

**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 Nashua, New Hampshire**

is authorized to discharge from the facility located at

**Sawmill Road  
Nashua, New Hampshire 03060**

and from **9 Combined Sewer Overflows (CSOs)** (discharge serial numbers: 002-009 and 014); see **Attachment A** of this permit.

to receiving waters named: **Merrimack River** (Wastewater Treatment Facility [Outfall 001] and CSOs [Outfalls 002-005 and 014]) and **Nashua River** (CSOs [Outfalls 006-009])

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

The Town of Hudson, NH is a Co-permittee for Part I.B, Unauthorized Discharges; Part I.C, Operation and Maintenance of the Treatment and Control Facilities, which include conditions regarding the operation and maintenance of the collection systems owned and operated by the Towns; and Part I.D, Alternate Power Source. The permit number assigned to the Co-permittee for purposes of reporting (as specified in Part I.J.9 below) in accordance with the requirements in Parts I.B, I.C, and I.D of this permit are listed in the table below.

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

<b>NHC010170</b>
Town of Hudson Department of Public Works 2 Constitution Drive Hudson, NH 03051

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

This permit expires at midnight, 5 years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on March 6, 2015.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Combined Sewer Overflow Outfalls), **Attachment B** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment C** (Reassessment of Technically Based Industrial Discharge Limits), **Attachment D** (NPDES Permit Requirement for Industrial Pretreatment Annual Report); **Attachment E** (PFAS Analyte List); **Attachment F** (List for Pollutant Scans); and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this       day of

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

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<sup>1</sup> 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 Merrimack 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 <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Rolling Average Effluent Flow <sup>5</sup>	16 MGD <sup>5</sup>	---	---	Continuous	Recorder
Effluent Flow <sup>5</sup>	Report MGD	---	Report MGD	Continuous	Recorder
BOD <sub>5</sub>	30 mg/L 4,006 lb/day	45 mg/L 6,008 lb/day	Report mg/L Report lb/day	2/Week	Composite
BOD <sub>5</sub> Removal <sup>6</sup>	≥ 85 %	---	---	1/Month	Calculation
TSS	30 mg/L 4,006 lb/day	45 mg/L 6,008 lb/day	Report mg/L Report lb/day	2/Week	Composite
TSS Removal <sup>6</sup>	≥ 85 %	---	---	1/Month	Calculation
pH Range <sup>7</sup>	6.5 - 8.0 S.U.			1/Day	Grab
Total Residual Chlorine <sup>8,9</sup>	300 µg/L	---	510 µg/L	1/Day	Grab
<i>Escherichia coli</i> <sup>9</sup>	126/100 mL	---	406/100 mL	1/Day	Grab
Total Phosphorus	Report µg/L	---	---	2/Month	Composite
Total Lead <sup>10</sup>	1.8 µg/L	---	Report µg/L	2/Month	Composite
Total Kjeldahl Nitrogen <sup>11</sup>					
April 1 – October 31	Report mg/L	---	Report mg/L	1/Week	Composite
November 1 – March 31	Report mg/L	---	Report mg/L	1/Month	Composite
Nitrate + Nitrite <sup>11</sup>					
April 1 – October 31	Report mg/L	---	Report mg/L	1/Week	Composite
November 1 – March 31	Report mg/L	---	Report mg/L	1/Month	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Total Nitrogen <sup>11</sup>	Report mg/L Report lb/day	---	Report mg/L	1/Month	Calculation
PFAS Analytes <sup>12</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>13</sup>	---	---	Report ng/L	1/Quarter	Grab
Pollutant Scan <sup>14</sup>	---	---	Report µg/L	1/Year	Composite
<b>Whole Effluent Toxicity (WET) Testing<sup>15,16</sup></b>					
LC <sub>50</sub>	---	---	≥ 100 %	4/Year	Composite
Hardness	---	---	Report mg/L	4/Year	Composite
Ammonia Nitrogen	---	---	Report mg/L	4/Year	Composite
Total Aluminum	---	---	Report mg/L	4/Year	Composite
Total Cadmium	---	---	Report mg/L	4/Year	Composite
Total Copper	---	---	Report mg/L	4/Year	Composite
Total Nickel	---	---	Report mg/L	4/Year	Composite
Total Lead	---	---	Report mg/L	4/Year	Composite
Total Zinc	---	---	Report mg/L	4/Year	Composite
Total Organic Carbon	---	---	Report mg/L	4/Year	Composite

Ambient Characteristic <sup>17</sup>	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
Hardness	---	---	Report mg/L	4/Year	Grab
Ammonia Nitrogen	---	---	Report mg/L	4/Year	Grab
Total Aluminum	---	---	Report mg/L	4/Year	Grab
Total Cadmium	---	---	Report mg/L	4/Year	Grab
Total Copper	---	---	Report mg/L	4/Year	Grab
Total Nickel	---	---	Report mg/L	4/Year	Grab

Total Lead	---	---	Report mg/L	4/Year	Grab
Total Zinc	---	---	Report mg/L	4/Year	Grab
Total Organic Carbon	---	---	Report mg/L	4/Year	Grab
Dissolved Organic Carbon <sup>18</sup>	---	---	Report mg/L	4/Year	Grab
pH <sup>19</sup>	---	---	Report S.U.	4/Year	Grab
Temperature <sup>19</sup>	---	---	Report °C	4/Year	Grab
Total Phosphorus <sup>20</sup> (April 1 - October 31)	---	---	Report mg/L	1/Month	Grab
Pollutant Scan <sup>14</sup>	---	---	Report µg/L	1/Year	Grab
Aesthetics <sup>21</sup> (DMR Attachment)	---	---	Report	1/Month	Observation
Benthic Survey <sup>22</sup> (DMR Attachment)	---	---	Report	Once	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
BOD <sub>5</sub>	Report mg/L	---	---	2/Month	Composite
TSS	Report mg/L	---	---	2/Month	Composite
PFAS Analytes <sup>12</sup>	---	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine <sup>13</sup>	---	---	Report ng/L	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements			Monitoring Requirements <sup>1,2,3</sup>	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>4</sup>
PFAS Analytes <sup>12</sup>	---	---	Report ng/g	1/Quarter	Grab <sup>23</sup>

## 2. Monitoring Requirements for WWTF Internal Bypass (01B) and the Wet Weather Flow Treatment Facility (01W)

During the period beginning on the effective date and lasting through the expiration date, the Permittee may bypass secondary treatment subject to the requirements of Part II.B.4. and Part II.D.1.e. of this permit. The **internal WWTF bypass** (activated when flows to the WWTF exceed 32 MGD) after primary treatment as well as the diversion of flow to the **Wet Weather Flow Treatment Facility (WWFTF)** (activated when flows to the WWTF exceed 50 MGD) are both considered as a bypass of secondary treatment. Two new internal outfalls are being established to monitor these bypass flows. Internal Outfall 01B is located after the internal WWTF bypass before being co-mingled with secondary effluent from the WWTF. Internal Outfall 01W is located after the ballasted flocculation process of the WWFTF before being co-mingled with the WWTF effluent flow in the chlorine contact chamber. Internal Outfalls 01B and 01W, when active, shall be monitored as specified below.

Parameter	Reporting Requirements	Monitoring Requirements	
		Measurement Frequency	Sample Type
Time	Date and Time of Initiation	1/Activation <sup>24</sup>	Observation
Flow	Influent Flow at Initiation (MGD)	1/Activation <sup>24</sup>	Recorder
Time	Date and Time of Termination	1/Activation <sup>24</sup>	Observation
Flow	Influent Flow at Termination (MGD)	1/Activation <sup>24</sup>	Recorder
Time	Duration of Bypass (hrs)	1/Activation <sup>24</sup>	Calculation
Flow	Total Volume of Bypass Flow (MG)	1/Activation <sup>24</sup>	Calculation
BOD <sub>5</sub>	Report Influent and Effluent (mg/L)	1/Quarter	Composite <sup>25</sup>
TSS	Report Influent and Effluent (mg/L)	1/Quarter	Composite <sup>25</sup>

## Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report. The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and NHDES ("the State") of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

For all Effluent Characteristics in Part I.A.1 above, sampling shall be representative of the treated effluent from the WWTF (including any bypass flow from primary treatment as well as any co-mingled flow from the WWTF) and shall be taken at a location after the chlorine contact chamber.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers either to the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in the following ways: they may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.
3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.
4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

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

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

For purposes of compliance with the effluent flow limit, the Permittee shall include all flow that is discharged through Outfall 001, including any flow from the secondary treatment bypass (01B) as well as any flow from the WWTF (01W).

6. The WWTF shall maintain a minimum of 85 removal of both total suspended solids and biochemical oxygen demand during dry weather. Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall, no snow melt (which occurs on a day in which the temperature is greater than 32° F), and 24 hours after a distinct rainfall event (defined as a rainfall event having at least a 10-hour window with no precipitation of > 0.01") to allow the storm-related flow to pass through the collection system and treatment facilities (as recorded by a hydrograph). The percent removal shall be calculated as a monthly average using the influent and effluent BOD<sub>5</sub> and TSS values collected during dry weather days. The Permittee shall attach to its discharge monitoring reports the daily temperature and daily precipitation from the nearest National Weather Service gage, or a gage accepted by the permitting authority.
7. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.). See Part I.G.1 below for a provision to modify the pH range.
8. The Permittee shall minimize the use of chlorine while maintaining adequate bacterial control. Monitoring for total residual chlorine (TRC) is only required for discharges which have been previously chlorinated or which contain residual chlorine. If chlorine is not utilized during a particular monitoring period, TRC monitoring is not necessary and the Permittee may enter "NODI" code 9 (i.e., conditional monitoring) in the relevant discharge monitoring report.

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



9. The monthly average limit for *Escherichia coli* (*E. coli*) is expressed as a geometric mean. *E. coli* monitoring shall be conducted concurrently with TRC monitoring, if TRC monitoring is required.
10. See Part I.G.3 for details related to compliance schedule for the total lead limit.
11. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.  
  
$$\text{Total Nitrogen (mg/L)} = \text{Total Kjeldahl Nitrogen (mg/L)} + \text{Nitrate} + \text{Nitrite (mg/L)}$$
  
$$\text{Total Nitrogen (lb/day)} = [(\text{average monthly Total Nitrogen (mg/L)} * \text{total monthly effluent flow (Millions of Gallons (MG))} / \text{\# of days in the month}) * 8.34]$$
12. Report in nanograms per liter (ng/L) for effluent and influent samples; report nanograms per gram (ng/g) for sludge samples. Until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. Report in NetDMR the results of all PFAS analytes required to be tested in Method 1633, as shown in Attachment E. This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit.
13. Report in nanograms per liter (ng/L) for effluent and influent samples. Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the permit.
14. During the third calendar quarter of each year, the Permittee shall concurrently monitor both the effluent and the receiving water (immediately upstream/upgradient of the discharge) for all the pollutants listed in Attachment F. All effluent and ambient results shall be reported in NetDMR for the quarterly DMR report due by October 15 of each year.
15. The Permittee shall conduct acute toxicity tests (LC50) in accordance with test procedures and protocols specified in **Attachment B** of this permit. LC50 and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected during the same weeks each time of calendar quarters ending March 31<sup>st</sup>, June 30<sup>th</sup>, September 30<sup>th</sup>, and December 31<sup>st</sup>. 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.

One of the quarterly WET tests each year shall be taken at a time when the WWFTF is active (the Permittee shall add a note in the DMR when this occurs). If necessary, this requirement allows for a deviation once per year from the requirement above to sample during the same weeks each quarter.

16. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment 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 B**, Section IV., DILUTION WATER. Minimum levels and test methods are specified in **Attachment B**, Part VI. CHEMICAL ANALYSIS.

If the results indicate a violation of any toxicity limit or if the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge, the Permittee shall follow the procedures described in Part I.G.4 below.

17. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment 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 B**. Minimum levels and test methods are specified in **Attachment B**, Part VI. CHEMICAL ANALYSIS.
18. 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.
19. 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.
20. See Part I.G.2. for special conditions regarding ambient phosphorus monitoring.
21. Once per month, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes in the receiving water that may be caused by the discharge as follows:

- a) any observable change in odor,
- b) any visible change in color,
- c) any visible change in turbidity,
- d) the presence or absence of any visible floating materials, scum or foam,
- e) the presence or absence of any visible settleable solids,
- f) the presence or absence of any visible film or sheen on the surface of the water.

The Permittee shall also report any complaints it receives from the public regarding the taste and/or odor of the receiving water and document what remedial actions, if any, it took to address such complaints.

The results do not need to be submitted each month. Rather, an annual summary of all 12 monthly results shall be submitted as an electronic attachment to the December DMR by each January 15<sup>th</sup> for the previous calendar year.

If an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection, the Permittee shall follow the procedures described in Part I.G.4 below.

22. During the third calendar quarter (*i.e.*, July through September) that begins at least 12 months after the effective date of the permit, a benthic survey shall be conducted once per permit term to assess impacts from the discharge on aquatic life in the benthic environment. See Part I.G.5 for more details.

23. 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>.

24. For each event resulting in a bypass of secondary treatment (either through internal outfall 01B and/or 01W), the Permittee shall measure and report each of the following parameters as specified in the table: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG).

The results for internal Outfalls 01B and internal Outfall 01W shall be summarized and reported as an electronic attachment to the March DMR for the previous calendar year.

25. Once per quarter, the Permittee shall take composite samples of both the influent and effluent BOD<sub>5</sub> and TSS and shall report the results on the quarterly DMR for both internal Outfalls 01B and 01W. Composite sampling for each discharge event must represent an event duration of at least four (4) hours. Hourly grab sampling shall be

performed within the first two hours of the start of the discharge and every hour thereafter for a duration of at least four hours, and all grab samples shall be combined into a single composite sample. If the event lasts longer than four hours, no further sampling is required. An event composite is considered to represent an event duration of at least four hours where (i) the composite represents at least four consecutive hours of flow through the facility; or (ii) the composite represents at least four hours of flow during a 24-hour period starting at approximately 8:00 am each day (+/- 2 hours) coinciding with the permittee's composite sampling schedule, if flow through the facility is discontinuous. If there are no bypasses of at least four hours within a given reporting period (*i.e.*, calendar quarter), the Permittee may report an appropriate No Data Indicator (NODI) code in the DMR for that reporting period.

**Part I.A., continued.**

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

**B. UNAUTHORIZED DISCHARGES**

1. This permit authorizes discharges only from the outfall listed in Part I.A.1 and the CSOs listed in Attachment A, in accordance with the terms and conditions of this permit. Any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility’s design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit. See notification requirements in Part II.D.1.a. 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 and the State within 24 hours of becoming aware of any unauthorized discharge and a report within 5 days, in accordance with Part II.D.1.e (24-hour reporting). See Part I.I below for reporting requirements.
2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location (including latitude and longitude) and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

**C. OPERATION AND MAINTENANCE OF THE TREATMENT AND CONTROL FACILITIES**

1. Adaptation Planning
  - a. *Adaptation Plan.* Within the timeframes described below, the Permittee and Co-permittee shall develop an Adaptation Plan for the Wastewater Treatment System (WWTS) <sup>2</sup> and/or sewer system<sup>3</sup> that they own and operate. Additional information on the procedures and resources to aid permittees in development of the Adaptation Plan is provided on EPA’s Region 1 NPDES website at <https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england>. The Adaptation Plan shall contain sufficient detail for EPA to evaluate the analyses.

