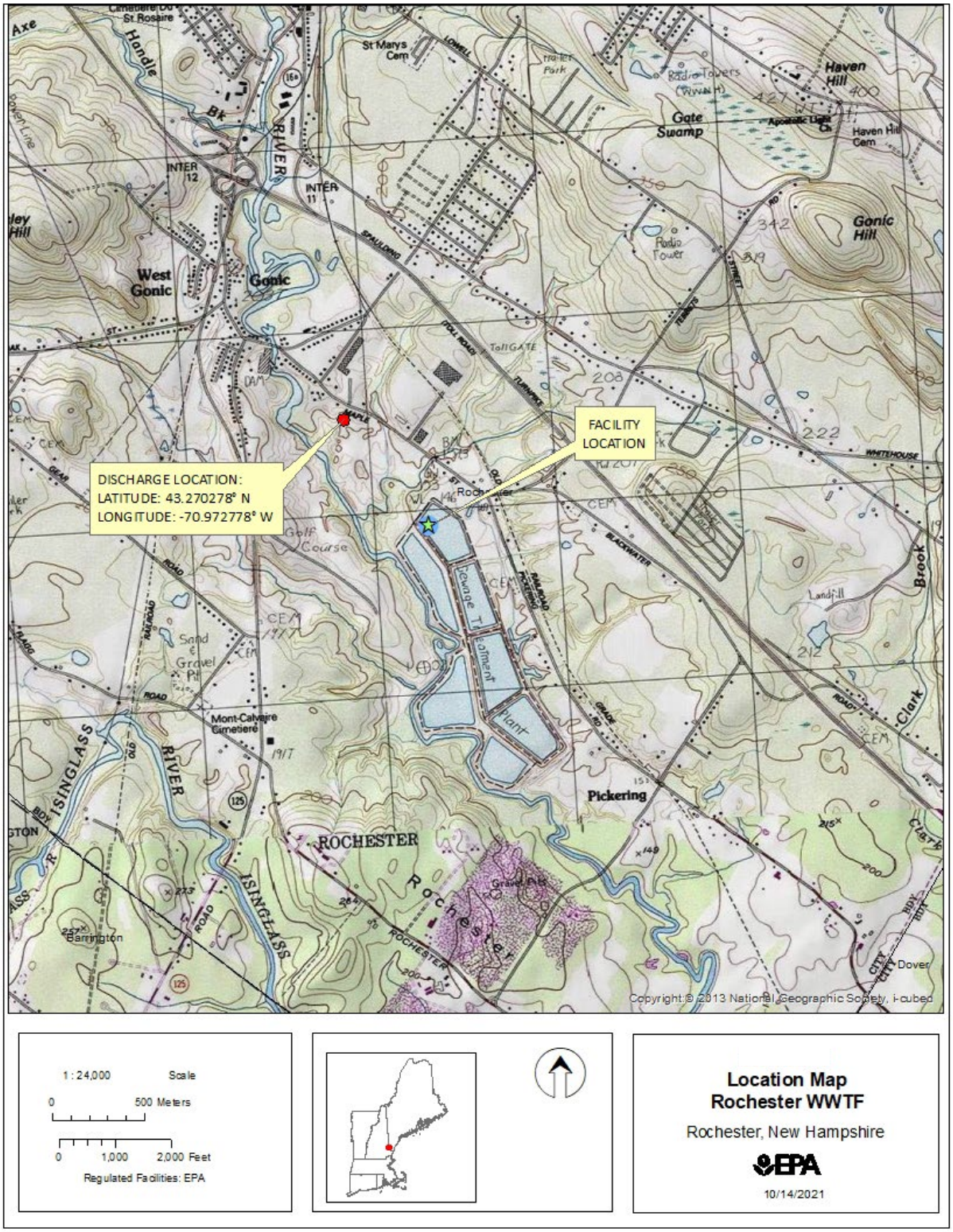
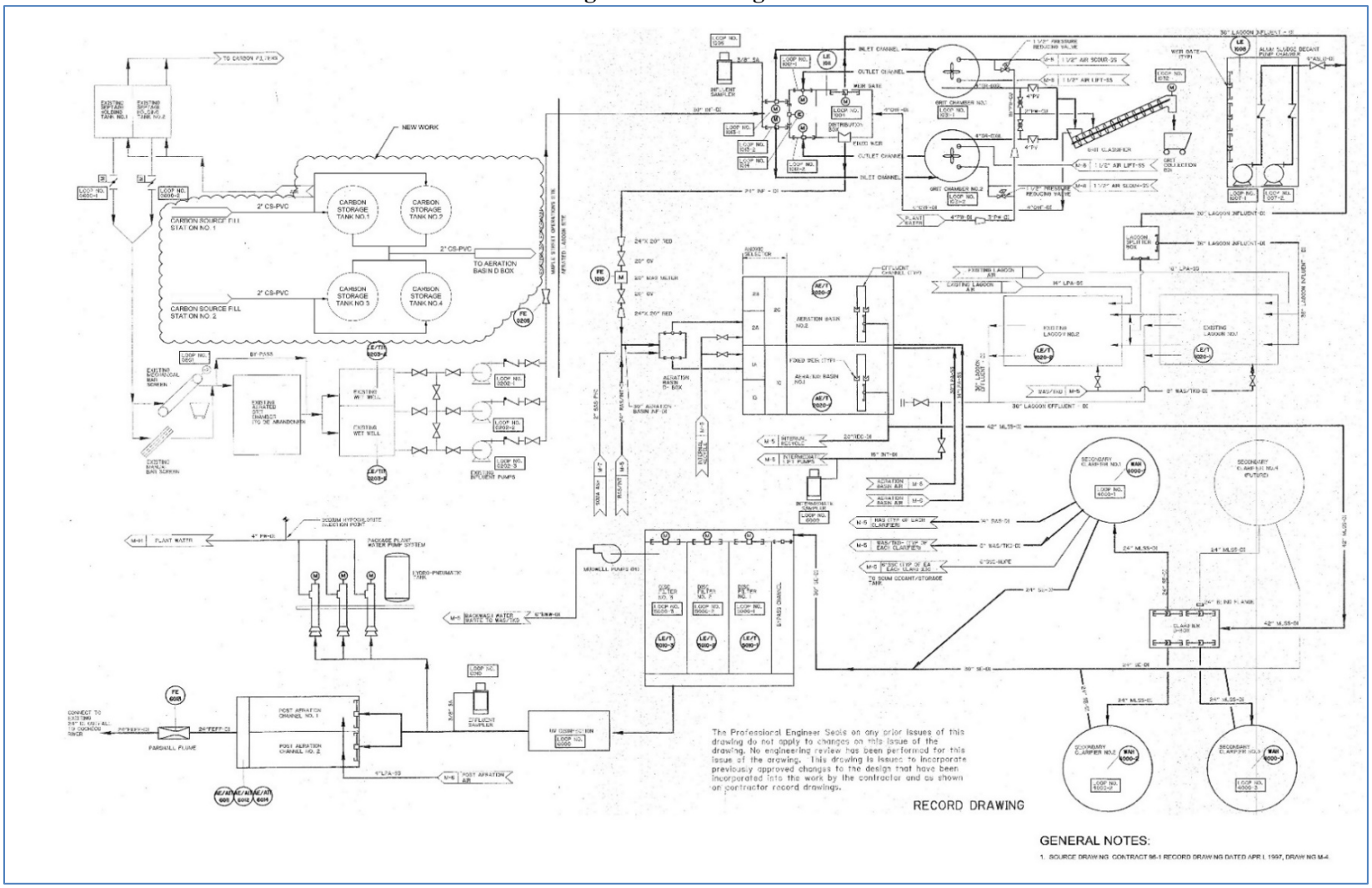


Figure 3. Flow diagram



Outfall 001

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	12-month Rolling Average	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	MGD	MGD	MGD	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	N/A	6	6	9	13	21
Minimum	1.85	2.28	2.90	0	0	2.6	0	0
Maximum	5.36	8.46	4.62	5.7	7.9	9.6	5.5	7.5
Median	3.04	3.77	4.22	2.6	5.1	5.9	2.6	3.2
No. of Violations	N/A	N/A	N/A	0	6	1	0	0
5/31/2016	3.073	3.705	3.060				2.7	3.5
6/30/2016	2.443	3.261	3.043	2.7	4	5.4		
7/31/2016	2.482	3.113	3.030	4.7	7.4	8.1		
8/31/2016	2.171	2.792	3.021	4.3	6.7	8.1		
9/30/2016	2.148	3.914	3.008	4.8	7.9	9.6		
10/31/2016	2.352	3.717	2.994	2.6	5.5	5.3		
11/30/2016	3.011	3.683	3.032				0	3.3
12/31/2016	2.921	4.021	3.031				2.4	3.1
1/31/2017	3.334	4.176	2.999				2.7	3.8
2/28/2017	3.253	4.482	2.931				2.7	2.9
3/31/2017	4.002	5.325	2.901				3.3	4
4/30/2017	5.358	8.455	4.220				3.1	3.5
5/31/2017	4.634	5.676	4.385				0	0
6/30/2017	3.464	4.479	4.486	0	3.4	4.6		
7/31/2017	2.372	3.146	4.489	3.6	6.9	8.6		
8/31/2017	2.052	2.675	4.479	0	2.6	4.7		
9/30/2017	1.991	2.592	4.369	0	0	2.6		
10/31/2017	2.015	3.555	4.355	0	3.7	4.2		
11/30/2017	2.597	3.29	4.323				2.2	3.2
12/31/2017	2.34	2.885	4.228				2.8	3.3
1/31/2018	2.715	4.18	4.228				2.2	2.9
2/28/2018	3.674	4.635	4.241				2.6	2.9
3/31/2018	3.816	4.602	4.181				4	5.3
4/30/2018	4.197	6.579	4.025				2.9	3.2
5/31/2018	3.257	4.481	3.925				4.1	6.2
6/30/2018	2.568	3.082	3.809	2.6	5.8	6.8		
7/31/2018	2.397	3.151	3.809	4.5	5.9	6.4		
8/31/2018	3.1	3.814	3.904	3.2	5.4	6.3		
9/30/2018	2.822	3.548	3.984	5.7	6.6	8.1		
10/31/2018	3.142	3.64	3.991	2.6	4.1	5.4		

Outfall 001

Parameter	Flow	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Monthly Ave	Daily Max	12-month Rolling Average	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	MGD	MGD	MGD	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	N/A	6	6	9	13	21
11/30/2018	5.256	6.814	4.284				3.4	5.5
12/31/2018	4.442	6.713	4.603				5.5	7.5
1/31/2019	3.397	4.378	4.620				4	7.4
2/28/2019	2.985	3.848	4.554				3	3.8
3/31/2019	3.304	4.256	4.525				2.7	3.1
4/30/2019	4.307	6.283	4.501				2.2	2.7
5/31/2019	3.802	4.958	4.540				2.1	2.2
6/30/2019	2.939	3.461	4.572	2.2	3.1	2.7		
7/31/2019	2.793	3.514	4.602	2	3.1	4.4		
8/31/2019	2.776	3.788	4.600	2.2	2.3	3.8		
9/30/2019	2.526	2.995	4.554	2.1	5.1	6.2		
10/31/2019	2.671	3.736	4.562	2	5.4	5.9		
11/30/2019	3.174	3.69	4.302				0	0
12/31/2019	3.798	5.57	4.206				0	0
1/31/2020	3.859	4.902	4.250				0	0
2/29/2020	3.51	5.196	4.362				0	0
3/31/2020	3.892	4.514	4.384				2.1	2.6
4/30/2020	4.555	6.05	4.365				0	2.8
5/31/2020	3.656	4.952	4.364				0	4.2
6/30/2020	2.559	3.093	4.333	3.1	4.9	6.7		
7/31/2020	2.276	2.646	4.261	3.5	6.1	6.5		
8/31/2020	2.286	2.626	4.164	4	5.6	6.8		
9/30/2020	2.023	2.332	4.109	0	2	3.5		
10/31/2020	1.847	2.275	3.987	3.3	4.8	5.3		
11/30/2020	2.207	2.908	3.922				2.7	2.8
12/31/2020	3.54	5.038	3.878				2.5	3.6
1/31/2021	3.293	3.799	3.786				0	3.5
2/28/2021	2.795	3.081	3.610				2.5	2.6
3/31/2021	3.108	3.754	3.546				4	5.2
4/30/2021	3.125	3.71	3.351				2.9	5.5