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

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

*Component 1: Identification of Vulnerable Critical Assets.* Within 24 months of the effective date of the permit, the Permittee and Co-permittee shall develop and sign, consistent with the signatory requirements in Part II.D.2 of this Permit, an identification of critical assets<sup>4</sup> and related operations<sup>5</sup> within the WWTS and/or sewer system which they own and operate, as applicable, that are most vulnerable due to major storm and flood events<sup>6</sup> under baseline conditions<sup>7</sup> and under future conditions.<sup>8</sup> This information shall be provided to EPA upon request. For these critical assets and related operations, the Permittee and Co-permittee shall assess the ability of each to function properly in the event of impacts<sup>9</sup> from major storm and flood events in terms of effluent flow (e.g., bypass, upset or failure), sewer flow (e.g., overflow, inflow and infiltration), and discharges of pollutants (e.g., effluent limit exceedance).

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

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

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

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

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

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

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

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

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

*Component 3: Implementation and Maintenance Schedule.* Within 48 months of the effective date of the permit, the Permittee and Co-Permittee shall submit to EPA a proposed schedule for implementation and maintenance of adaptive measures. The Implementation and Maintenance Schedule shall summarize the general types of significant risks<sup>12</sup> identified in Component 1, including the methodology and data used to derive future conditions<sup>13</sup> used in the analysis and describe the adaptive measures taken (or planned) to minimize those risks from the impact of major storm and flood events for each of the critical assets and related operations of the WWTS and the sewer system and how those adaptive measures will be maintained, including the rationale for either implementing or not implementing each adaptive measure that was assessed and an evaluation of how each adaptive measure taken (or planned) will be funded.

- b. *Credit for Prior Assessment(s) Completed by Permittee and/or Co-permittee.* If the Permittee and/or Co-permittee has undertaken assessment(s) that were completed within 5 years of the effective date of this permit, or is [are] currently undertaking an assessment that address some or all of the Adaptation Plan components, such prior assessment(s) undertaken by the Permittee and/or Co-permittee may be used (as long as the reporting time frames (set forth in Part I.C.1.a) and the signatory requirements (set forth in Part II.D.2 of this permit) are met) in satisfaction of some or all of these components, as long as the Permittee and/or Co-permittee explains how its prior assessments specifically meet the requirements set forth in this permit

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

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

<sup>13</sup> See footnote 8.

and how the Permittee and/or Co-permittee will address any permit requirements that have not been addressed in its prior or ongoing assessment(s).

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

## 2. Sewer System

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

- a. Maintenance Staff

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

- b. Preventive Maintenance Program

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

- c. Infiltration/Inflow



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

d. Sewer System Mapping

The Permittee shall maintain a map of the sewer collection system it owns. Within 30 months of the effective date of this permit, the Co-permittee, the Town of Hudson, NH, shall prepare a map of the sewer collection system it owns. These maps shall be on a street basemap of the community, with sufficient detail and at a scale to allow easy interpretation. The sewer system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. If any items listed below, such as the location of all outfalls, are not fully documented, the Permittee and Co-permittee must clearly identify each component of the dataset that is incomplete, as well as the date of the last update of the mapping product. Such map(s) shall include, but not be limited to the following:

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

- (10) Interconnections with collection systems owned by other entities;
- (11) The scale and a north arrow; and
- (12) The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

e. Sewer System Operation and Maintenance Plan

The Permittee (Nashua WWTF) shall continue to update and implement a *Sewer System Operation and Maintenance Plan* it has previously submitted to EPA and the State for the portion of the system it owns. The Plan shall be available for review by federal, state and local agencies as requested. The Plan shall include items I.C.1.e.(1).i and ii and I.C.1.e.(2).ii through (2).viii below.

The Co-permittee (Town of Hudson) shall develop and implement a *Sewer System Operation and Maintenance Plan* for the portion of the system it owns.

(1) Within six (6) months of the effective date of the permit, the Co-permittee shall submit to EPA and the State (as an electronic attachment to the DMR):

- i. A description of the collection system management goals, staffing, information management, and legal authorities;
- ii. A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
- iii. A schedule for the development and implementation of the full *Sewer System Operation and Maintenance Plan* including the elements in Parts I.C.2.e.(2)(i) through (2)(viii) below.

(2) The full Sewer System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit (as an electronic attachment to the DMR). The Plan shall include:

- i. The required submittal from Part I.C.2.e.(1) above, updated to reflect current information;
- ii. A preventive maintenance and monitoring program for the collection system;
- iii. Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and

maintenance program is staffed;

- iv. Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
- v. Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
- vi. A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts;
- vii. An educational public outreach program for all aspects of I/I control, particularly private inflow; and
- viii. An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

### 3. Annual Reporting Requirement

The Permittee and Co-permittee shall submit a summary report of activities related to the implementation of their O&M Plans during the previous calendar year. These reports shall be submitted to EPA and the State annually by March 31 (as an electronic attachment to the DMR). The first annual report for the Town of Hudson is due the first March 31 following submittal of the Sewer System O&M Plan required by Parts I.C.2.e.(1) and (2) of this permit. The summary report shall, at a minimum, include:

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. A summary of unauthorized discharges during the past year and their causes and a

report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit;

- f. If the monthly average flow exceeded 80 percent of the facility's 16 MGD design flow (12.8 MGD) for three consecutive months in the previous calendar year, or there have been capacity related overflows, the report shall include:
  - (1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and
  - (2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.
- g. The Adaptation Plan Progress Report described in Part I.C.1.c above. For Hudson, this is required beginning the first March 31 following 24 months from the effective date of the permit.

#### **D. ALTERNATE POWER SOURCE**

In order to maintain compliance with the terms and conditions of this permit, the Permittee and Co-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. Legal Authority**

The Permittee has been delegated primary responsibility for enforcing against discharges prohibited by 40 CFR 403.5 and applying and enforcing any national Pretreatment Standards established by the United States Environmental Protection Agency in accordance with Section 307 (b) and (c) of The Clean Water Act (Act), as amended by The Water Quality Act (WQA), of 1987.

The Permittee shall operate an industrial pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and the approved pretreatment program submitted by the Permittee. The pretreatment program was approved on July 17, 1990 and has subsequently incorporated substantial modifications as approved by EPA. The approved pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403.

The Permittee must have or develop a legally enforceable municipal code or rules and regulations to authorize or enable the POTW to apply and enforce the requirements of Sections 307(b) and (c) and 402(b)(8) and (9) of the Act and comply with the requirements of § 403.8(f)(1). At a minimum, this legal authority shall enable the POTW to:

- a. Deny or condition new or increased contributions of pollutants, or changes in the nature of pollutants, to the POTW by Industrial Users where such contributions do not meet applicable Pretreatment Standards and Requirements or where such contributions would cause the POTW to violate its NPDES permit;
- b. Require compliance with applicable Pretreatment Standards and Requirements by Industrial Users;
- c. Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users this control shall be achieved through permits or equivalent control mechanism identified as significant under § 403.3(v), as required by § 403.8(f)(1)(iii);
- d. Require (a) the development of a compliance schedule by each Industrial User for the installation of technology required to meet applicable Pretreatment Standards and Requirements and (b) the submission of all notices and self-monitoring reports from Industrial Users as are necessary to assess and assure compliance by Industrial Users with Pretreatment Standards and Requirements, including but not limited to the reports required in § 403.12;
- e. Carry out all inspection, surveillance and monitoring procedures necessary to determine, independent of information supplied by Industrial Users, compliance or noncompliance with applicable Pretreatment Standards and Requirements by Industrial Users. 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 with adequate maintenance of records, Representatives of the POTW shall be authorized to enter any premises of any Industrial User in which a Discharge source or treatment system is located or in which records are required to be kept under § 403.12(o) to assure compliance with Pretreatment Standards. Such authority shall be at least as extensive as the authority provided under section 308 of the Act;
- f. Obtain remedies for noncompliance by any Industrial User with any Pretreatment Standard and Requirement. All POTW's shall be able to seek injunctive relief for noncompliance by Industrial Users with Pretreatment Standards and Requirements. All POTWs shall also have authority to seek or

assess civil or criminal penalties in at least the amount of \$1,000 a day for each violation by Industrial Users of Pretreatment Standards and Requirements in accordance with § 403.8(f)(1)(vi)(A); and

- g. Comply with the confidentiality requirements set forth in § 403.14.

## 2. Implementation Requirements

The Permittee shall operate a pretreatment program in accordance with the General Pretreatment Regulations found in 40 CFR Part 403 and with the legal authorities, policies, procedures, and financial provisions of the approved Pretreatment program submitted by the Permittee. The approved Pretreatment program, and any approved modifications thereto, is hereby incorporated by reference and shall be implemented in a manner consistent with the following procedures, as required by 40 CFR Part 403:

- a. In accordance with 40 CFR § 122.44(j)(1), Identify, in terms of character and volume of pollutants contributed from Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of CWA and 40 CFR Part 403.
- b. The Permittee must notify these identified Industrial Users of applicable Pretreatment Standards and any applicable requirements in accordance with 40 CFR § 403.8(f)(2)(iii). Pursuant to 40 CFR § 403.8(f)(6), prepare and maintain a list of significant industrial users and identify the criteria in 40 CFR § 403.3(v)(1) applicable to each industrial user.
- c. The Permittee must carry out inspection procedures and randomly sample and analyze the effluent from Industrial Users and conduct surveillance activities in accordance with 40 CFR § 403.8(f)(2)(v), 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.
- d. The Permittee shall receive and analyze self-monitoring reports and other notices submitted by Industrial Users in accordance with the self-monitoring requirements in 40 CFR § 403.12; This must include timely and appropriate reviews of industrial user reports and notifications to identify all violations of the user's permit, the local ordinance, and federal pretreatment standards and requirements.
- e. The Permittee shall evaluate whether each SIU needs a plan to control Slug

Discharges in accordance with 40 CFR § 403.8(f)(2)(vi). SIUs must be evaluated within 1 year of being designated an SIU. If required, the Permittee shall require the SIU to prepare or update, and implement a slug prevention plan that contains at least the minimum required elements in 40 CFR § 403.8(f)(2)(vi)(A-D) and incorporate the slug control requirements into the SIU's control mechanism;

- f. Pursuant to 40 CFR § 403.8(f)(2)(vii), the Permittee shall investigate instances of non-compliance with Pretreatment Standards and requirements indicated in required reports and notices or indicated by analysis, inspection, and surveillance activities.
- g. The Permittee shall publish, at least annually, in a newspaper or newspapers of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW, a list of all non-domestic users which, at any time in the previous 12 months, were in significant noncompliance as defined in 40 CFR § 403.8 (f)(2)(viii).
- h. The Permittee shall provide sufficient resources and qualified personnel to implement its Pretreatment program in accordance with 40 CFR § 403.8(f)(3);
- i. The Permittee shall enforce all applicable Pretreatment Standards and requirements and obtain remedies for noncompliance by any industrial user. The Permittee shall develop, implement, and maintain an enforcement response plan in accordance with 40 CFR § 403.8(f)(5); and
- j. Pursuant to 40 CFR § 403.8(g), the Permittee that chooses to receive electronic documents must satisfy the requirements of 40 CFR Part 3 – (Electronic reporting).

### 3. Local Limit Development

- a. The Permittee shall develop, continually maintain, and enforce, as necessary, local limits to implement the general and specific prohibitions in 40 CFR § 403.5(c)(1) which prohibit the introduction of any pollutant(s) which cause pass through or interference and the introduction of specific pollutants to the waste treatment system from any source of non-domestic discharge.
- b. 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 the 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).

#### 4. Notification Requirements

- a. The Permittee must notify EPA of any new introductions or any substantial change in pollutants from any Industrial User within sixty (60) days following the introduction or change, as required in 40 CFR 122.42(b)(1-3). Such notice must identify:
  - (1) Any new introduction of pollutants from an Industrial User which would be subject to Sections 301, 306, and 307 of the Act if it were directly discharging those pollutants; or
  - (2) Any substantial change in the volume or character of pollutants being discharged by any Industrial User;
  - (3) For the purposes of this section, adequate notice shall include information on:
    - i. The identity of the Industrial User;
    - ii. The nature and concentration of pollutants in the discharge and the average and maximum flow of the discharge; and
    - iii. Any anticipated impact of the change on the quantity or quality of effluent to be discharged from or biosolids produced at such POTW.
- b. The Permittee must notify EPA as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required 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 pursuant to 40 CFR § 122.29 (b);

- (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged; or
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices.
- c. The Permittee must notify EPA if the POTW modifies or intends to modify its Pretreatment Program.
  - d. The Permittee must notify EPA of any instance of pass through or interference, known or suspected to be related to a discharge from an Industrial User. The notification shall be attached to the DMR submitted EPA and shall describe the incident, including the date, time, length, cause, and the steps taken by the Permittee and Industrial User to address the incident.

#### 5. Annual Report Requirements

The Permittee shall provide EPA with a hard copy 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. The report must include, at a minimum, the applicable required data in Appendix A to 40 CFR Part 127, a summary of changes to the POTW's pretreatment program that have not been previously reported to EPA, and any other relevant information requested by EPA. Beginning on December 21, 2025 all annual reports submitted in compliance with this section must be submitted electronically by the POTW Pretreatment Program to EPA or initial recipient, as defined in 40 CFR § 127.2(b). Electronic submittals shall be in compliance with this section and 40 CFR Part 3 (including, in all cases, subpart D to Part 3), 40 CFR § 122.22(e), and 40 CFR Part 127 (Part 127 is not intended to undo existing requirements for electronic reporting). Prior to this date, and independent of 40 CFR Part 127, EPA 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 provide EPA 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 40 CFR § 403.12(i). The annual report shall be consistent with the format described in Attachment D (NPDES Permit Requirement for Industrial Pretreatment Annual Report) of this permit and shall be submitted by March 1<sup>st</sup> of each year.

6. Beginning the first full calendar quarter following 6 months after the effective date of the permit, the Permittee shall collect or require annual sampling each calendar year for 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 (e.g., bearings)
- Landfill Leachate
- Centralized Waste Treaters
- Known or Suspected PFAS Contaminated Sites
- Fire Fighting Training Facilities
- Airports
- Any Other Known or Expected Sources of PFAS

Sampling shall be conducted using Method 1633 for the PFAS analytes listed in Attachment E. The industrial discharges sampled, and the sampling results shall be summarized and included in the annual report (see Part I.E.5).