Outfall 001

Parameter	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min
Units	mg/L	lb/d	lb/d	lb/d	lb/d	lb/d	lb/d	%
Effluent Limit	**23**	**252**	**252**	**378**	**546**	**882**	**965**	**85**
Minimum	**2.4**	**10**	**27**	**44**	**11**	**22**	**65**	**93**
Maximum	**8.4**	**141**	**168**	**201**	**194**	**261**	**334**	**100**
Median	**3.6**	**55**	**110**	**119**	**69**	**94**	**109**	**98**
No. of Violations	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**60**
5/31/2016	3.6				75	99	101	98
6/30/2016		53	77	98				98
7/31/2016		100	168	201				97
8/31/2016		81	127	155				97
9/30/2016		87	141	164				97
10/31/2016		48	97	92				98
11/30/2016	3.6				47	94	109	99
12/31/2016	3.6				58	80	94	98
1/31/2017	5.5				78	100	145	97
2/28/2017	3.2				71	77	117	98
3/31/2017	4.4				112	133	143	97
4/30/2017	3.9				147	173	204	96
5/31/2017	2.8				34	65	103	99
6/30/2017		46	97	118				98
7/31/2017		73	135	170				97
8/31/2017		33	51	90				99
9/30/2017		10	27	44				100
10/31/2017		32	60	69				99
11/30/2017	3.5				48	74	82	98
12/31/2017	3.7				54	69	77	98
1/31/2018	3.4				50	65	70	98
2/28/2018	3.9				88	106	151	97
3/31/2018	5.6				130	185	199	95
4/30/2018	3.6				107	153	198	96
5/31/2018	6.5				115	195	201	96
6/30/2018		56	127	155				98
7/31/2018		87	118	122				96
8/31/2018		80	133	155				96
9/30/2018		141	154	187				93
10/31/2018		70	110	149				96

Outfall 001

Parameter	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5	CBOD5
	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min
Units	mg/L	lb/d	lb/d	lb/d	lb/d	lb/d	lb/d	%
Effluent Limit	**23**	**252**	**252**	**378**	**546**	**882**	**965**	**85**
11/30/2018	8.4				156	216	334	94
12/31/2018	8.2				194	225	237	93
1/31/2019	8.4				127	261	269	95
2/28/2019	4				77	88	96	97
3/31/2019	3.3				72	77	87	98
4/30/2019	3.3				77	97	114	97
5/31/2019	3.3				65	90	95	97
6/30/2019		55	88	72				98
7/31/2019		43	66	95				98
8/31/2019		51	59	87				98
9/30/2019		49	123	155				98
10/31/2019		41	107	115				98
11/30/2019	2.4				11	22	65	100
12/31/2019	2.4				24	37	90	99
1/31/2020	2.4				22	45	72	99
2/29/2020	2.4				20	52	104	99
3/31/2020	2.8				67	83	85	97
4/30/2020	3.4				56	102	122	98
5/31/2020	4.5				49	105	112	98
6/30/2020		67	119	142				97
7/31/2020		66	113	119				98
8/31/2020		80	113	136				97
9/30/2020		27	38	68				99
10/31/2020		48	71	79				98
11/30/2020	3.6				50	52	65	98
12/31/2020	4.2				69	92	109	97
1/31/2021	3.8				43	101	109	98
2/28/2021	3.3				58	63	78	98
3/31/2021	6.2				101	129	156	95
4/30/2021	6.1				82	153	168	97

Outfall 001

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	lb/d	lb/d	lb/d	mg/L	mg/L
Effluent Limit	**6**	**6**	**9**	**252**	**252**	**378**	**13**	**21**
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**6**	**8.6**	**11.2**	**115**	**188**	**181**	**9.3**	**12.5**
Median	**0**	**3.9**	**4.4**	**37**	**67**	**83**	**3.8**	**5.4**
No. of Violations	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**
5/31/2016							5.4	9.3
6/30/2016	3.9	5.6	6	72	101	109		
7/31/2016	6	8.6	11.2	115	147	181		
8/31/2016	3.5	3.9	6.8	66	81	118		
9/30/2016	3.4	4.5	5.8	57	78	94		
10/31/2016	0	5	5	23	85	88		
11/30/2016							3.3	4.3
12/31/2016							3.7	4.3
1/31/2017							5.2	5.9
2/28/2017							5.6	6.9
3/31/2017							6.8	8.3
4/30/2017							7	8.5
5/31/2017							3.7	4.3
6/30/2017	0	5.3	3.4	11	188	71		
7/31/2017	0	3	3.8	37	59	75		
8/31/2017	3.2	3.6	4.4	55	64	80		
9/30/2017	2.8	4	5.4	46	68	92		
10/31/2017	4.3	4.5	6.4	75	71	167		
11/30/2017							7.8	10.1
12/31/2017							6.6	8.5
1/31/2018							5.9	7.1
2/28/2018							6.6	6.3
3/31/2018							8.2	10
4/30/2018							5.4	5.7
5/31/2018							6.2	7.3
6/30/2018	3.2	5.9	4.8	65	120	109		
7/31/2018	2.3	3.9	4.6	44	67	79		
8/31/2018	0	3.9	5	46	104	116		
9/30/2018	3.6	5.3	6.8	83	103	126		
10/31/2018	2.9	3.9	5.8	77	104	162		

Outfall 001

Parameter	TSS	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave	Weekly Ave
Units	mg/L	mg/L	mg/L	lb/d	lb/d	lb/d	mg/L	mg/L
Effluent Limit	**6**	**6**	**9**	**252**	**252**	**378**	**13**	**21**
11/30/2018							5.4	6.5
12/31/2018							9.3	12.5
1/31/2019							5.9	11.1
2/28/2019							3.8	5.6
3/31/2019							2	2.9
4/30/2019							2	3.4
5/31/2019							2.2	3.9
6/30/2019	0	2	3.4	16	51	83		
7/31/2019	0	0	2.2	3	16	48		
8/31/2019	0	0	2.6	21	36	58		
9/30/2019	0	2.8	3.4	30	63	71		
10/31/2019	0	3	3.4	37	54	65		
11/30/2019							0	2.7
12/31/2019							0	0
1/31/2020							0	0
2/29/2020							0	0
3/31/2020							0	2.5
4/30/2020							0	0
5/31/2020							2.5	5.3
6/30/2020	0	2.1	3.8	20	50	93		
7/31/2020	0	0	0	0	0	0		
8/31/2020	0	0	2.2	3	13.7	41		
9/30/2020	0	0	2.2	5.2	14	42		
10/31/2020	0	0	2.4	8	22	36		
11/30/2020							2.1	4.1
12/31/2020							3.1	5.1
1/31/2021							2.3	4
2/28/2021							4.4	5.5
3/31/2021							4.1	5
4/30/2021							3.1	5.4

Outfall 001

Parameter	TSS	TSS	TSS	TSS	TSS	pH	pH	E. coli
	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean
Units	mg/L	lb/d	lb/d	lb/d	%	SU	SU	#/100mL
Effluent Limit	**23**	**546**	**882**	**965**	**85**	**6.5**	**8**	**126**
Minimum	**2**	**4.7**	**26**	**61**	**92**	**6.7**	**7.3**	**1.1**
Maximum	**14.2**	**329**	**374**	**636**	**100**	**7.4**	**7.9**	**15.8**
Median	**6**	**103**	**153**	**161**	**98**	**7**	**7.5**	**3.05**
No. of Violations	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5/31/2016	10.8	143	265	291	98	7.1	7.5	5
6/30/2016					98	7.3	7.9	4.6
7/31/2016					97	7.3	7.7	5.9
8/31/2016					99	7.3	7.8	9
9/30/2016					99	7	7.7	5.3
10/31/2016					99	7.1	7.5	2.8
11/30/2016	4.8	86	119	145	98	6.9	7.4	3.8
12/31/2016	5	87	97	112	98	6.9	7.3	3
1/31/2017	6.2	139	156	169	97	6.8	7.5	3.6
2/28/2017	7.8	147	176	277	97	6.7	7.4	3.6
3/31/2017	9.6	211	238	267	96	6.9	7.3	3.9
4/30/2017	9.8	306	327	356	95	7	7.5	5.4
5/31/2017	5.4	142	158	214	97	7.1	7.5	4.5
6/30/2017					100	7.1	7.9	3.1
7/31/2017					99	7.2	7.9	2.2
8/31/2017					99	7.4	7.9	2.3
9/30/2017					99	7.3	7.9	9.2
10/31/2017					98	7.1	7.9	5.6
11/30/2017	14.2	158	225	297	96	6.9	7.4	3
12/31/2017	9	122	163	149	97	7	7.5	2
1/31/2018	7.4	130	166	183	97	6.8	7.4	6.5
2/28/2018	9.2	222	211	348	97	6.9	7.3	12.5
3/31/2018	11.2	260	360	398	95	6.9	7.3	5.9
4/30/2018	6.6	187	234	274	96	6.9	7.4	1.9
5/31/2018	10	171	230	257	97	7	7.5	2.1
6/30/2018					99	7.3	7.8	2.3
7/31/2018					99	7.2	7.8	2.4
8/31/2018					99	7.2	7.7	3.3
9/30/2018					98	7.2	7.9	13.3
10/31/2018					98	7.1	7.7	3.7

Outfall 001

Parameter	TSS	TSS	TSS	TSS	TSS	pH	pH	E. coli
	Daily Max	Monthly Ave	Weekly Ave	Daily Max	Monthly Ave Min	Minimum	Maximum	Monthly Geometric Mean
Units	mg/L	lb/d	lb/d	lb/d	%	SU	SU	#/100mL
Effluent Limit	**23**	**546**	**882**	**965**	**85**	**6.5**	**8**	**126**
11/30/2018	11.2	259	341	636	95	6.9	7.5	6.1
12/31/2018	13.8	329	374	399	92	7	7.4	10.3
1/31/2019	12	181	367	361	96	7	7.4	5.2
2/28/2019	5.4	98	153	161	98	7.1	7.5	7.4
3/31/2019	3.2	49	70	79	99	7	7.5	1.6
4/30/2019	4.2	71	117	152	98	7	7.4	1.6
5/31/2019	4.6	76	144	174	99	7	7.5	2.3
6/30/2019					100	7.1	7.7	2.3
7/31/2019					100	7.1	7.8	2.7
8/31/2019					100	7.1	7.7	2.6
9/30/2019					99	7.2	7.7	2.7
10/31/2019					99	7.2	7.6	1.7
11/30/2019	3.2	24	70	85	99	6.9	7.5	1.9
12/31/2019	2.6	15	43	78	100	6.9	7.4	2.2
1/31/2020	2	4.7	26	61	100	6.9	7.3	1.1
2/29/2020	2.8	37	53	84	99	6.9	7.3	1.4
3/31/2020	3.4	34	76	110	99	7	7.4	1.1
4/30/2020	3.8	52	51	138	99	7	7.3	1.3
5/31/2020	6	68	130	150	98	6.8	7.6	2.5
6/30/2020					100	7	7.9	1.1
7/31/2020					100	7.2	7.9	4.4
8/31/2020					100	7.2	7.9	1.7
9/30/2020					100	7.1	7.9	2.5
10/31/2020					100	7.1	7.6	1.7
11/30/2020	6.4	42	73	155	99	7	7.5	3.6
12/31/2020	5.8	89	132	144	98	7.1	7.7	15.8
1/31/2021	4.4	64	118	130	98	6.9	7.5	2.2
2/28/2021	5.6	103	125	138	98	6.9	7.8	7.6
3/31/2021	6.6	109	124	207	97	6.8	7.9	5.8
4/30/2021	5.8	80	164	161	98	6.8	7.4	4.1

Outfall 001

Parameter	E. coli	DO	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia
	Daily Max	Minimum	Monthly Ave	Daily Max	Weekly Ave	Monthly Ave	Daily Max	Weekly Ave
Units	#/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	lb/d
Effluent Limit	406	7	3.61	4.31	Report	7.65	26.3	Report
Minimum	3	7.07	0	0	0	0	0	2.6
Maximum	648.8	8.85	0.51	3.2	5.2	3.41	5.4	9.6
Median	23.1	7.69	0	0.1	0.095	0.07	0.34	5.9
No. of Violations	1	0	0	0	N/A	0	0	N/A
5/31/2016	41.4	7.48			0.13	0.11	0.19	3.8
6/30/2016	648.8	7.45	0	0.09	0.09			1.8
7/31/2016	54.6	7.42	0	0.11	0.1			2
8/31/2016	20.1	7.39	0	0.16	0.09			1.6
9/30/2016	16.9	7.15	0	0.27	0.12			2
10/31/2016	68.2	7.61	0	0.09	0			0.5
11/30/2016	29.5	7.58			0	0	0.1	1.3
12/31/2016	82	8.13			0.17	0	0.4	3.5
1/31/2017	33.2	7.89			1.42	0.42	2.5	37.9
2/28/2017	9.8	8.85			0	0	0.1	0.7
3/31/2017	12	8.84			0.09	0	0.17	2.6
4/30/2017	24.9	8.42			0	0	0	0
5/31/2017	10.9	7.52			0	0	0.08	1.1
6/30/2017	34.5	7.96	0	0.15	0			0.8
7/31/2017	9.7	7.07	0	0.08	0.11			2.5
8/31/2017	13	7.7	0	0.1	0			0.6
9/30/2017	51.2	7.7	0.51	3.2	1.8			30.5
10/31/2017	62	7.77	0	0.07	0			0.33
11/30/2017	9.6	8.09			0	0	0.08	0.5
12/31/2017	9.6	8.25			0.47	0.14	1.3	9.2
1/31/2018	66.3	8.16			0.15	0.08	0.24	3.4
2/28/2018	29.2	8.56			0.29	0.15	0.5	7.8
3/31/2018	31.3	8.3			0.6	0.42	1	20
4/30/2018	6.3	7.21			1	0.49	1.6	36
5/31/2018	36.4	7.67			1.02	0.59	2.1	37.5
6/30/2018	7.5	7.54	0	0.44	0.19			3.8
7/31/2018	19.3	7.64	0	0.18	0			1.1
8/31/2018	11.9	7.2	0	0.098	0			0.9
9/30/2018	365.4	7.65	0	0	0			0.6
10/31/2018	14.8	7.46	0	0.072	0			0.6