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

### **3. Compliance Schedule for Total Lead**

The effluent limit for total lead shall become effective 24 months from the effective date of the permit. The following compliance schedule for achieving the total lead limit shall apply for the first 24 months from the effective date of the permit:

- a. Within twelve (12) months of the effective date of the permit, the Permittee shall evaluate options for reducing lead in the discharge. This evaluation must include, at

a minimum, an evaluation of methods for optimization of the treatment process and potential source reduction within the collection system. The Permittee shall submit a report to EPA and NHDES documenting the findings of this analysis within one year of the effective date of the permit.

- b. During the second year that the permit is in effect, the Permittee shall implement the findings of its evaluation.
- c. During the 24-month compliance schedule, the Permittee shall monitor the effluent (twice per month) and report ( $\mu\text{g/L}$ ) the average monthly results for lead.

#### 4. Toxicity Violation Procedures

##### a. Accelerated WET Testing

The Permittee shall conduct at least two accelerated re-tests at 14-day intervals which must be started within 14 days and 28 days of receiving the following results:

- any WET test results in a violation of any WET limit and the test acceptability criteria were met (only re-test for the species that failed); or
- the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge (test for all species identified in permit); or
- an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection described in Part I.A.1 (test for all species identified in permit).

If the receiving water was used as the dilution water and is suspected to be toxic (*e.g.*, based on results from the initial test), the Permittee shall conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee shall return to a normal monitoring frequency but should request to continue to use laboratory water as the dilution water based on these results. If either accelerated WET test violates any WET limits (and the test acceptability criteria were met), the discharge is considered to have persistent toxicity and the Permittee must immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) in accordance with subpart b below to resolve any toxic impacts on the receiving water.

##### b. TIE/TRE

- (1) If the WET re-test described above results in a violation of the WET limits, the Permittee must immediately initiate a TIE/TRE designed to identify and reduce toxicity in the discharge. Notice of TIE/TRE study implementation is to be submitted to EPA (via email: [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov)) and the State within 10 days of receiving notification of WET re-test failure.
- (2) A TIE/TRE schedule and action plan must be submitted to EPA and the State as an electronic attachment to the DMR within 60 days of receipt of WET re-test failure.

The TIE/TRE schedule (from the initiation date to the termination date) should be as short as possible, and no longer than 24 months as follows: The “TIE/TRE initiation date” is the date of the receipt of results for the toxicity test that confirms persistent toxicity and the “TIE/TRE termination date” is the date corrective actions to resolve toxicity are identified and a schedule for completing these corrective actions is proposed.

The objective of the action plan is to identify the source(s) of toxicity by analyzing toxicity testing samples for any toxicant identified as being a potential source of toxicity and ascertaining whether the same level of toxicity occurs when any suspected toxicant level varies. This information might lead to finding one or more toxicants or confirming or eliminating suspected toxicants and possibly their source(s).

- (3) Quarterly “TIE/TRE Progress Reports” should be submitted to EPA and the State as an electronic attachment to the DMR at the end of each quarter after the TIE/TRE initiation date. The progress report should list all activities and findings related to resolving toxicity, including all WET and chemical test data. The data summaries of the TIE/TRE also should be provided in a tabulated format with explanations of the procedures used and the recorded findings from the study.
- (4) A “Final TIE/TRE Report” should be submitted to EPA and the State within 45 days of the TIE/TRE termination date (as an electronic attachment to the DMR) and should summarize the TIE/TRE activities and findings, propose the corrective action(s) to be taken, and propose a schedule to complete any identified corrective action(s).
- (5) After submission of the “Final TIE/TRE Report,” the Permittee shall continue to submit quarterly “Toxicity Reduction Progress Reports” (as an electronic attachment to the DMR) documenting progress on the corrective actions being taken to reduce toxicity in accordance with the proposed schedule.

- (6) Upon completion of all corrective actions identified in the “Final TIE/TRE Report,” the Permittee shall submit a “Toxicity Reduction Completion Report” (as an electronic attachment to the DMR) summarizing the corrective actions taken based on the TIE/TRE and shall include all information necessary to demonstrate that the discharge is no longer toxic and consistently complies with all WET limits.

## 5. Benthic Survey

During the third calendar quarter (*i.e.*, July through September) that begins at least 12 months after the effective date of the permit, the Permittee shall conduct a benthic survey once per permit term to assess impacts from the discharge on aquatic life in the benthic environment.

Benthic grab samples shall be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

Taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

## H. COMBINED SEWER OVERFLOWS (CSOs)

1. During wet weather (including snowmelt), the Permittee is authorized to discharge storm water/wastewater from the following CSO outfalls: 002, 003, 004, 005, 006, 007, 008, 009, and 014 (See **Attachment A** of this Permit).
2. The effluent discharged from these CSOs is subject to the following limitations:

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



- b. Each CSO structure/regulator, pumping station and/or tidegate shall be routinely inspected, at a minimum of once per month, to ensure that they are in good working condition and adjusted to minimize combined sewer discharges (NMC # 1, 2 and 4). The following inspection results shall be recorded: the date and time of inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the Permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The Permittee shall maintain all records of inspections for at least three years.
- c. **Annually, by March 31<sup>st</sup>**, the Permittee shall submit a certification to NHDES and EPA which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained. NHDES and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the Permittee. Discharges to the combined system of septage, holding tank wastes, or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active (NMC # 3, 6, and 7).
- d. Dry weather overflows ("DWOs") are prohibited (NMC # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and NHDES orally within 24 hours of the time the Permittee becomes aware of the circumstances and a written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances using NeT-Sewer Overflow as described in Part I.I.6 below. See also Paragraph D.1.e. of Part II of this permit.
- e. The Permittee shall quantify and record all discharges from combined sewer outfalls (NMC # 9). Quantification shall be through direct measurement. The following information must be recorded for each combined sewer outfall for each discharge event, as set forth in Part I.H.5.:
- Duration (hours) of discharge;
  - Volume (gallons) of discharge;
  - National Weather Service precipitation data from the nearest gage where precipitation data is available. Cumulative precipitation per discharge event shall be calculated.

The Permittee shall retain records of CSO discharges for a period of at least 3 years from the date of the sample, measurement, report or application.

- f. The Permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC # 8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public from the land and water. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

CITY OF NASHUA  
WET WEATHER SEWAGE DISCHARGE  
OUTFALL (discharge serial number)

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

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

g. Public Notification Plan

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

(4) Annual notification - **Annually, by March 31<sup>st</sup>**, the Permittee shall post the annual report for the previous calendar year (described in Part I.H.4 below) on a publicly available website, and it shall remain on the website for a minimum of 24 months.

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

#### 4. Nine Minimum Controls Reporting Requirement

**Annually, by March 31<sup>st</sup>**, the Permittee shall submit a report summarizing activities during the previous calendar year relating to compliance with the nine minimum controls. The annual report shall include information on the locations of CSOs, a summary of CSO outfall monitoring data required by Part I.H.5 of this permit, and the status and progress of CSO abatement work.

#### 5. CSO Bacteria Limits and Pollutant Scans

The Permittee is authorized to discharge stormwater and wastewater into the Merrimack River from Combined Sewer Overflow (CSO) Outfalls serial numbers 002, 003, 004, and 005, and into the Nashua River from Outfall serial numbers 006, 007, 008 and 009. These discharges are authorized only during wet weather. Such discharges shall be monitored by the Permittee as specified below. Samples specified below shall be taken at a location that provides a representative analysis of the effluent.

Effluent Characteristic	Discharge Limitation	Monitoring Requirement	
	Wet Weather Event Maximum	Measurement Frequency	Sample Type
<i>Escherichia coli</i> <sup>1</sup>	1,000/100 mL	1/Year	Grab
Pollutant Scan <sup>2</sup>	Report µg/L	1/Year	Grab

#### Footnotes:

1. The Permittee shall sample CSO Outfalls 002, 003, 004, 005, 006, 007, 008 and 009 at least once per calendar year. All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences. The “event maximum” values for *Escherichia coli* shall be reported on the appropriate DMR for the year sampled for each CSO outfall.
2. The Permittee shall take an effluent grab sample only from CSO outfalls 004, 005, and 006 taken at least once per calendar year and shall measure for all the pollutants listed in Attachment F. All attempts must be made to begin sampling during the first half hour

after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences.

## 6. CSO Outfall Monitoring

For each combined sewer overflow outfall listed in Part I.H.1 of this permit, the Permittee must monitor the following which shall be reported in each monthly DMR for each outfall and submitted with the annual report required by Part I.H.4. of this permit.:

Parameters	Reporting Requirements	Monitoring Requirements	
	Total Monthly	Measurement Frequency <sup>1</sup>	Sample Type
Total Flow <sup>2</sup>	Report MG/Month	Daily, when discharging	Continuous
Total Flow Duration <sup>2</sup> (Duration of flow through CSO)	Report Hours	Daily, when discharging	Continuous
Number of CSO Discharge Events <sup>2</sup>	Report Monthly Count	Daily, when discharging	Occurrences
Rainfall <sup>3</sup>	Total precipitation (inches)	Daily, when discharging	Calculation

### Footnotes:

1. For those months when a CSO discharge does not occur, the Permittee must indicate “no discharge” (using the appropriate NODI code) for the outfall for which data was not collected.
  2. For Total Flow, measure the total flow discharged from each CSO outfall during the month. For Total Flow Duration, report the total duration (hours) of discharges for each CSO outfall during the month. For Number of CSO Discharge Events, a single discharge event spanning more than one calendar day shall be reported as one discharge event.
  3. The Permittee shall use National Weather Service precipitation data from the nearest gage where precipitation data is available to calculate and report cumulative precipitation (in inches) per discharge event.
7. Limitations and Monitoring Requirements for the Screening and Disinfection CSO Treatment Facility (Outfall 014)

In addition to the requirements for all CSOs listed above, the Permittee is authorized to discharge treated effluent from the **Screening and Disinfection CSO Treatment Facility** through Outfall 014 to the Merrimack River and the discharge shall be limited and monitored as specified below. These results shall be reported in the DMR for the second and third calendar quarter of each year.

Effluent Characteristic	Effluent Limitation	Monitoring Requirements	
	Maximum Daily	Measurement Frequency <sup>1</sup>	Sample Type
<i>Escherichia coli</i> <sup>2,3</sup>	1,000/100 mL	2/year	Grab
Total Residual Chlorine <sup>3</sup>	0.089 mg/L	2/year	Grab
pH <sup>4</sup>	Report Max and Min S.U.	2/year	Grab
BOD <sub>5</sub>	Report mg/L and lb/day	2/year	Composite <sup>5</sup>
TSS	Report mg/L and lb/day	2/year	Composite <sup>5</sup>
Pollutant Scan <sup>6</sup>	Report µg/L	1/Year	Grab
<b>Whole Effluent Toxicity (“WET”) Testing<sup>7</sup></b>			
LC <sub>50</sub>	Report %	2/year	Composite <sup>5</sup>

## Footnotes:

1. The Permittee shall conduct sampling twice per year, once in the second calendar quarter (April 1 – June 30) and once in the third calendar quarter (July 1 – September 30), when active.
2. The *Escherichia coli* effluent limits apply for flows up to the maximum treatment capacity of the Screening and Disinfection CSO Treatment Facility of 91 MGD and samples should be taken of the treated flow before being comingled with any untreated CSO flow after treatment. During a CSO overflow event at outfall 014, the Permittee shall maximize flow through the CSO Treatment Facility to the extent practicable.
3. *Escherichia coli* monitoring shall be conducted concurrently with total residual chlorine monitoring. Hourly grab sampling shall be performed within the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The average of all grab samples shall be reported as the “Average Monthly” value. The highest result of any single grab sample shall be reported as the “Maximum Daily” value.
4. Hourly pH grab sampling shall be performed within the first two hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The minimum and maximum pH result of all grab samples shall be reported.
5. Composite sampling for each discharge event must represent an event duration of at least four (4) hours. Hourly grab sampling shall be performed within the first two hours of the start of the discharge and every hour thereafter for a duration of at least four hours, and all grab samples shall be combined into a single composite sample. If the event lasts longer than four hours, no further sampling is required. An

- event composite is considered to represent an event duration of at least four hours where (i) the composite represents at least four consecutive hours of flow through the facility; or (ii) the composite represents at least four hours of flow during a 24-hour period starting at approximately 8:00 am each day (+/- 2 hours) coinciding with the permittee's composite sampling schedule, if flow through the facility is discontinuous. If there are no CSO overflows of at least four hours within a given reporting period (*i.e.*, second or third calendar quarter), the Permittee may report an appropriate No Data Indicator (NODI) code in the DMR for that reporting period.
6. The Permittee shall take an effluent grab sample at least once per calendar year and shall measure for all the pollutants listed in Attachment F. All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences.
  7. The Permittee shall test the daphnid, *Ceriodaphnia dubia* (*C. dubia*), and the fathead minnow, *Pimephales promelas* (*P. promelas*), in accordance with test procedures and protocols specified in **Attachment A** of this permit.

## I. REPORTING REQUIREMENTS

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

### 1. Submittal of DMRs Using NetDMR

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

### 2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this permit, the Permittee and Co-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;
- (5) These reports, information, and requests shall be submitted to EPA WD electronically at [R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov).

#### 6. Submittal of Sewer Overflow and Bypass Reports and Notifications

The Permittee and Co-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 603-271-2985**



**J. STATE 401 CERTIFICATION CONDITIONS**

This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate any and all conditions in the State's 401 water quality certification into the Final Permit.

**Attachment A**

**Combined Sewer Overflow Outfalls**

<b>Outfall No.</b>	<b>Name</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Receiving Water</b>
<b>002</b>	<b>Salmon Brook</b>	<b>42°44'50"</b>	<b>71°26'23"</b>	<b>Merrimack River</b>
<b>003</b>	<b>Farmington Rd.</b>	<b>42°44'21"</b>	<b>71°26'23"</b>	<b>Merrimack River</b>
<b>004</b>	<b>Burke St.</b>	<b>42°45'13"</b>	<b>71°26'25"</b>	<b>Merrimack River</b>
<b>005</b>	<b>East Hollis St.</b>	<b>42°45'48"</b>	<b>71°26'40"</b>	<b>Merrimack River</b>
<b>006</b>	<b>Nashua River</b>	<b>42°45'57"</b>	<b>71°27'03"</b>	<b>Nashua River</b>
<b>007</b>	<b>Tampa St.</b>	<b>42°45'44"</b>	<b>71°28'39"</b>	<b>Nashua River</b>
<b>008</b>	<b>Broad St.</b>	<b>42°16'09"</b>	<b>71°29'17"</b>	<b>Nashua River</b>
<b>009</b>	<b>Locke St.</b>	<b>42°46'01"</b>	<b>71°27'21"</b>	<b>Nashua River</b>
<b>014</b>	<b>Screening/Disinfection Facility</b>	<b>42°45'51"</b>	<b>71°26'40"</b>	<b>Merrimack River</b>

**Attachment B**  
**USEPA REGION 1 FRESHWATER ACUTE**  
**TOXICITY TEST PROCEDURE AND PROTOCOL**

## **I. GENERAL REQUIREMENTS**

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

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

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

## **II. METHODS**

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

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

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

## **III. SAMPLE COLLECTION**

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

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

All samples held overnight shall be refrigerated at 1- 6°C.