Outfall 001

Parameter	E. coli	DO	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia	Ammonia
	Daily Max	Minimum	Monthly Ave	Daily Max	Weekly Ave	Monthly Ave	Daily Max	Weekly Ave
Units	#/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	lb/d
Effluent Limit	406	7	3.61	4.31	Report	7.65	26.3	Report
11/30/2018	33.6	7.68			2.7	1.82	3.4	112
12/31/2018	90.9	7.59			4.3	3.41	4.5	157
1/31/2019	137.6	7.66			5.2	1.71	5.4	169
2/28/2019	32.7	7.95			0.45	0.15	0.84	13.7
3/31/2019	4.1	8.12			0.19	0.08	0.29	5.9
4/30/2019	30.5	7.71			0	0	0.079	0.97
5/31/2019	23.1	7.6			0.13	0.07	0.4	4.3
6/30/2019	14.5	7.74	0	0.12	0			0.1
7/31/2019	13.1	7.73	0	0.091	0			0.53
8/31/2019	49.6	7.47	0	0.27	0.09			2
9/30/2019	13.2	7.7	0	0.093	0			1.1
10/31/2019	4.1	7.48	0	0.099	0.08			1.6
11/30/2019	7.5	8.03			0	0	0.077	0.7
12/31/2019	16	7.71			0.13	0	0.3	3.6
1/31/2020	3.1	7.75			0.14	0	0.18	4.1
2/29/2020	4.1	7.48			0.46	0.22	0.7	12.1
3/31/2020	3.1	7.7			0.09	0.11	0.52	3.2
4/30/2020	5.2	7.54			0.17	0	0.12	6.5
5/31/2020	23.1	7.23			0	0	0.097	2.3
6/30/2020	3	7.68	0	0	0			0
7/31/2020	129.6	7.66	0	0.11	0			0.8
8/31/2020	6.3	7.48	0	0.091	0			0.6
9/30/2020	30.5	7.65	0	0.11	0			0.5
10/31/2020	9.7	7.65	0	0.15	0.1			1.5
11/30/2020	12.1	7.78			0.1	0	0.12	1.7
12/31/2020	111.2	8.12			0	0	0.077	0.7
1/31/2021	45	8.47			0.25	0	0.74	6.5
2/28/2021	120.1	8			0.23	0.11	0.41	5.4
3/31/2021	290.9	7.79			0.2	0.07	0.45	4.9
4/30/2021	29.8	7.77			0.21	0	0.34	6

Outfall 001

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	Copper, dissolved (as Cu)	Lead, dissolved (as Pb)	Zinc, dissolved (as Zn)	Copper, dissolved (as Cu)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max
Units	lb/d	lb/d	lb/d	lb/d	mg/L	mg/L	mg/L	mg/L
Effluent Limit	152	181	321	1104	Report	Report	Report	Report
Minimum	0	0	0	0	0	0	0.02	0
Maximum	8.5	54.4	119	180	0.03	0	0.101	0.03
Median	0.4	2	1.8	8.9	0.0021	0	0.0385	0.0021
No. of Violations	0	0	0	0	N/A	N/A	N/A	N/A
5/31/2016			2.7	5.7	0.004	0	0.023	0.004
6/30/2016	0.9	1.9			0.002	0	0.028	0.002
7/31/2016	1.1	2.3			0.03	0	0.02	0.03
8/31/2016	0.9	2.8			0.0021	0	0.028	0.0021
9/30/2016	1	4.4			0.008	0	0.101	0.008
10/31/2016	0.2	1.5			0.0062	0	0.057	0.0062
11/30/2016			0.8	3.1	0.0041	0	0.051	0.0041
12/31/2016			1.4	8.4	0.0025	0	0.061	0.0025
1/31/2017			11.3	66.8	0.0047	0	0.068	0.0047
2/28/2017			0.6	3.6	0.004	0	0.07	0.004
3/31/2017			0.7	4.6	0.0042	0	0.066	0.0042
4/30/2017			0	0	0.0019	0	0.053	0.0019
5/31/2017			0.2	3.2	0.0053	0	0.044	0.0053
6/30/2017	0.8	3.2			0.0054	0	0.046	0.0054
7/31/2017	0.3	1.8			0.004	0	0.035	0.004
8/31/2017	0.2	1.7			0.003	0	0.046	0.003
9/30/2017	8.5	54.4			0.002	0	0.058	0.002
10/31/2017	0.1	1			0.003	0	0.055	0.003
11/30/2017			0.1	1.5	0.002	0	0.043	0.002
12/31/2017			2.7	25.6	0.003	0	0.051	0.003
1/31/2018			2	5	0.003	0	0.055	0.003
2/28/2018			4.7	13.8	0.002	0	0.042	0.002
3/31/2018			13.3	35	0.002	0	0.034	0.002
4/30/2018			18	56.5	0.0015	0	0.032	0.0015
5/31/2018			18.3	76.8	0.0017	0	0.033	0.0017
6/30/2018	1	8.7			0.0016	0	0.027	0.0016
7/31/2018	0.4	3.2			0.0013	0	0.023	0.0013
8/31/2018	0.4	2.6			0.0013	0	0.02	0.0013
9/30/2018	0	0			0.0037	0	0.036	0.0037
10/31/2018	0.1	1.7			0.0015	0	0.029	0.0015

Outfall 001

Parameter	Ammonia	Ammonia	Ammonia	Ammonia	Copper, dissolved (as Cu)	Lead, dissolved (as Pb)	Zinc, dissolved (as Zn)	Copper, dissolved (as Cu)
	Monthly Ave	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Monthly Ave	Daily Max
Units	lb/d	lb/d	lb/d	lb/d	mg/L	mg/L	mg/L	mg/L
Effluent Limit	152	181	321	1104	Report	Report	Report	Report
11/30/2018			88.1	171	0.0042	0	0.039	0.0042
12/31/2018			119	145	0.0013	0	0.026	0.0013
1/31/2019			56.2	180	0.0018	0	0.039	0.0018
2/28/2019			4.3	27	0.0012	0	0.041	0.0012
3/31/2019			2.6	8.9	0.0023	0	0.066	0.0023
4/30/2019			0.2	2.9	0.0021	0	0.042	0.0021
5/31/2019			2.2	12.9	0.0022	0	0.03	0.0022
6/30/2019	0.2	2.9			0.0016	0	0.029	0.0016
7/31/2019	0.5	2			0.022	0	0.036	0.022
8/31/2019	0.6	6			0.0017	0	0.038	0.0017
9/30/2019	0.3	1.7			0.0032	0	0.03	0.0032
10/31/2019	0.4	2			0	0	0.05	0
11/30/2019			0.3	2.1	0.0028	0	0.05	0.0028
12/31/2019			1.7	7.7	0.0027	0	0.034	0.0027
1/31/2020			0.9	5.5	0.0014	0	0.038	0.0014
2/29/2020			5.9	18.3	0.0015	0	0.035	0.0015
3/31/2020			3.6	19.6	0.0013	0	0.035	0.0013
4/30/2020			0.6	4.2	0.0012	0	0.023	0.0012
5/31/2020			0.6	3.6	0.0018	0	0.022	0.0018
6/30/2020	0	0			0.0015	0	0.044	0.0015
7/31/2020	0.3	2.4			0.0034	0	0.049	0.0034
8/31/2020	0.2	1.8			0.0032	0	0.058	0.0032
9/30/2020	0.4	1.6			0.0041	0	0.032	0.0041
10/31/2020	0.7	2.2			0.002	0	0.03	0.002
11/30/2020			0.5	2.2	0.0053	0	0.057	0.0053
12/31/2020			0.1	2.2	0.0017	0	0.027	0.0017
1/31/2021			1.6	19.6	0.0024	0	0.056	0.0024
2/28/2021			2.7	10	0.0013	0	0.044	0.0013
3/31/2021			1.8	10.2	0.0021	0	0.034	0.0021
4/30/2021			1.7	9.9	0.002	0	0.031	0.002

Outfall 001

Parameter	Lead, dissolved (as Pb)	Zinc, dissolved (as Zn)
	Daily Max	Daily Max
Units	mg/L	mg/L
Effluent Limit	Report	Report
Minimum	**0**	**0.02**
Maximum	**0**	**0.101**
Median	**0**	**0.0385**
No. of Violations	N/A	N/A
5/31/2016	0	0.023
6/30/2016	0	0.028
7/31/2016	0	0.02
8/31/2016	0	0.028
9/30/2016	0	0.101
10/31/2016	0	0.057
11/30/2016	0	0.051
12/31/2016	0	0.061
1/31/2017	0	0.068
2/28/2017	0	0.07
3/31/2017	0	0.066
4/30/2017	0	0.053
5/31/2017	0	0.044
6/30/2017	0	0.046
7/31/2017	0	0.035
8/31/2017	0	0.046
9/30/2017	0	0.058
10/31/2017	0	0.055
11/30/2017	0	0.043
12/31/2017	0	0.051
1/31/2018	0	0.055
2/28/2018	0	0.042
3/31/2018	0	0.034
4/30/2018	0	0.032
5/31/2018	0	0.033
6/30/2018	0	0.027
7/31/2018	0	0.023
8/31/2018	0	0.02
9/30/2018	0	0.036
10/31/2018	0	0.029

Outfall 001

Parameter	Lead, dissolved (as Pb)	Zinc, dissolved (as Zn)
	Daily Max	Daily Max
Units	mg/L	mg/L
Effluent Limit	Report	Report
11/30/2018	0	0.039
12/31/2018	0	0.026
1/31/2019	0	0.039
2/28/2019	0	0.041
3/31/2019	0	0.066
4/30/2019	0	0.042
5/31/2019	0	0.03
6/30/2019	0	0.029
7/31/2019	0	0.036
8/31/2019	0	0.038
9/30/2019	0	0.03
10/31/2019	0	0.05
11/30/2019	0	0.05
12/31/2019	0	0.034
1/31/2020	0	0.038
2/29/2020	0	0.035
3/31/2020	0	0.035
4/30/2020	0	0.023
5/31/2020	0	0.022
6/30/2020	0	0.044
7/31/2020	0	0.049
8/31/2020	0	0.058
9/30/2020	0	0.032
10/31/2020	0	0.03
11/30/2020	0	0.057
12/31/2020	0	0.027
1/31/2021	0	0.056
2/28/2021	0	0.044
3/31/2021	0	0.034
4/30/2021	0	0.031

Outfall 001

Parameter	Total Phosphorus
	Monthly Average
Units	mg/L
Effluent Limit	N/A
Minimum	**0.17**
Maximum	**6.63**
Median	**1.42**
No. of Violations	N/A
5/31/2016	0.52
6/30/2016	0.20
7/31/2016	0.28
8/31/2016	0.21
9/30/2016	5.80
10/31/2016	2.48
4/30/2017	1.03
5/31/2017	0.83
6/30/2017	0.30
7/31/2017	0.20
8/31/2017	0.20
9/30/2017	0.17
10/31/2017	0.22
4/30/2018	1.09
5/31/2018	1.43
6/30/2018	1.43
7/31/2018	0.38
8/31/2018	1.30
9/30/2018	2.45
10/31/2018	0.25
4/30/2019	1.42
5/31/2019	2.15
6/30/2019	1.70
7/31/2019	2.34
8/31/2019	3.73
9/30/2019	3.13
10/31/2019	1.75
4/30/2020	0.53
5/31/2020	1.93
6/30/2020	1.85
7/31/2020	2.56
8/31/2020	6.63
9/30/2020	2.96

Outfall 001

Parameter	Total Phosphorus
	Monthly Average
Units	mg/L
Effluent Limit	N/A
10/31/2020	3.61
4/30/2021	0.54