#### IV. DILUTION WATER

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

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

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

[R1NPDESReporting@epa.gov](mailto:R1NPDESReporting@epa.gov)

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

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

**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE  
DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS<sup>1</sup>**

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

February 28, 2011  
(updated links/addresses 2023)

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

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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<sup>1</sup>**

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

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

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Footnotes:

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



## VI. CHEMICAL ANALYSIS

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

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

### Notes:

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

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

### No Observed Acute Effect Level (NOAEL)

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

## **VIII. TOXICITY TEST REPORTING**

A report of the results will include the following:

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

## ATTACHMENT 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 ratio 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 planning 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.

POTW Name & Address : \_\_\_\_\_

Date EPA approved current TBLLs : \_\_\_\_\_

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.

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

If yes, explain.

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

\*Hardness Dependent (mg/l - CaCO<sub>3</sub>)

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.

[illegible]

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

## ATTACHMENT D

### NPDES PERMIT REQUIREMENT FOR INDUSTRIAL PRETREATMENT ANNUAL REPORT

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

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

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

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

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

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

## Attachment E: PFAS Analyte List

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

Target Analyte Name	Abbreviation	CAS Number
<b>Ether sulfonic acids</b>		
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
<b>Fluorotelomer carboxylic acids</b>		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2 <i>H</i> ,2 <i>H</i> ,3 <i>H</i> ,3 <i>H</i> -Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

## **ATTACHMENT F: LIST FOR POLLUTANT SCANS**



	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorine (total residual, TRC) <sup>2</sup>							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dissolved oxygen							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrate/nitrite							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Kjeldahl nitrogen							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Oil and grease							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phosphorus							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Total dissolved solids							<input type="checkbox"/> ML <input type="checkbox"/> MDL

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See 40 CFR 122.21(e)(3).

<sup>2</sup> Facilities that do not use chlorine for disinfection, do not use chlorine elsewhere in the treatment process, and have no reasonable potential to discharge chlorine in their effluent are not required to report data for chlorine.

	NPDES Permit Number	Facility Name	Outfall Number
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EFFLUENT PARAMETERS FOR POTWS							
Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Metals, Cyanide, and Total Phenols							
Hardness (as CaCO <sub>3</sub> )							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Antimony, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Arsenic, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Beryllium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Cadmium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chromium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Copper, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Lead, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Mercury, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nickel, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Selenium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Silver, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Thallium, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Zinc, total recoverable							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Cyanide							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Total phenolic compounds							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Volatile Organic Compounds							
Acrolein							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Acrylonitrile							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bromoform							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chlorodibromomethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloroethylvinyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chloroform							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dichlorobromomethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
trans-1,2-dichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1-dichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichloropropane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichloropropylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Ethylbenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl bromide							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methyl chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Methylene chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2,2-tetrachloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Tetrachloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Toluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,1-trichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,1,2-trichloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Trichloroethylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Vinyl chloride							<input type="checkbox"/> ML <input type="checkbox"/> MDL
<b>Acid-Extractable Compounds</b>							
p-chloro-m-cresol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dichlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dimethylphenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4,6-dinitro-o-cresol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-nitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-nitrophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Pentachlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4,6-trichlorophenol							<input type="checkbox"/> ML <input type="checkbox"/> MDL
<b>Base-Neutral Compounds</b>							
Acenaphthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Acenaphthylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzidine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(a)pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
3,4-benzofluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Benzo(ghi)perylene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Benzo(k)fluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethoxy) methane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroethyl) ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-chloroisopropyl) ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Bis (2-ethylhexyl) phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-bromophenyl phenyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Butyl benzyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2-chloronaphthalene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
4-chlorophenyl phenyl ether							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Chrysene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-butyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
di-n-octyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dibenzo(a,h)anthracene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,3-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,4-dichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
3,3-dichlorobenzidine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Diethyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Dimethyl phthalate							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,4-dinitrotoluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
2,6-dinitrotoluene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

	NPDES Permit Number	Facility Name	Outfall Number
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**EFFLUENT PARAMETERS FOR POTWS**

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method <sup>1</sup>	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
1,2-diphenylhydrazine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Fluoranthene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Fluorene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorobutadiene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachlorocyclo-pentadiene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Hexachloroethane							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Indeno(1,2,3-cd)pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Isophorone							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Naphthalene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Nitrobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodi-n-propylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodimethylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
N-nitrosodiphenylamine							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Phenanthrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
Pyrene							<input type="checkbox"/> ML <input type="checkbox"/> MDL
1,2,4-trichlorobenzene							<input type="checkbox"/> ML <input type="checkbox"/> MDL

<sup>1</sup> Sampling shall be conducted according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR Chapter I, Subchapter N or O. See 40 CFR 122.21(e)(3).

NPDES PART II STANDARD CONDITIONS  
(April 26, 2018)<sup>1</sup>

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<sup>1</sup> Updated July 17, 2018 to fix typographical errors.

## NPDES PART II STANDARD CONDITIONS

(April 26, 2018)

### A. GENERAL REQUIREMENTS

#### 1. Duty to Comply

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

- a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.
- b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L. 114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

#### (1) Criminal Penalties

- (a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than \$2,500 nor more than \$25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than \$50,000 per day of violation or by imprisonment of not more than 2 years, or both.
- (b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than \$100,000 per day of violation, or imprisonment of not more than 6 years, or both.
- (c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than \$250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing



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

- (d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (2) *Civil Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
- (3) *Administrative Penalties.* The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:
  - (a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).
  - (b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

### 2. Permit Actions

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

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condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

### 9. Other Laws

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

## B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

### 1. Proper Operation and Maintenance

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

### 2. Need to Halt or Reduce Not a Defense

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

### 3. Duty to Mitigate

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

### 4. Bypass

#### a. Definitions

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

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

#### c. Notice

## NPDES PART II STANDARD CONDITIONS

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

### d. *Prohibition of bypass.*

- (1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:
  - (a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
  - (b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
  - (c) The Permittee submitted notices as required under paragraph 4.c of this Section.
- (2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

## 5. Upset

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

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improper operation.

- b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this Section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- c. *Conditions necessary for a demonstration of upset.* A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the Permittee can identify the cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated; and
  - (3) The Permittee submitted notice of the upset as required in paragraph D.1.e.2.b. (24-hour notice).
  - (4) The Permittee complied with any remedial measures required under B.3. above.
- d. *Burden of proof.* In any enforcement proceeding the Permittee seeking to establish the occurrence of an upset has the burden of proof.

## C. MONITORING REQUIREMENTS

### 1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.
- e. The Clean Water Act provides that any person who falsifies, tampers with, or

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

### 2. Inspection and Entry

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

- a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

## D. REPORTING REQUIREMENTS

### 1. Reporting Requirements

- a. *Planned Changes.* The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).
  - (3) The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. *Anticipated noncompliance.* The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

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- c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.
- d. *Monitoring reports.* Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.
  - (2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. *Twenty-four hour reporting.*
  - (1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

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

- (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).
  - (3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.
- f. *Compliance Schedules.* Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.
- h. *Other information.* Where the Permittee becomes aware that it failed to submit any



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

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

### 2. Signatory Requirement

- a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

### 3. Availability of Reports.

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

## E. DEFINITIONS AND ABBREVIATIONS

### 1. General Definitions

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

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

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

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

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“approved States,” including any approved modifications or revisions.

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

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

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

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

*Bypass* see B.4.a.1 above.

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

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

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

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

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

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

*Daily Discharge* means the “discharge of a pollutant” measured during a calendar day or any

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

*Direct Discharge* means the “discharge of a pollutant.”

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

*Discharge*

- (a) When used without qualification, *discharge* means the “discharge of a pollutant.”
- (b) As used in the definitions for “interference” and “pass through,” *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

*Discharge of a pollutant* means:

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

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

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

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

*Environmental Protection Agency* (“EPA”) means the United States Environmental Protection

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Agency.

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

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

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

*Indirect discharger* means a nondomestic discharger introducing “pollutants” to a “publicly owned treatment works.”

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

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

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

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

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

*LC<sub>50</sub>* means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC<sub>50</sub> = 100% is defined as a sample of undiluted effluent.

*Maximum daily discharge limitation* means the highest allowable “daily discharge.”

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

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

### *Municipality*

- (a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.
- (b) As related to sludge use and disposal, *municipality* means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal Agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management Agency under Section 208 of the CWA, as amended. The definition includes a special district created under State law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in Section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

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

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

- (a) From which there is or may be a “discharge of pollutants;”
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source;” and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site.”

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

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

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

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

*NPDES* means “National Pollutant Discharge Elimination System.”

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

*Secondary industry category* means any industry which is not a “primary industry category.”

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

*Upset* see B.5.a. above.

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

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

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

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- (b) All interstate waters, including interstate “wetlands;”
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition.

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

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

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

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

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

### 2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl <sub>2</sub>	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 <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen

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kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	“Whole effluent toxicity”
ZID	Zone of Initial Dilution

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

**FACT SHEET**

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

**NPDES PERMIT NUMBER: NH0100170**

**PUBLIC NOTICE START AND END DATES: December 18, 2024 – February 3, 2025**

**NAME AND MAILING ADDRESS OF APPLICANT:**

City of Nashua  
9 Riverside Street  
Nashua, NH 03062

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

Nashua Wastewater Treatment Facility (WWTF)  
Sawmill Road  
Nashua, NH 03060 and 9 combined sewer overflow (CSO) outfalls

**RECEIVING WATER AND CLASSIFICATION:**

Merrimack River (WWTF Outfall 001 and CSO Outfalls 002 through 005; 014) (Hydrologic  
Unit Code 010700061206)  
Nashua River (CSO Outfalls 006 through 009) (Hydrologic Unit Code 010700040402)  
Merrimack River Watershed, Class B (both)

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## 1.0 Proposed Action

The above-named applicant (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Nashua Wastewater Treatment Facility (the Facility) into the Merrimack River and the Nashua River.

The permit currently in effect was issued on March 6, 2015 with an effective date of June 1, 2015 and expired on May 31, 2020 (the "2015 Permit"). The City timely petitioned EPA's Environmental Appeals Board ("EAB") for review of the 2015 Permit contesting the following provisions:

- (1) phosphorus effluent limit for Outfall 001 (Part I.A.1);
- (2) lead effluent limit for Outfall 001 (Part I.A.1);
- (3) copper effluent limit for Outfall 001 (Part I.A.1);
- (4) total residual chlorine limits for Outfalls 001 and 014 (Parts I.A.1 and I.B.5.b);
- (5) sample collection location requirements for compliance with the POTW Treatment Plant effluent limits for BOD<sub>5</sub>, TSS, and pH (Part I.A.1 footnote 3);
- (6) monitoring requirements for BOD<sub>5</sub>, TSS, and flow at internal Outfall 01W (Part I.B.5.a);
- (7) monitoring requirements for BOD<sub>5</sub>, TSS, and flow at the Screening and Disinfection Facility (Part I.B.5.b);
- (8) definition of dry weather (Parts I.A.4 and I.B.2.d);
- (9) condition prohibiting the discharges from causing a violation of water quality standards of the receiving water (Part I.B.1.d); and
- (10) four requirements regarding Nine Minimum Controls Annual Reporting Requirements related to CSOs (Part I.B.3.e(3), (4), (6), and (7)).

These conditions are collectively referred to as the "Contested Conditions" of the 2015 Permit and these requirements were stayed and never took effect. Based on a letter sent by EPA to the City dated May 13, 2015, the uncontested permit conditions of the 2015 Permit (*i.e.*, everything in the 2015 Permit except the provisions listed above) went into effect on June 1, 2015.

The Permittee filed an application seeking NPDES permit reissuance from EPA dated December 3, 2019, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on March 10, 2020 the Facility's 2015 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on April 10, 2024.

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 NHDES to "consider" a federal NPDES permit to be a State surface water discharge permit.

As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

## 2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except to the extent authorized under specific provisions of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA’s principal permitting programs, the NPDES Permit Program. Under this section, EPA may “issue a permit for the discharge of any pollutant or combination of pollutants” on the condition that the discharge will comply with the standards specified in certain other provisions of the statute (e.g., CWA §§ 301, 306 and 403). CWA § 402(a)(1). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA’s NPDES permit program are generally found in 40 CFR Parts 122, 124, 125, and 136.

“Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits” in order to achieve the statutory mandates of Sections 301 and 402 of the CWA. *Arkansas v. Oklahoma*, 503 U.S. 91, 105 (1992). Technology-based effluent limitations (TBELs) represent the minimum level of pollutant discharge control that must be satisfied under Sections 301(b) and 402(a)(1) of the CWA. *See also* 40 CFR § 125.3(a). When limits more stringent than technology-based limits are needed to maintain or achieve compliance with state water quality standards (WQS), then NPDES permit must include water quality-based limitations. *See* CWA §§ 301(b)(1)(C) and 401; 40 CFR §§ 122.4(d), 122.44(d)(1) and (5), 124.53, and 124.55.

### 2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as “secondary treatment.” Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD<sub>5</sub>), 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 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 Regulations, 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 particular numeric and narrative water quality criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. 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). To ensure compliance with applicable narrative water quality standards, the Region has included numeric water quality-based effluent limitations and monitoring requirements in lieu of narrative limitations, as described in greater detail below. See sections 5.1.10-12. These more specific requirements related to WET testing, pollutant scans, visual inspections of the receiving water, and benthic studies, and provide more direction to permittees as to how to ensure compliance with the narrative water quality standards. EPA may remove or reduce these new requirements in the future and/or implement an alternative permitting approach if EPA finds that the additional data are no longer necessary to protect these water quality standards.

### **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 and conditions 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), 33 U.S.C. § 1311(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. In addition, permit limits “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).

Given that EPA guidance<sup>1</sup> directs that reasonable potential analyses be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections below, this information includes data from the Permittee’s most recent

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<sup>1</sup> See 2010 NPDES Permit Writer’s Manual, chapter 6 available at: [https://www.epa.gov/sites/default/files/2015-09/documents/pwm\\_chapt\\_06.pdf](https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf)

application, DMR data during the review period, and any other available information included in the administrative record.

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

If the permitting authority determines that the discharge of a pollutant will not cause, have the reasonable potential to cause, or contribute to an excursion above WQs, the permit does not need to contain WQBELs for that pollutant. However, EPA must ensure that the discharge of that pollutant does not increase during the permit term to the point that would violate water quality standards. Therefore, Part I.B.1 (Unauthorized Discharges) of the permit includes the following provision to ensure that EPA's reasonable potential analyses (for all pollutants) remain protective throughout the life of the permit, and which would also clearly articulate the scope of the protections afforded to the Permittee pursuant to CWA section 402(k):

“Any pollutant loading greater than the proposed discharge (the “proposed discharge” is based on the chemical-specific data and the facility's design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit.”

EPA notes that such increases may be allowable, but the Permittee must first submit a request to EPA to authorize such an increase. This request will allow EPA to conduct an updated reasonable potential analysis to reassess whether a WQBEL is needed for the newly proposed discharge. Permit modification or reissuance may be required before the proposed discharge would be authorized.