WET Effluent

Parameter	C-NOEC Chronic Ceriodaphnia	LC50 Statre 48Hr Acute Ceriodaphnia	LC50 Statre 48Hr Acute Pimephales	Noel Statre 7Day Chronic Pimephales	Hardness	Ammonia	Aluminum, total	Cadmium, total
	Daily Min	Daily Min	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	%	%	mg/L	mg/L	mg/L	mg/L
Effluent Limit	69	100	100	69				
Minimum	6.25	100	100	50	40	Non-Dete	Non-Detect	Non-Detect
Maximum	100	100	100	100	57	0.11	0.21	Non-Detect
No. of Violations	3	0	0	1	N/A	N/A	N/A	N/A
7/31/2016	100	100	100	100	40	<0.1	0.036	<0.0005
10/31/2016	6.25	100	100	100	50	<0.1	0.069	<0.0003
1/31/2017	100	100	100	100	54	<0.1	0.21	<0.0003
4/30/2017	100	100	100	100	56	<0.1	0.026	<0.0003
7/31/2017	12.5	100	100	100	44	<0.05	0.02	<0.0005
10/31/2017	100	100	100	50	53	0.05	0.05	<0.0005
1/31/2018	100	100	100	100	50	0.08	0.03	<0.0005
4/30/2018	100	100	100	100	52	0.08	0.03	<0.0005
7/31/2018	100	100	100	100	51	0.069	<0.05	<0.001
10/31/2018	100	100	100	100	49	0.055	0.03	<0.0005
1/31/2019	100	100	100	69	45	0.058	0.02	<0.0005
4/30/2019	100	100	100	100	57	<0.05	0.02	<0.0005
7/31/2019	100	100	100	100	49	<0.05	<0.01	<0.0005
10/31/2019	12.5	100	100	69	44	0.072	0.013	<0.0005
1/31/2020	100	100	100	100	47	0.053	0.017	<0.0005
4/30/2020	100	100	100	100	55	0.052	0.012	<0.0005
7/31/2020	100	100	100	100	51	0.09	0.015	<0.0005
10/31/2020	100	100	100	100	46	0.098	0.013	<0.0005
1/31/2021	100	100	100	69	54	<0.05	0.023	<0.0005
4/30/2021	100	100	100	100	52	0.11	0.015	<0.0005

WET Effluent

Parameter	Copper, total	Lead, total	Nickel, total	Zinc, total
	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L
Effluent Limit				
Minimum	0.0021	Non-Detect	0.001	0.027
Maximum	0.011	0.0011	0.0054	0.084
No. of Violations	N/A	N/A	N/A	N/A
7/31/2016	0.004	<0.0005	0.002	0.027
10/31/2016	0.0065	<0.0003	0.0042	0.047
1/31/2017	0.011	0.0009	0.0027	0.08
4/30/2017	0.0034	0.0003	0.0022	0.054
7/31/2017	0.004	0.0011	0.003	0.043
10/31/2017	0.007	<0.0005	0.003	0.084
1/31/2018	0.004	<0.0005	0.001	0.062
4/30/2018	0.0037	<0.0005	0.0054	0.039
7/31/2018	0.0021	<0.001	0.0017	0.038
10/31/2018	0.0055	<0.0005	0.0024	0.03
1/31/2019	0.0029	<0.0005	0.0026	0.048
4/30/2019	0.0022	<0.0005	0.0019	0.038
7/31/2019	0.003	<0.0005	0.0019	0.032
10/31/2019	0.0026	<0.0005	0.0015	0.05
1/31/2020	0.0023	<0.0005	0.0017	0.05
4/30/2020	0.0021	<0.0005	0.0012	0.028
7/31/2020	0.0047	<0.0005	0.0035	0.055
10/31/2020	0.0038	<0.0005	0.0028	0.031
1/31/2021	0.0031	<0.0005	0.0022	0.052
4/30/2021	0.0025	<0.0005	0.0016	0.033

WET Ambient: Cocheco River upstream of Rochester WWTF

Parameter	Hardness	Summer Ammonia	Winter Ammonia	Aluminum, total	Cadmium, total	Copper, total	Lead, total
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum	11	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect	Non-Detect
Maximum	51	0.066	0.09	0.32	Non-Detect	0.0009	0.0009
7/31/2016	40	<0.1		0.044	<0.0005	0.0008	0.0007
10/31/2016	51	<0.1		0.096	<0.0001	0.0008	0.0004
1/31/2017	20		<0.1	0.16	<0.0001	0.0008	0.0003
4/30/2017	11		<0.1	0.2	<0.0001	0.0009	0.0005
7/31/2017	30	<0.05		0.07	<0.0005	<0.001	0.0009
10/31/2017	37	<0.05		0.07	<0.0005	<0.001	<0.0005
1/31/2018	17		0.09	0.14	<0.0005	<0.001	<0.0005
4/30/2018	14		<0.05	0.14	<0.0005	<0.001	<0.0005
7/31/2018	41	0.066		<0.05	<0.001	<0.001	<0.001
10/31/2018	18	<0.05		0.12	<0.0005	<0.001	<0.0005
1/31/2019	20		0.064	0.2	<0.0005	<0.001	<0.0005
4/30/2019	12		<0.05	0.32	<0.0005	<0.001	0.0009
7/31/2019	25	0.056		0.12	<0.0005	<0.001	0.0008
10/31/2019	37	<0.05		0.026	<0.0005	<0.001	<0.0005
1/31/2020	12		<0.05	0.28	<0.0005	<0.001	0.00086
4/30/2020	13		<0.05	0.16	<0.0005	<0.001	<0.0005
7/31/2020	32	0.053		0.055	<0.0005	<0.001	0.00064
10/31/2020	42	<0.05		0.023	<0.0005	<0.001	<0.0005
1/31/2021	22		0.051	0.14	<0.0005	<0.001	<0.0005
4/30/2021	20		<0.05	0.12	<0.0005	<0.001	<0.0005

WET Ambient: Cocheco River upstream of Rochester WWTF

Parameter	Nickel, total	Zinc, total
	Daily Max	Daily Max
Units	mg/L	mg/L
Minimum	Non-Detect	Non-Detect
Maximum	0.0019	0.014
7/31/2016	<0.002	0.004
10/31/2016	0.0011	0.0082
1/31/2017	0.0014	0.011
4/30/2017	0.0011	0.014
7/31/2017	<0.001	<0.005
10/31/2017	<0.001	0.006
1/31/2018	0.001	0.009
4/30/2018	0.0017	0.0075
7/31/2018	0.0012	<0.005
10/31/2018	0.0011	<0.005
1/31/2019	0.0019	0.0075
4/30/2019	0.0012	0.0055
7/31/2019	0.0018	<0.005
10/31/2019	<0.001	<0.005
1/31/2020	0.001	0.0065
4/30/2020	<0.001	0.0055
7/31/2020	<0.001	0.0053
10/31/2020	<0.001	0.0037
1/31/2021	0.0017	0.0084
4/30/2021	0.0014	<0.005

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

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

$$C_sQ_s + C_eQ_e = C_dQ_d$$

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:

$$C_d = \frac{C_sQ_s + C_eQ_e}{Q_d}$$

When both the downstream concentration (C_d) and the effluent concentration (C_e) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must

contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration (C_d) and rearranging the mass balance equation to solve for the effluent concentration (C_e).