### **2.2.5 State Certification**

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

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(b). EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

Note that a draft state certification will be made available for public comment by the State separately from this Draft Permit as part of the permit reissuance process. EPA does not have authority to make changes to the state certification conditions. Any comments regarding the draft state certification conditions should be made directly to NHDES as part of their public notice.

### **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 a discharger's effluent flow volume 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 its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility's effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). 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" effluent flow assumptions through imposition of permit conditions for effluent flow.<sup>2</sup> In this regard, the effluent flow limitation is a component of an WQBELs because

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<sup>2</sup> 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

the WQBELs are premised on a maximum level flow. The effluent flow limit may also be necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSSs.

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.

Setting limits on effluent flow volumes is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. See CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with EPA's authorities under the CWA.

As provided in Part II.B.1 (Standard Conditions) of the proposed permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, an 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).

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.

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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).

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

## 2.4 Monitoring and Reporting Requirements

### 2.4.1 Monitoring Requirements

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(h), (j), and (l)(9), 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. See 40 CFR § 122.41 (j)(4). 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*.<sup>3</sup> 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:

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<sup>3</sup> Fed. Reg. 49,001 (Aug 19, 2014).

- The method minimum level<sup>4</sup> (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or
- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

### 2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the State electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15<sup>th</sup> 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.<sup>5</sup>

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 Final 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 EPA's NPDES permitting regulations. *See* 40 CFR Part 122.41 *See also, generally*, 40 CFR Part 122.

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<sup>4</sup> 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).

<sup>5</sup> <https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information>



## **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 2015 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

## **3.0 Description of Facility and Discharge**

### **3.1 Location and Type of Facility**

The location of the treatment plant and Outfall 001 to the Merrimack River are shown in Figure 1. The longitude and latitude of the outfall is 42°44'50", 71°26'29".

The Nashua Wastewater Treatment Facility (WWTF) is an activated sludge wastewater treatment facility that is engaged in the collection and treatment of the collection and treatment of municipal and industrial wastewater. Currently, the Facility serves approximately 89,246 residents in the City of Nashua, as well as a small number of residents in the Towns of Hudson and Merrimack, NH, as well as Tyngsborough, MA.

The Facility has a design flow of 16 MGD, the annual average daily flow reported in the 2019 application was 12.3 MGD and the median for the last 5 years has been 11.42 MGD. The system is approximately 74% separate and 26% combined sewers. Wastewater is comprised of mostly domestic sewage, industrial wastewater, and some commercial sewage.

There are currently 18 significant industrial users (IUs) that contribute wastewater to the Nashua WWTF, thirteen (13) of which are categorical industrial users (CIUs). A CIU is an industrial user that is subject to categorical pretreatment standards under Section 307 of the CWA. All SIUs and CIUs are listed in Table 1 below. A non-categorical SIU is an industrial user that meets one of the following criteria: a) contributes more than 25,000 gallons per day of process wastewater or b) contributes process wastewater that comprises more than 5% of dry weather hydraulic flow to the POTW, or c) is designated by the POTW as having the potential to disrupt operation of the POTW or cause violation of pretreatment standards. 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.

**Table 1: Significant IUs and Categorical IUs**

<b>Company Name</b>	<b>Type of Industrial User</b>
Amphenol APC	Significant IU/Categorical IU (SIU/CIU)
BAE Systems	SIU/CIU
Bronzecraft Corporation	SIU/CIU
Can-One USA	SIU/CIU
Circuit Connect	SIU/CIU
Crane Security Technology Group	SIU/CIU
Mass Design	SIU/CIU
Rapid Finishing	SIU/CIU
Rethz Light Metals	SIU/CIU
Four Hills Landfill	SIU
Harcros Chemical	SIU
Pennichuk Water Works	SIU
Prudential Overall Supply	SIU
Unifirst Corporation	SIU
Granite Forge, LLC	SIU/CIU
JMD Industries, Inc.	SIU/CIU
Masimo Semiconductor, Inc.	SIU/CIU
SGS North America	SIU/CIU

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from February 2019 through January 2024 is provided in Appendix A of this Fact Sheet.

Additionally, EPA is adding one co-permittee to the Draft Permit. The Town of Hudson, NH owns and operates a sanitary wastewater collection system that discharges flows to the Nashua WWTF for treatment. This municipality is a co-permittee for certain activities pertaining to proper operation and maintenance of its respective collection system (See Part I.C. and I.D of the Draft Permit). Adding this co-permittee to the Draft Permit ensures that it complies with requirements to operate and maintain the collection system so as to avoid discharges of sewage from the collection system. This co-permittee did not apply for permit coverage; with a letter sent on April 5, 2024, EPA waived application requirements for this co-permittee. The

legal basis for including municipal satellite collection systems as co-permittees is described in *In re Charles River Pollution Control District*, 16 E.A.D. 623 (EAB 2015)<sup>6</sup>. Although Tyngsborough, MA and Merrimack, NH contribute sanitary wastewater flow to the facility, they are not being included as Co-permittees to this permit as the Town of Tyngsborough is a Co-permittee to the Lowell Regional Wastewater Utilities NPDES permit (MA0100633) and the City of Merrimack, NH has coverage under its own NPDES Permit (NH0100161). Coverage as a co-permittee under the Nashua permit would be duplicative given that the other permits cover the entire collection systems owned by the Town of Tyngsborough and the City of Merrimack regardless of whether it ties into the Nashua WWTF or another WWTF.

As discussed further in Section 5.5.2 below, the historical background and legal framework underlying this co-permittee approach is set forth in Appendix D to this Fact Sheet, *EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems*.

### **3.1.1 Treatment Process Description**

#### **Background**

The original facility was constructed in 1959, underwent an expansion in 1974, was upgraded to secondary treatment in 1989 and upgraded again in 2000 to include anaerobic digestion. Ongoing construction projects include work to mitigate the discharge of untreated wastewater through the City's ten combined sewer overflow (CSO) outfalls into the Merrimack and Nashua Rivers, which are discussed in more detail below.

The Nashua WWTF has one outfall (Outfall 001) through which treated effluent is discharged to the Merrimack River (See Figure 1). Blended effluent, comprised of primary and secondary effluent, is also discharged through Outfall 001 during wet weather events when the flow to the WWTF exceeds the plant's secondary treatment capacity, as described below. The City also owns and operates a Wet Weather Flow Treatment Facility (WWFTF), located adjacent to the wastewater treatment facility. The discharge from this facility combines with secondary and primary effluents (when the secondary treatment process is bypassed) from the WWTF in the chlorine contact tank and is discharged through Outfall 001. The operation of this facility is described in the "Wet Weather Flow" sub-section below.

Discharges of combined sanitary wastewater and stormwater occur from the ten combined sewer overflow outfalls identified above in Table 5 (in Section 5.6 below) when the hydraulic capacity of the wastewater treatment facility/collection system becomes overloaded during storm events. A second CSO treatment facility provides screening and disinfection to combined

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<sup>6</sup> The decision is available at:

[https://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/\\$File/Charles%20River%20Decision%20Vol%2016.pdf](https://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/Published%20and%20Unpublished%20Decisions/F89699D1A0710BCF85257DE200717A93/$File/Charles%20River%20Decision%20Vol%2016.pdf)

flows which currently discharge through CSO Outfall 014. Flows from this facility will discharge to the Merrimack River. These discharges are discussed in further detail in Section 5.6 of this Fact Sheet.

### Treatment Process

The Nashua WWTF uses an activated sludge process to provide secondary treatment to wastewater flows up to its 16 million gallons per day (MGD) annual average design flow capacity and up to its peak flow capacity of 32 MGD. A description of the normal dry weather flow operation of the treatment plant is included immediately below. A process diagram is shown in Figure 2. Facility operations during wet weather events are described later in this section and a corresponding schematic is shown in Figure 3.

#### *Dry Weather Flow*

Influent flows enter the treatment works through the main influent wet well, where larger solids and debris are removed by bar screens to minimize the potential for such objects to damage equipment farther along the process train. The materials removed are washed and conveyed to a closed top container for disposal. Flows are monitored by a magnetic flow meter, which relays the data to the Supervisory Control and Data Acquisition (SCADA) system and are then conveyed to the grit removal building by a force main. Inside the grit chambers, the introduction of coarse bubble aeration serves to decrease the flow velocity, which in turn allows for the settling of large inorganic solids and coarse debris. The settled material is washed and loaded into trucks for disposal at the City's landfill.

Next, the wastewater flows to primary sedimentation basins where the floatable (oil and grease) and settleable solids (sludge) are removed. The floatable solids are directed to a storage tank for disposal and the sludge is pumped to gravity thickeners. The primary effluent flows to the aeration basins, where it comes into contact with activated sludge, which consists of a mixture of biological organisms. Aeration of the wastewater facilitates the growth of aerobic bacteria, which reduce the organic load in the wastewater by converting it to energy and biomass. The wastewater then flows to the secondary clarifiers where suspended material (bacteria and remaining solids) settle out from the liquid portion of the wastewater (effluent). Floatable solids are removed by a rake arm and are pumped back to the WWTF headworks. The settled material, which forms sludge at the bottom of the clarifiers, is collected by rotating rake arms. Most of the collected sludge is pumped back to the aeration tanks as return activated sludge ("RAS") to maintain biological treatment; a smaller portion is pumped to a holding tank for disposal (waste activated sludge, or "WAS"). From the secondary clarifiers, the treated effluent flows into the chlorine contact chambers where liquid sodium hypochlorite is added to kill any pathogenic organisms. A sample of the effluent is continuously analyzed, and the disinfected effluent is dechlorinated with a sodium bisulfite solution prior to discharge. The effluent cascades to the outfall chamber and is discharged to the Merrimack River through Outfall 001.

### *Solids Handling*

The sludges created during the primary and secondary treatment processes are thickened by gravity thickeners and belt thickeners, respectively, to reduce the water content. The thickened sludge is then sent to the anaerobic digester complex. The hydraulic retention time in the 1.3-million-gallon egg-shaped primary digester is approximately 20 days. During this time, the solids are further broken down into carbon dioxide, water and methane gas. The methane is sent to a generator to produce electricity and to a boiler to produce heat for the digestion process. The digested biosolids are then sent to three belt filter presses for dewatering and are then loaded into trucks for distribution to farms within the state for use as a soil enhancer.

### *Wet Weather Flow*

During wet weather events, flows up to 50 MGD are conveyed to the headworks of the wastewater treatment plant, with 32 MGD receiving full secondary treatment. The additional flow (up to 18 MGD) bypasses the secondary treatment process, receiving primary treatment before blending with secondary effluent for disinfection and dechlorination prior to being discharged through Outfall 001, as discussed in further detail below.

Additionally, wet weather-related flows that exceed the 50 MGD primary treatment capacity of the WWTF are diverted to a 60 MGD Wet Weather Flow Treatment Facility (WWFTF), which is located adjacent to the main wastewater treatment plant and commenced operation in 2009. The WWFTF effectively expanded the City's wet weather treatment capacity to 110 MGD, in accordance with the 2017 High Flow Management Plan.

Flow is diverted to the WWFTF when flow through the main facility reaches 50 MGD. Flows above 50 MGD pass over a diversion structure located on the 72" North Merrimack interceptor and enters a 60 MGD pumping facility, which includes a screening facility to protect downstream equipment from being damaged by large objects and coarse debris, pumps the excess flows to the WWFTF, which uses a ballasted flocculation process and consists of two 30 MGD treatment trains. The treatment process utilizes polymers in conjunction with micro sand to form a quick-settling floc. The effluent from the WWFTF is then blended with primary and secondary effluent in the wastewater treatment plant's chlorine contact chamber for disinfection prior to being discharged to the Merrimack River through Outfall 001.

The solids removed during the treatment process undergo vortex separation to recover the micro sand used in the ballasted flocculation process. Any remaining sludge is thickened and introduced into the existing sludge process train, including blending with primary and secondary thickened sludges.

For clarity, EPA considers the WWFTF to be a CSO-related bypass of secondary treatment rather than a CSO discharge for two main reasons.

First, a "POTW Treatment Plant" is that portion of the POTW which is designed to provide

treatment of municipal sewage, and a wet weather “bypass” is a discharge that occurs after receiving at least primary treatment. Given that the WWFTF applies a form of primary treatment (*i.e.*, ballasted flocculation, as described above), the flow bypasses only secondary treatment, before rejoining the treatment train for disinfection. By providing solids removal, primary treatment, and disinfection, the WWFTF operates in accordance with the CSO Policy’s description of a CSO-related bypass. CSO Policy at 18693 (“The CSO-related bypass provision in the permit should also make clear that all wet weather flows passing the headworks of the POTW treatment plant will receive at least primary clarification and solids and floatables removal and disposal, disinfection, where necessary, and any other treatment that can reasonably be provided.”); *see also CSO Permit Writers Guidance*, EPA (1995) (“The CSO Control Policy recommends that the permit require all wet weather flows passing the headworks of the POTW treatment plant to receive at least primary clarification, solids and floatables removal and disposal, disinfection (where necessary), and any other treatment that can reasonably be provided.”).

Second, the WWFTF flow is comingled after primary treatment with the WWTF flow and the blended WWTF and WWFTF flow is chlorinated and discharged through a single outfall (*i.e.*, Outfall 001). A “CSO” is a “discharge from a CSS at a point prior to the POTW Treatment Plant.” CSO Policy at 18689. Here, the WWFTF flow combines with the POTW Treatment Plant flow and ultimately discharges through the same outfall, not a point prior. Therefore, EPA considers that the WWFTF does not match the definition of a typical CSO discharge.

Although it is unique for a bypass to provide a separate form of primary treatment than the main POTW’s primary treatment, based on these unique facts as laid out above, EPA considers the WWFTF to be part of the POTW Treatment Plant and therefore most accurately labeled a CSO-related bypass.

Consistent with 40 CFR § 122.41(m), the Draft Permit prohibits “bypass,” which is the intentional diversion of waste streams from any portion of the treatment facility. Although the 2005 Consent Decree (see Section 5.6. of this Fact Sheet for further discussion of the Consent Decree)<sup>7</sup> addresses the bypass of secondary treatment as an interim enforcement measure to control discharges of untreated wastewater through, this does not amount to permit authorization of such bypass. EPA’s CSO Policy also articulates an approach whereby peak-flow bypass could be approved prospectively in the permit, rather than a on case-by-case basis. See CSO Policy at 18693. The Policy states “[f]or some CSO-related permits, the study of feasible alternatives in the control plan may provide sufficient support for the permit record and for approval of a CSO-related bypass in the permit itself, and to define the specific parameters under which bypass can legally occur.” The CSO Policy enumerates requirements for permittees in order to avail themselves of this approach, including, but not limited to: an LTCP that justifies

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<sup>7</sup> The conditions under which bypasses of secondary treatment at the Nashua WWTF may occur are prescribed in the City’s High Flow Management Plan, dated 2010 (as revised April 28, 2017 “2017 HFMP”), per the 2005 Consent Decree.

the cut-off point for the bypass of treatment; a cost-benefit analysis comparing bypass to CSO-abatement projects; and a no feasible alternatives analysis. *Id.* at 18693-94. Because EPA has not received such information to date, the Draft Permit maintains the regulatory default position of the prohibition of CSO-related bypass.

For monitoring purposes, the Draft Permit refers to Outfall 001 as the discharge of effluent from the WWTF after disinfection into the Merrimack River and is establishing two new internal outfalls. Internal Outfall 01B refers to the flow that has received primary treatment at the WWTF but bypasses secondary treatment (*i.e.*, typically when flows are above 32 MGD up to 50 MGD) before being comingled with secondary effluent. Internal Outfall 01W refers to the flow that has received primary treatment at the WWTF but bypasses secondary treatment (*i.e.*, typically when flows are above 50 MGD up to 110 MGD) before being comingled with any flow from the WWTF in the chlorine contact chamber of the WWTF.

To characterize the volume and frequency of discharge events as well as to ensure that bypasses only occur when necessary, the permit requires monitoring of both internal Outfall 01B and Outfall 01W for the following parameters: date and time of initiation of bypass flow, influent flow at time of initiation (MGD), date and time of termination of bypass flow, influent flow at time of termination (MGD), duration of bypass (hrs), and total volume of bypass flow (MG).

To ascertain the effectiveness of the ballasted flocculation process of the WWTF and to ensure that the treatment provided is equivalent to primary treatment, the permit requires monitoring of both internal Outfall 01B and Outfall 01W for BOD<sub>5</sub> and TSS (both influent and effluent). If this data demonstrates that the WWTF does not provide adequate primary treatment, this information may be used in a future permitting action to reclassify the WWTF as a CSO discharge and revise any related permit requirements accordingly.

All effluent limits (including the effluent flow limit) must be met at end-of-pipe and apply to the comingled effluent after chlorination, including all effluent flow from the WWTF and WWTF.

### **3.1.2 Collection System Description**

The City of Nashua owns and operates a wastewater collection system comprised of 74 percent sanitary sewers, which carry domestic, industrial, and commercial wastewater; and 26 percent combined sewers, which carry domestic, industrial, and commercial wastewater plus stormwater runoff.

A combined sewer system (CSS) is a wastewater collection system which conveys domestic, industrial and commercial sewage and stormwater through a single-pipe system to a wastewater treatment plant. A combined sewer overflow (CSO) is the discharge from a CSS at a point prior to the wastewater treatment plant. CSO discharges occur when the volume of wastewater exceeds the capacity of the CSS or treatment plant (*e.g.*, during heavy rainfall events or snowmelt). Section 5.6 includes further discussion of the CSO infrastructure.

## 4.0 Description of Receiving Water and Dilution

### 4.1 Receiving Water

The Nashua WWTF (Outfall 001) and CSO outfalls 002, 003, 004, 005, and 014 discharge into the Merrimack River (assessment unit ID (AUID) NHRIV700061206-24). The Merrimack River flows to the Plum Island Estuary in Newburyport, Massachusetts. CSO outfalls 006, 007, 008, and 009 discharge to the Nashua River (CSO outfalls 007 and 008 discharge to AUID NHRIV700040402-08 and CSOs 006 and 009 discharge to AUID NHRIV700040402-09).

The Merrimack and Nashua Rivers are classified as a Class B waters 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 segment of the Merrimack River receiving the flow of Outfall 001 and CSO Outfalls 002, 003, 004, 005, and 014 is listed in the final *New Hampshire Integrated List of Waters for the Clean Water Act 2020-2022 Reporting Cycle* ("303(d) List")<sup>8</sup> as a Category 5 "Waters Requiring a TMDL. The pollutants requiring TMDLs are aluminum, pH, and chlorophyll-a.

Neither of the segments of the Nashua River into which CSO outfalls 006, 007, 008, and 009 discharge are listed as a Category 5 water in the Final New Hampshire Year 2020/2022 303(d) List.<sup>7</sup> The status of each designated use is presented in Table 2.

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<sup>8</sup> 2020/2022 State of New Hampshire Section 303(d) Surface Water Quality List. NHDES. February 18, 2022 R-WD-20-18



**Table 1: Summary of Designated Uses and Listing Status**

<b>Merrimack River NHRIV700061206-24: WWTF Outfall 001, CSO Outfalls 01W, 002, 003, 004, 005, 014</b>	
<b>Designated Use</b>	<b>Status</b>
Aquatic Life Integrity (5M)	Not supporting; marginal impairment (AI)
Primary Contact Recreation (5M)	Not supporting; marginal impairment ( <i>E. coli</i> , <i>Chlorophyll-a</i> )
Secondary Contact Recreation	Not supporting; marginal impairment ( <i>E. coli</i> )
Fish Consumption	Not supporting; marginal impairment (Mercury – TMDL completed)
Potential Drinking Water Supply	Full support
Wildlife	Insufficient Information/No data
<b>Nashua River NHRIV700040402-08: CSO Outfalls 007 and 008</b>	
<b>Designated Use</b>	<b>Status</b>
Aquatic Life Integrity (4C-P)	Not supporting (non-pollutant)
Primary Contact Recreation (4A-P)	Not supporting ( <i>E. coli</i> -TMDL Completed)
Secondary Contact Recreation (4A-P)	Not supporting ( <i>E. coli</i> - TMDL Completed)
Fish Consumption (4A-M)	Not supporting; marginal impairment (Mercury – TMDL completed)
Potential Drinking Water Supply (2G)	Full support
Wildlife (3ND)	Insufficient Information/No data
<b>Nashua River NHRIV700040402-09: CSO Outfalls 006 and 009</b>	
<b>Designated Use</b>	<b>Status</b>
Aquatic Life Integrity (4CP)	Not supporting (non-pollutant)
Primary Contact Recreation (4A-P)	Not supporting ( <i>E. coli</i> -TMDL Completed)
Secondary Contact Recreation (2-G)	Full support
Fish Consumption (4A-M)	Not supporting (Mercury – TMDL completed); marginal
Potential Drinking Water Supply (2-G)	Full support
Wildlife 3-ND	Insufficient Information/No data

EPA notes that Merrimack River segments downstream from the Nashua WWTF, over the state line in Massachusetts, also have impairments to which the Nashua WWTF may be contributing<sup>9</sup> as summarized in Table 3.

<sup>9</sup> Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, May 2023.

**Table 2: Impairment Status of MA Water Segments Downstream of Nashua WWTF**

Assessment Unit Name and Description	Assessment Unit ID	Segment Length	Impaired Designated Use	Parameter Name
Merrimack River, State line at Hudson, NH/Tyngsborough, MA to Pawtucket Dam Lowell.	MA84A-01	(9 miles)	Aquatic Life	Fish passage barrier
			Primary and Secondary Contact Recreation	<i>E. coli</i> , fecal coliform
			Fish Consumption	Mercury
Merrimack River Pawtucket Dam, Lowell to Lowell Regional Wastewater Utilities (NPDES# MA0100633) outfall at Duck Island, Lowell.	MA84-02	(3.2 miles)	Aquatic Life	Total phosphorus, fish passage barrier, dewatering
			Primary and Secondary Contact Recreation	<i>E. coli</i>
			Fish Consumption	Mercury
Lowell Regional Wastewater Utilities (NPDES# MA0100633) outfall at Duck Island, Lowell to Essex Dam Lawrence.	MA84-03 (8.8 miles)		Aquatic Life	Total phosphorus, fish passage barrier
			Primary and Secondary Contact Recreation	<i>E. coli</i>
			Fish Consumption	Mercury, PCBs in fish tissue

## 4.2 Ambient Data

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

## 4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water<sup>10</sup>. The critical flow in rivers and streams is some measure of the low flow of that river or stream. New Hampshire WQSs require that:

- (a) The flow used to calculate permit limits shall be specified in (b) through (d), below.

<sup>10</sup> EPA Permit Writer's Manual, Section 6.2.4

- (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. (Env-Wq 1705.2)

The calculated 7Q10 flow is assumed to be at a point just downstream of the Nashua WWTF outfall, per the Dingman method, because the discharger's water source is located within the basin upstream of the discharge.

The dilution factor for the Nashua WWTF was calculated using the following equation:

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

where

$Q_S$  = 7Q10 flow of Merrimack River just downstream of outfall = 742 cfs = 479 MGD

$Q_D$  = design flow of Nashua WWTP = 16 MGD<sup>11</sup>

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

$$\text{Dilution Factor} = 0.9 * (479/16) = \mathbf{26.9}$$

## 5.0 Proposed Effluent Limitations and Conditions

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

### 5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the Permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from February 2019 through January 2024 (the "review period") were used to

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<sup>11</sup> EPA recognizes that the WWTF and WWFTF have the capacity to treat and discharge flows well above 16 MGD during significant wet weather conditions. Given that these conditions likely occur when ambient flows are well above the 7Q10 flow, EPA considers that using the 7Q10 flow and the 16 MGD effluent flow limit (based on the secondary treatment capacity) is a reasonable worst-case assumption when calculating the dilution factor for this discharge.

identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (See Appendix A). The reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

### **5.1.1 Effluent Flow**

The effluent flow in the 2015 Permit is a reporting requirement only. The DMR data during the review period show that the average monthly flow ranged from 8.3 MGD to 15.6 MGD with a median flow of 11.42 MGD. The flow reporting requirement has been changed in the Draft Permit to an effluent limit, expressed as a rolling average, which reflects the facility's design flow of 16 MGD. 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.

Further justification for the effluent flow limit can be found in Section 2.3 above.

### **5.1.2 Biochemical Oxygen Demand (BOD<sub>5</sub>)**

#### **5.1.2.1 BOD<sub>5</sub> Concentration Limits**

The average monthly and average weekly BOD<sub>5</sub> concentration limits in the 2015 Permit were based on the secondary treatment standards in 40 CFR § 133.102 and included as an average monthly limit of 30 mg/L, and an average weekly limit of 45 mg/L. The daily maximum limit of 50 mg/L was included as a state certification in the previous permit.

The DMR data during the review period shows that there have been two violations of the average weekly concentration limit and four violations of the daily max concentration limit. There were no violations of the average monthly concentration limit.

In this permit reissuance, EPA is removing the daily maximum BOD<sub>5</sub> and TSS concentration and mass limits because inclusion of these daily limits for a permittee that has active CSOs (such as Nashua) could, on occasion, serve as a disincentive to maximize flow to the POTW for treatment (in accordance with one of the Nine Minimum Controls described in Section 5.6 below) to avoid violating these BOD<sub>5</sub> and TSS maximum daily limits. Conversely, removal of these daily limits allows the Permittee to maximize flow to the WWTF instead of discharging additional untreated wastewater through CSOs. EPA does not expect this to result in any negative impact to water quality with respect to BOD<sub>5</sub> or TSS given that the Permittee must still comply with BOD<sub>5</sub> and TSS monthly and weekly limits. In fact, this change is more likely to result in an overall improvement of water quality and protection of human health for the reason described above. EPA notes that NHDES no longer requires the inclusion of the daily maximum BOD<sub>5</sub> and TSS limits as a state certification requirement. Further, removal of the daily maximum BOD<sub>5</sub> and TSS limits is consistent with the Region's approach for CSO facilities elsewhere. See,

e.g., Response to Comments for Final Permit for City of Lowell, Massachusetts, NPDES No. MA0100633 (2019), at 19-20.

As noted above, the daily maximum limits were state certification requirements (as noted in the 2013 Fact Sheet at 12) based on best professional judgment and, therefore, were established as technology-based effluent limits (“TBELs”). Inclusion of daily limits as TBELs for TSS and BOD<sub>5</sub>, however, is plainly inconsistent with EPA’s secondary treatment regulations, which establish weekly and monthly limits, but not daily limits. See 40 C.F.R. § 133.102. 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). This is not to say daily limits cannot be used in POTW permitting; indeed, EPA’s *Technical Support Document for Water Quality-based Toxics Control* (“TSD”) recommends using daily limits “for toxic pollutants and pollutant parameter in water quality permitting.” TSD at 96. However, given that TSS and BOD<sub>5</sub> are conventional pollutants and not toxics, the application of daily limits based on the TSD would not be appropriate. But these daily limits were established as TBELs, not water quality-based effluent limitations (“WQBELs”). Therefore, EPA concludes that these daily maximum TBEL limits were based on a mistake of both a technical and legal nature, thus covered by the anti-backsliding exception at Section 402(o)(2)(D).

The Draft Permit proposes the same monthly average and weekly average BOD<sub>5</sub> concentration limits as in the 2015 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency has been modified to 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 BOD<sub>5</sub> Mass Limits**

The mass-based BOD<sub>5</sub> limits in the 2015 Permit are based on the concentration limits noted above and were calculated using the design flow of the facility, which is 16 MGD. These limits are a monthly average limit of 4,006 lb/day, a weekly average limit of 6,008 lb/day, and a daily maximum limit of 6,676 lb/day.

The DMR data from the review period shows that there have been eighteen violations of the daily maximum mass limit. There were no violations of the average monthly and average weekly mass limits.

For the reasons described in Section 5.1.2.1 above, EPA is removing the daily maximum BOD<sub>5</sub> and TSS limits in this permit reissuance.

The monthly average and weekly average mass-based BOD<sub>5</sub> limits were calculated based on the design flow of the facility and the concentration limits shown above, as shown below.

BOD<sub>5</sub> Mass Loading Calculations:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lb/day

C<sub>d</sub> = Maximum allowable effluent concentration for reporting period in mg/L  
(reporting periods are average monthly and average weekly)

Q<sub>d</sub> = Annual average design flow of Facility

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

Average Monthly: 30 mg/L \* 16 MGD \* 8.345 = 4,006 lb/day

Average Weekly: 45 mg/L \* 16 MGD \* 8.345 = 6,008 lb/day

The Draft Permit proposes the same average monthly and average weekly BOD<sub>5</sub> mass limits as those in the 2015 Permit. The monitoring frequency has been modified to 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 average monthly and average weekly TSS concentration limits in the 2015 Permit were based on the secondary treatment standards in 40 CFR § 133.102 and included as an average monthly limit of 30 mg/L, and an average weekly limit of 45 mg/L. The daily maximum limit of 50 mg/L was included as a state certification requirement.

The DMR data during the review period shows that there has been 1 violation of the average monthly concentration limit, two violations of the average monthly concentration limit and twelve violations of the daily max concentration limit.

For the reasons described in Section 5.1.2.1 above, EPA is removing the daily maximum BOD<sub>5</sub> and TSS limits in this permit reissuance.

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

#### **5.1.3.2 TSS Mass Limits**

The mass-based TSS limits in the 2015 Permit are based on the concentration limits noted above and were calculated using the design flow of the facility, which is 16 MGD. These limits

are a monthly average limit of 4,006 lb/day, a weekly average limit of 6,008 lb/day, and a daily maximum limit of 6,676 lb/day.