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

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

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

Pollutant	Q_s	C_s [1]	Q_e	C_e [2]		Q_d	C_d		Criteria * 0.9		Reasonable Potential		Limits	
	cfs	mg/L	cfs	Acute (mg/L)	Chronic (mg/L)	cfs	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_e & C_d > Acute Criteria	C_e & C_d > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)
Ammonia (Warm)	3.47	0.0	7.79	4.3	3.6	11.25	3.0	2.5	13.2	1.4	**Y**	**Y**	**4.3**	**2.0**
Ammonia (Cold)		0.0		26.3	7.7		18.2	5.3	28.7	4.4	**Y**	**Y**	**26.3**	**6.3**
Phosphorus		0.027		N/A	2.72		N/A	1.89	N/A	0.090	N/A	**Y**	N/A	**0.12**
		µg/L		**µg/L**	**µg/L**		**µg/L**	**µg/L**	**µg/L**	**µg/L**			**µg/L**	**µg/L**
Aluminum		120.0		0.0	0.0		37.0	37.0	675	78.3	N	N	N/A	N/A
Cadmium		0.0		0.0	0.0		0.0	0.0	0.7	0.4	N	N	N/A	N/A
Copper		0.0		7.7	7.7		5.3	5.3	42.5	31.9	N	N	N/A	N/A
Lead		0.0		0.9	0.9		0.6	0.6	23.9	0.9	N	N	N/A	N/A
Nickel		1.1		4.4	4.4		3.4	3.4	200.3	22.3	N	N	N/A	N/A
Zinc		5.5		70.6	70.6		50.5	50.5	51.1	51.1	N	N	N/A	N/A

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

[2]Values represent the 95th percentile (for $n \geq 10$) or maximum (for $n < 10$) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the pollutant already has a WQBEL (for either acute or chronic conditions), the value represents the existing limit.

U.S. ENVIRONMENTAL PROTECTION AGENCY-REGION 1
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES
WATER DIVISION
P.O. BOX 95
CONCORD, NEW HAMPSHIRE 03302-0095

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: April 19, 2022 – May 18, 2022

PERMIT NUMBER: **NH0100668**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Rochester
45 Old Dover Road
Rochester, NH 03867

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Rochester Wastewater Treatment Facility
175 Pickering Road
Gonic, NH 03839

RECEIVING WATER: Cocheco River - Class B

PREPRATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the Pease Wastewater Treatment Facility, which discharges treated industrial, domestic, and commercial wastewater. Sludge from this facility is pumped to sludge disposal lagoons for burial at Turnkey Landfill. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality Regulations, Env-Wq 1700 et seq. EPA has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits or by contacting:

Robin Johnson
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1045
Email: Johnson.Robin@epa.gov

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

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

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 **May 18, 2022**, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

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

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 1

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

U.S. ENVIRONMENTAL PROTECTION AGENCY-REGION 1
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WATER DIVISION
P.O. BOX 95
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JOINT **EXTENSION OF PUBLIC COMMENT PERIOD** PERTAINING TO THE ISSUANCE OF A **DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT** TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT, AND ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: **April 19, 2022 - June 17, 2022**

PERMIT NUMBER: **NH0100668**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Rochester
45 Old Dover Road
Rochester, NH 03867

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Rochester Wastewater Treatment Facility
175 Pickering Road
Gonic, NH 03839

RECEIVING WATER: **Cocheco River - Class B**

PREPRATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the New Hampshire Department of Environmental Services, Water Division (NHDES-WD) have cooperated in the development of a draft permit for the Rochester Wastewater Treatment Facility, which discharges treated domestic and industrial wastewater. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., Chapter 485-A of the New Hampshire Statutes: Water Pollution and Waste Disposal, and the New Hampshire Surface Water Quality Regulations, Env-Wq 1700 et seq. EPA has formally requested that the State certify the draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

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Telephone: (617) 918-1045
Email: Johnson.Robin@epa.gov

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

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

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 ***June 17, 2022***, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public.

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PUBLIC NOTICE PERIOD: **April 19, 2022 - June 2, 2022**

PERMIT NUMBER: **NH0100668**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Rochester
45 Old Dover Road
Rochester, NH 03867

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Rochester Wastewater Treatment Facility
175 Pickering Road
Gonic, NH 03839

RECEIVING WATER: **Cocheco River - Class B**

PREPRATION OF THE DRAFT PERMIT:

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

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

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 ***June 2, 2022***, to the address or email address listed above. Any person, prior to such date, may submit a request in writing to EPA and NHDES for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public.

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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 notice of the final decision to the applicant and each person who has submitted written comments or requested notice.

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WATER DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY - REGION 1

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

Peter Nourse

From: Johnson, Robin <Johnson.Robin@epa.gov>
Sent: Tuesday, March 21, 2023 4:34 PM
To: Peter Nourse
Cc: Franz, Hayley; Carew, James
Subject: Final Issuance of NPDES Permit Number NH0100668
Attachments: Rochester_Final_Letter_NH0100668.pdf; Rochester_FP_WQC_NH0100668.pdf; finalnh0100668permit.pdf

READ RECEIPT REQUESTED - Please respond, acknowledging your receipt for our records.

March 21, 2023

Peter Nourse,

Please find attached a letter regarding the final issuance of NPDES permit number NH0100668, as well as a copy of the Final Permit, EPA's Response to Comments and the New Hampshire Water Quality Certification for your final permit. The Final Permit and Response to Comments will also be posted on our website at https://www.epa.gov/npdes-permits/new-hampshire-final-individual-npdes-permits.

Sincerely,

Robin L. Johnson (she/her)
Environmental Protection Specialist
EPA Region 1
5 Post Office Square
Suite 100
Boston, MA 02109
617.918.1045