The DMR data from the review period shows that there has been one violation of the average monthly mass limit, three violations of the average weekly mass limit and twenty-four violations of the maximum daily mass limit.

For the reasons described in Section 5.1.2.1 above, EPA is removing the daily maximum BOD<sub>5</sub> and TSS limits in this permit reissuance.

These mass-based average monthly and average weekly TSS limits were calculated based on the design flow of the facility and the concentration limits shown above, as shown below.

TSS Mass Loading Calculations:

$$L = C_d * Q_d * 8.345$$

Where:

L = Maximum allowable load in lb/day

C<sub>d</sub> = Maximum allowable effluent concentration for reporting period in mg/L  
(reporting periods are average monthly and average weekly)

Q<sub>d</sub> = Annual average design flow of Facility

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

Average Monthly: 30 mg/L \* 16 MGD \* 8.345 = 4,006 lb/day

Average Weekly: 45 mg/L \* 16 MGD \* 8.345 = 6,008 lb/day

The Draft Permit proposes the same average monthly and average weekly TSS mass limits as those in the 2015 Permit. The monitoring frequency has been modified to twice per week, which is consistent with EPA/NHDES-WD Effluent Monitoring Guidance for facilities not using lagoons or sand filters for secondary treatment.

### **5.1.3.3 Eighty-Five Percent (85%) BOD<sub>5</sub> and TSS Removal Requirement**

In accordance with the provisions of 40 CFR § 133.102(a)(3) and (b)(3), the 2015 Permit requires that the 30-day average percent removal for BOD<sub>5</sub> and TSS be not less than 85%. The DMR data during the review period shows that the median BOD<sub>5</sub> and TSS removal percentages are 94% and 97%, respectively. There were no exceedances of the 85% removal requirement for BOD<sub>5</sub> or TSS during that period.

The requirement to achieve 85% BOD<sub>5</sub> and TSS removal has been carried forward into the Draft Permit and will continue to apply only during dry weather.

Dry weather is defined as any calendar day on which there is less than 0.1 inch of rainfall, no snow melt (which occurs on a day in which the temperature is greater than 32° F), and 24 hours after a distinct rainfall event (defined as a rainfall event having at least a 10-hour window with no precipitation of > 0.01”) to allow the storm-related flow to pass through the collection system and WWTF (as recorded by a hydrograph). The percent removal shall be calculated as a monthly average using the influent and effluent BOD<sub>5</sub> and TSS values collected during dry weather days.

#### **5.1.4 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 six (6) exceedances below 6.5 S.U. range minimum. There were no exceedances above the S.U. range maximum.

The pH requirements in the 2015 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

#### **5.1.5 Bacteria**

The 2015 Permit includes effluent limits for bacteria using *Escherichia coli* (*E. coli*) bacteria as the indicator bacteria to protect recreational uses. NH WQS at Env-Wq 1700, Appendix E require a monthly geometric mean of 126 *E. coli* /100 ml and a maximum daily limit of 406 *E. coli*/100 ml. The DMR data during the review period shows that there were six (6) exceedances of the daily maximum limit. There were no exceedances of the monthly geometric mean.

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

#### **5.1.6 Total Residual Chlorine**

The Permittee uses chlorine disinfection. The 2015 Permit includes effluent limitations for total residual chlorine (TRC) of 0.31 mg/L (average monthly) and 0.54 mg/L (maximum daily). The DMR data during the review period show that there was one exceedance of the maximum daily TRC limitation and no exceedances of the average monthly TRC limitation.

The TRC permit limits are based on the instream chlorine criteria defined in *National Recommended Water Quality Criteria: 2002*, EPA 822R-02-047 (November 2002), as adopted by the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1. These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the



upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor, as follows:

Chronic criteria \* dilution factor = Chronic limit

$11 \mu\text{g/L} * 26.9 = 300 \mu\text{g/L} = 0.3 \text{ mg/L}$  (average monthly)

Acute criteria \* dilution factor = Acute limit

$19 \mu\text{g/L} * 26.9 = 510 \mu\text{g/L} = 0.51 \text{ mg/L}$  (maximum daily)

These limits are included in the Draft Permit and are slightly more stringent than the limits in the 2015 Permit due to the decreased dilution factor. Monitoring shall be once per day to ensure compliance with the bacteria limits even during wet weather events when portions of the flow bypass secondary treatment.

### 5.1.7 Ammonia

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

Ambient data, taken upstream of the Nashua WWTF outfall in the Merrimack River, is presented in Appendix A and shows the median concentration for the warm weather period (April 1 through October 31) is 0.091 mg/L.

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

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

To determine the applicable ammonia criteria, EPA assumes a warm weather (May through October) temperature of 25° C and a cold weather (November through April) temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.0 S.U. Additionally, the Merrimack River downstream of the discharge is within Essential Fish Habitat (EFH) for Atlantic salmon (*Salmo salar*), so EPA has assumed that salmonids could be present in the receiving water.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is no

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

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

### **5.1.8 Nutrients**

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

#### **5.1.8.1 Total Nitrogen**

The Merrimack River is a large and densely populated watershed including 40 POTW discharges in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion. Recent nitrogen data collected by CDM Smith in 2014 and 2016 in the estuarine portions of the Merrimack River indicates elevated total nitrogen and chlorophyll 'a' levels. High nutrient concentrations can lead to increased levels of chlorophyll 'a', therefore chlorophyll 'a' can be an indicator of elevated nutrient concentrations. In samples with salinity greater than 10 ppt, total nitrogen ranged from 0.442 to 1.67 mg/L while chlorophyll 'a' ranged from 4 to 42 ppt.<sup>12</sup> EPA also collected samples on the outgoing tide in 2017 in this area and found total nitrogen levels in the range of 0.62 mg/L to 1.3 mg/L and chlorophyll 'a' ranging from 2 to 11 ppt in samples with salinity greater than 10 ppt. EPA also collected data in 2018 and 2019 that showed similarly elevated levels of nitrogen in the estuarine portion of the Merrimack River. EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of these results are outside the range typically found in healthy estuaries in Massachusetts.<sup>13</sup> However, more data is necessary to determine whether there is reasonable potential for nitrogen discharges from the facility to cause or contribute to a violation of the narrative nutrient criteria in the Merrimack River estuary, particularly data that characterizes aquatic life designated uses that may be affected in this area so that the narrative criteria can be interpreted numerically. Based on this ambient data, EPA began in 2019 to establish effluent monitoring requirements in the 40

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<sup>12</sup> CDM Smith/US Army Corps of Engineers New England District, Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017, Appendix C.

<sup>13</sup> Howes, Brian, et al, Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report, Massachusetts Estuaries Project, December 22, 2003.

POTWs in the Merrimack River watershed. Nashua is one of the last of these POTWs to receive this requirement. Once these POTWs are all submitting nitrogen data, EPA will evaluate their impact and may establish effluent limitations, should they be necessary. In the meantime, EPA finds that quantifying the load of total nitrogen from this facility and others in the Merrimack River watershed is an important first step to understanding the nitrogen load from point sources and their potential impact on the estuary.

The Draft Permit includes weekly monitoring and reporting requirements for total nitrate plus total nitrite, total Kjeldahl nitrogen (TKN) and total nitrogen from April through October and monthly monitoring and reporting from November through March. The monitoring data will provide additional information on the fate of nitrogen through the treatment process and the impact to the Merrimack River in the estuary at the mouth of the river.

#### **5.1.8.2 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;<sup>14</sup> 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."

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<sup>14</sup> "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.

Env-Wq 1703.14(c), further states that, “Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.” Cultural eutrophication is defined in Env-Wq 1702.15 as, “... the human-induced addition of wastes containing nutrients which results in excessive plant growth and/or decrease in dissolved oxygen.” Cultural eutrophication also results in violations of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors and surface scum. The NH WQS at Env-Wq 1703.07(b)(2) require that dissolved oxygen have an instantaneous minimum concentration of at least 5 mg/L in Class B waters. Further, NH WQS at Env-Wq 1703.12(b) states that Class B waters “shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring.” Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

Because the Nashua WWTF outfall is only 3.2 miles upstream of the New Hampshire/Massachusetts border, EPA is also considering whether the discharge may be contributing to impairments in Massachusetts.

The MA WQS under 314 CMR 4.05(5)(c) requires that, unless naturally occurring, surface waters must be free from nutrients that cause or contribute to impairment of the existing or designated uses, and the concentration of phosphorus may not exceed site specific criteria developed in a TMDL. Nutrients are also prohibited in concentrations that would cause or contribute to cultural eutrophication. 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 MA WQS at 314 CMR 4.05(3)(b)(1) requires that dissolved oxygen not be less than 6.0 mg/L in cold water fisheries or 5.0 mg/L in warm water fisheries. Further, the MA WQS at 4.05(3)(b)(5), (6) and (8) state that waters must be free from “floating, suspended, and settleable solids,” free from “color and turbidity in concentrations or combinations that are aesthetically objectionable...”, and have no taste and odor “in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.” To prevent cultural eutrophication, the MA WQS at 4.05(5)(c) states that “Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses.” Also see Part 2.2.2 of this Fact Sheet above regarding antidegradation and existing uses which may be impacted by nutrient over-enrichment.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be

difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit, and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

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

EPA has produced several guidance documents, described below, that recommend a range of total ambient phosphorus concentrations that are sufficiently stringent to control cultural eutrophication and other adverse nutrient-related impacts, with 0.1 mg/L representing the upper end of this range. These guidance documents recommend protective in-stream phosphorus concentrations based on two different analytical approaches. An effects-based approach provides a threshold value above which adverse effects (*i.e.*, water quality impairments) are likely to occur. This approach applies empirical observations of a causal variable (*i.e.*, phosphorus) and a response variable (*i.e.*, chlorophyll-a as a measure of algal biomass) associated with designated use impairments. Alternatively, reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregion class. They are a quantitative set of river characteristics (physical, chemical and biological) that represent conditions in waters in that ecoregion that are minimally impacted by human activities (*i.e.*, reference conditions), and thus by definition representative of water without cultural eutrophication. Dischargers in Massachusetts and New Hampshire are located within either Ecoregion VIII, Nutrient-Poor, Largely Glaciated Upper Midwest and Northeast or Ecoregion XIV, Eastern Coastal Plains. The recommended total phosphorus criteria for these ecoregions are 10 µg/L and 31.25 µg/L, respectively. While reference conditions reflect in-stream phosphorus concentrations that are sufficiently low to meet the requirements necessary to support designated uses, they may also represent levels of water quality beyond what is necessary to support such uses.

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

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

Sampling data from 2018<sup>15</sup>, summarized in Table 4, reported summer in-stream phosphorus concentrations collected at Station MER-WWTF-DOWN located 4.8 miles upstream of the Nashua WWTF. EPA considers these results to be the best available data to characterize the upstream receiving water at this time, although the permit requires ambient phosphorus monitoring as discussed further below.

**Table 3: Instream total phosphorus concentrations (mg/L)**

	MER-WWTF-DOWN 4.8 miles upstream of Nashua WWTF
6/21/2018	ND
7/5/2018	0.044
7/9/2018	0.052
7/31/2018	0.054
8/27/2018	0.045
9/12/2018	0.042
9/24/2018	0.23
10/10/2018	0.038

As noted in Section 1.0 above, the total phosphorus limit in the 2015 Permit was appealed and never took effect. 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.

Based on the phosphorus criterion described above, the ambient data presented above, the upstream 7Q10 flow, and the design flow of the Facility, Appendix B presents the details of the mass balance equation, the determination of whether there is reasonable potential to cause or contribute to an excursion of WQS and, if necessary, the limits proposed in the Draft Permit WQS. As shown, it was determined that the downstream concentration is 89 µg/L which does not exceed the instream target of 90 µg/L. Therefore, there is no reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose a phosphorus limit.

Although EPA is not proposing a total phosphorus limit for this permit issuance, the downstream phosphorus impairments in the Merrimack River in Massachusetts highlight the

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<sup>15</sup> Reardon, Matthew, MassDEP, Division of Watershed Management, 2013, "Technical Memorandum: Big River Watershed 2008 DWM Water Quality Monitoring Data," DWM Control Number CN 323.1.

possibility that a limit may be necessary in future permit reissuances. The Draft Permit includes a year-round total phosphorus reporting requirement of twice per month to ensure sufficient data are available in the future to reassess the impact of phosphorus from this facility.

Additionally, the Draft Permit also includes ambient monitoring requirements to ensure that current phosphorus data are available to use in the reassessment of the total phosphorus effluent in the next permitting cycle. Note that these data will be used in the next permit reissuance, along with any other relevant information available at that time, to reevaluate whether a limit may be necessary to protect WQS.

### **5.1.9 Metals**

#### **5.1.9.1 Applicable Metals Criteria**

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

The criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent using the equations found in NH Env Wq-1703. The estimated hardness of the Merrimack 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 27.6 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.

#### **5.1.9.2 Reasonable Potential Analysis and Limit Derivation**

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass

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

For any metal with an existing limit in the 2015 Permit, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration ( $C_e$ ) allowable to meet WQS based on current conditions. As noted in Section 1.0 above, the copper and lead limits in the 2015 Permit were appealed and never took effect.

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, nickel, and zinc, so the Draft Permit does not propose any new limits for these metals. There is however RP for the discharge to violate the chronic WQC for lead, but not for the acute WQC for lead. Therefore, a monthly average limit of 1.8  $\mu\text{g/L}$  has been established for total lead with a twice per month monitoring requirement.

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

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

#### **5.1.10 Toxicity**

As discussed in Section 2, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs, including not only numeric criteria but also both narrative criteria



to protect designated uses. 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)).

#### Whole Effluent Toxicity Testing

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.

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<sub>50</sub>. This policy recommends that permits for discharges having a dilution factor between 20 and 100 require acute toxicity testing four times per year for two species. Additionally, for discharges with dilution factors between 20 and 100, the LC<sub>50</sub> limit should be greater than or equal to 100%. However, the frequency has been reduced in the past to two WET tests per year with two species.

The acute WET limit in the 2015 Permit is an LC<sub>50</sub> greater than or equal to 100%, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. The Facility has consistently met these limits with the exception of one value of 70.7% for the fathead minnow in September of 2023 (Appendix A).

Based on the potential for toxicity from domestic and industrial contributions, the state narrative water quality criterion, the dilution factor of 26.9, and the recent LC<sub>50</sub> result, EPA has decided to propose a change in the WET testing requirement in the Draft Permit. Rather than

carrying forward two LC<sub>50</sub> tests per year for two species, EPA has decided to require quarterly LC<sub>50</sub> tests for two species. Given the large size of this WWTF with a variety of industrial sources, EPA considers that quarterly WET testing is necessary in order to ensure that the discharge does not cause acute toxicity throughout the year as sources may change seasonally. EPA chose to maintain the fathead minnow as the test species given that it has been demonstrated to be more sensitive to Nashua's effluent (*i.e.*, the DMR results show one recent excursion of the LC<sub>50</sub> limit for the fathead minnow and no excursions for the daphnid). Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedures and protocols specified in Attachment B, *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011) of the Draft Permit.

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

*WET Re-Test and Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE)*

To ensure the receiving water is free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife, throughout the permit term, EPA has incorporated additional WET requirements described below.

The Permittee shall conduct at least two accelerated re-tests at 14-day intervals which must be started within 14 days and 28 days of receiving the following results:

- any WET test results in a violation of any WET limit and the test acceptability criteria were met (only re-test for the species that failed); or
- the Permittee identifies or is provided notice of a sudden and significant death of large numbers of fish and/or shellfish in the vicinity of the discharge (test for all species identified in permit).

If the receiving water was used as the dilution water and is suspected to be toxic (*e.g.*, based on results from the initial test), the Permittee shall conduct the accelerated WET tests using laboratory water as the dilution water with a similar pH and hardness as the receiving water. If the WET tests using laboratory water do not violate any WET limits, the Permittee shall return to a normal monitoring frequency but should request to continue to use laboratory water as the dilution water based on these results. If either accelerated WET test violates any WET limits (and the test acceptability criteria were met), the discharge is considered to have persistent toxicity and the Permittee must immediately initiate a Toxicity Identification Evaluation and Toxicity Reduction Evaluation (TIE/TRE) in accordance with subpart b below to resolve any toxic impacts on the receiving water.

The details of these requirements are presented in the Draft Permit and were developed based on guidance available in EPA's *2024 NPDES WET Permit Writers' Manual*<sup>16</sup>. EPA notes that the results of the TIE/TRE might also lead to additional, future NPDES permit controls, such as additional WET permit limits, chemical-specific permit limits, or a compliance requirement to reduce or eliminate toxicity.

#### Annual Chemical Monitoring

As noted above, 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)).

Given that there are other sources of toxic effects (including to human health) that may not be captured by WET testing, EPA has included additional chemical monitoring in the Draft Permit. To ensure that the Permittee and EPA are aware of any changes in the chemical characteristics of the discharge that might merit a review of the water quality-based effluent limits, as authorized by Section 402(a)(2) of the CWA and 40 CFR § 122.48, the Draft Permit proposes additional monitoring requirements for a broad range of contaminants. Specifically, EPA has included requirements for annual monitoring of both the effluent and the receiving water immediately upstream of the discharge (taken on the same day during the third calendar quarter to capture relatively low flow conditions) for all the pollutants in Attachment F of the permit (which is based on the current NPDES Application Form 2A Tables B and C). All effluent and ambient results shall be reported in NetDMR for the quarterly DMR report due by October 15 of each year.

These data will provide assurance that the pollutant loading from the WWTF outfall characterized in the most recent permit application, and the ambient conditions upon which the analyses in this permit reissuance were based, have not changed to a degree that would merit new or more stringent water quality-based effluent limits (WQBELs) during the permit term based on numeric or narrative WQS effective at that time.

In addition, the broad range of pollutants in this new monitoring requirement includes many common toxic pollutants. This monitoring will ensure that the sublethal effects of pollutants that are present in the effluent can be considered by the Permittee and by EPA in future permitting decisions or, as necessary to support a TIE/TRE.

#### **5.1.11 Aesthetics, Solids and Oil & Grease**

New Hampshire surface water quality standards include several narrative requirements related to aesthetics, solids and oil & grease, as follows:

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<sup>16</sup> Available at: <https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf>

Env-Wq 1703.03(c)(1) – All surface waters shall be free from substances in kind or quantity that...

- a. Settle to form harmful benthic deposits;
- b. Float as foam, debris, scum or other visible substances;
- c. Produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses;

Env-Wq 1703.03(c)(3) – Tainting substances shall not be present in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

Env-Wq 1703.09(b) – Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses.

Env-Wq 1703.10(b) – Class B waters shall contain no color in such concentrations that would impair any existing or designated uses, unless naturally occurring.

Env-Wq 1703.12(b) – Class B waters shall contain no slicks, odors, or surface floating solids that would impair any existing or designated use, unless naturally occurring.

Env-Wq 1703.11(b) Turbidity. Class B waters shall not exceed naturally occurring conditions by more than 10 NTUs.

To ensure compliance with these narrative water quality standards, Part I.A.1 of the Draft Permit includes a reporting requirement for “Aesthetics” and a footnote which more specifically requires the following monitoring requirements.

Once per month, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes in the receiving water that may be caused by the discharge as follows:

- 1) any observable change in odor,
- 2) any visible change in color,
- 3) any visible change in turbidity,
- 4) the presence or absence of any visible floating materials, scum or foam,
- 5) the presence or absence of any visible settleable solids,
- 6) the presence or absence of any visible film or sheen on the surface of the water.

Although there is no objective means to measure the impact of the discharge on the taste of the receiving water, the Permittee shall report to EPA and NHDES any complaints it receives from the public regarding taste and/or odor and document what remedial actions, if any, it took to address such complaints.

The results do not need to be submitted each month. Rather, an annual summary of all 12 monthly results shall be submitted as an electronic attachment to the December DMR by each January 15<sup>th</sup> for the previous calendar year.

If an oily sheen is observed on the surface of the water in the vicinity of the outfall during the monthly visual inspection, the Permittee shall follow the procedures described in Part I.G.4 of the permit related to accelerated WET testing.

#### **5.1.12 Benthic Survey**

New Hampshire surface water quality standards address bottom pollutants at Env-Wq 1703.03(c)(1) which requires “All surface waters shall be free from substances in kind or quantity that: a. Settle to form harmful benthic deposits;” and at Env-Wq 1703.08(b) which states that Class B waters “shall contain no benthic deposits that have a detrimental impact on the benthic community, unless naturally occurring.”

To ensure compliance with these standards, the Draft Permit requires a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. The Draft Permit proposes a requirement of one such survey this permit term during the third calendar quarter that begins at least 12 months from the effective date of the permit. The third calendar quarter represents the season of relatively low flow when the discharge has less dilution and is, therefore, more likely to impact the benthic population. The initial 12 months of the permit term allows the Permittee sufficient time to plan for this survey after permit issuance while ensuring results are available relatively soon in case further action is needed to protect the benthic population. The results of the benthic survey will assist EPA in the development of any future permit conditions needed to ensure compliance with the water quality standards referenced above.

The permit requires benthic grab samples to be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.

In order to ensure scientifically defensible results, taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).

A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

#### 5.1.13 Per- and polyfluoroalkyl substances (PFAS)

As explained at <https://www.epa.gov/pfas>, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, 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.<sup>17</sup> EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

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

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

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

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and consistent with recent EPA guidance,<sup>18</sup> the Draft Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users. The quarterly monitoring shall begin the first full calendar quarter beginning six months after the effective date of the permit. The

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<sup>17</sup> 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](https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf)

<sup>18</sup> Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 2022, Subject: "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs." Available at: [https://www.epa.gov/system/files/documents/2022-12/NPDES\\_PFAS\\_State%20Memo\\_December\\_2022.pdf](https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf)

annual monitoring for certain industrial users shall begin the first full calendar year following the effective date of the permit.

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

“SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—

(A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;”.

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

In the absence of a final 40 CFR § 136 method for measuring PFAS in wastewater and sludge, the Draft Permit requires the use the multi-lab validated Method 1633<sup>19</sup>. Monitoring should include each of the 40 PFAS parameters detectable by Method 1633 (see Draft Permit Attachment E for list of PFAS parameters) and the monitoring frequency is quarterly. Reporting of all 40 PFAS analytes is necessary to address the emerging understanding and remaining uncertainties regarding sources and types of analytes of PFAS in wastewater and their impacts. While NHDES has currently adopted MCLs for only 4 of these analytes as described above, it is possible that MCLs, water quality criteria and/or effluent limitation guidelines could be adopted for many of the other 36 analytes measured by Method 1633 during the life of the permit. Therefore, EPA considers it prudent to require reporting for all 40 analytes that are measured using Method 1633 to ensure EPA has sufficient data to address each of these PFAS analytes in the future. This level of monitoring is recommended in EPA’s *October 2021 PFAS Strategic*

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<sup>19</sup> <https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas#method-1633>

*Roadmap*<sup>20</sup> and in an EPA memo dated December 5, 2022, called *Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs*.<sup>21</sup>

All PFAS results must be reported on DMRs (see 40 CFR § 122.41)(l)(4)(i)). This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

Additionally, EPA has recently published Method 1621<sup>22</sup> to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such as pesticides and pharmaceuticals. The Permittee shall monitor Adsorbable Organic Fluorine using Method 1621 once per quarter concurrently with PFAS monitoring to screen for a broader range of these types of emerging contaminants. This requirement also takes effect the first full calendar quarter following six months after the effective date of the permit.

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

## 5.2 Industrial Pretreatment Program

The Permittee is 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 17, 1990 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

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<sup>20</sup> [https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap\\_final-508.pdf](https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf)

<sup>21</sup> [https://www.epa.gov/system/files/documents/2022-12/NPDES\\_PFAS\\_State%20Memo\\_December\\_2022.pdf](https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf)

<sup>22</sup> <https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas#method-1621>



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 1<sup>st</sup>, a pretreatment report detailing the activities of the program for the twelve-month period ending 60 days prior to the due date.

### **5.3 Sludge Conditions**

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

### **5.4 Infiltration/Inflow (I/I)**

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

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

## **5.5 Operation and Maintenance**

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

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

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

### **5.5.2 Operation and Maintenance of the Sewer System**

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

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

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

Because the Town of Hudson owns and operates a collection system that discharges to the Nashua WWTF, it has been included as co-permittee for the specific permit requirements

discussed in the paragraph above. The historical background and legal framework underlying this co-permittee approach is set forth in Appendix D to this Fact Sheet, *EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems*.

## 5.6 Combined Sewer Overflows

### Description and History

The City of Nashua owns and operates a wastewater collection system comprised of 74 percent sanitary sewers, which carry domestic, industrial, and commercial wastewater; and 26 percent combined sewers, which carry domestic, industrial, and commercial wastewater plus stormwater runoff. Nashua's wastewater collection system consists of ten pumping stations and approximately 290 miles of sewers, with approximately 100 miles being combined sewers and 190 miles being sanitary sewers. In addition to serving Nashua, The WWTF serves portions of Hudson and Merrimac, New Hampshire, as well as Tyngsboro, Massachusetts.

The system currently has 9 CSO outfalls which discharge to the Merrimack River and the Nashua River, as shown Table 5 below and in Figure 4 at the end of this Fact Sheet.

**Table 4: Description of Nashua's CSO Outfalls**

Outfall No.	Name	Latitude	Longitude	Receiving Water
002	Salmon Brook	42°44'50"	71°26'23"	Merrimack River
003	Farmington Rd.	42°44'21"	71°26'23"	Merrimack River
004	Burke St.	42°45'13"	71°26'25"	Merrimack River
005	East Hollis St.	42°45'48"	71°26'40"	Merrimack River
006	Nashua River	42°45'57"	71°27'03"	Nashua River
007	Tampa St.	42°45'44"	71°28'39"	Nashua River
008	Broad St.	42°16'09"	71°29'17"	Nashua River
009	Locke St.	42°46'01"	71°27'21"	Nashua River
014	Screening/Disinfection	42°45'51"	71°26'40"	Merrimack River

CSO discharge data summaries from 2019-2023 are shown in Appendix E.

The City of Nashua submitted to EPA and NHDES a Long-Term Combined Sewer Overflow (CSO) Control Plan (LTCP) in 1997 (which was amended in 2003, 2004 and 2021) which included recommended specific levels of CSO control for each outfall. The City entered into a Consent Decree with EPA and NHDES concerning sanitary sewer overflows (SSOs) and CSOs (Civil Action No. 05-376-PB) on December 26, 2005 (as amended on March 31, 2009; "Consent Decree"). The overall goal of the Consent Decree is to ultimately bring all wet weather discharges from CSOs into compliance with the requirements of the CWA and applicable state water quality standards. The main elements of the Consent Decree include: milestones for achieving levels of CSO control which are expected to result in no discharges of untreated CSOs during a typical

year<sup>3</sup>, the development and implementation of a High Flow Management Plan (HFMP) for optimizing the treatment of wet-weather flows as well as interim limits and conditions for flows that bypass secondary treatment; the development and implementation of a program for the preventative maintenance of the collection system; and investigation into the sources and quantities of excessive infiltration and inflow (I/I) to the collection system.

Since the submittal of these documents, additional studies have been conducted to investigate more cost-effective measures to control CSOs. These studies have resulted in modifications to some of the originally recommended elements and associated implementation schedules contained in the CSO Consent Decree. Consistent with the Consent Decree, Nashua has implemented the following CSO controls to mitigate the impact of its CSOs on the Merrimack and Nashua Rivers: construction and completion of several sewer separation projects, construction of two wet weather treatment facilities (Wet Weather Flow Treatment Facility which is adjacent to the main WWTF and a Screening and Disinfection Facility at CSO outfall 014) and system optimization measures at CSO regulators.

In June 2021, the City submitted to EPA a CSO *Long Term Control Plan Update/Integrated Plan* (Integrated Plan). The Integrated Planning approach enables municipalities to provide perspective to CSO control needs, in relation to needs associated with all other Clean Water Act initiatives (including upgrades at the WWTP) and incorporates overall affordability of the City and its ratepayers. The Integrated Plan contains the following elements: Existing conditions characterization, hydrologic/hydraulic model improvements and calibration, CSO control alternatives analysis and modeling, development of capital project prioritization and implementation schedule strategies, knee-of-the-curve (KOC) cost-benefit analysis, financial capability assessment and affordability analysis, and an implementation plan and post-construction monitoring plan.

### Regulatory Framework

CSOs are point sources subject to NPDES permit requirements for both water-quality based and technology-based requirements but are not subject to the secondary treatment regulations applicable to publicly owned treatment works in accordance with 40 CFR §133.103(a). Section 301(b)(1)(C) of the Clean Water Act of 1977 mandated compliance with water quality standards by July 1, 1977. Technology-based permit limits must be established for best conventional pollutant control technology (BCT) and best available technology economically achievable (BAT) based on best professional judgment (BPJ) in accordance with Section 301(b) and Section 402(a) of the Water Quality Act Amendments of 1987 (WQA). The framework for compliance with Clean Water Act requirements for CSOs is set forth in EPA's National CSO Control Policy, 59 Fed. Reg. 18688 (1994). It sets the following objectives:

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

and

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

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

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

The CSO Policy also recommended that each community that has a combined sewer system develop and implement a long-term CSO control plan (“LTCP”) that will ultimately result in compliance with the requirements of the CWA. Most recently, as described above, the City submitted an updated LTCP as part of its Integrated Plan.

In accordance with the Clean Water Act and the CSO Policy, the untreated CSOs, and the CSOs from the CSO Treatment Facilities are not subject to the secondary treatment standards that apply to the POTW treatment plant but are required to achieve technology-based requirements as defined in the CSO policy (the Nine Minimum Controls at a minimum) and limitations necessary to achieve water quality standards. Therefore, the Draft Permit includes applicable technology and water quality-based limitations on discharges from the CSO Treatment Facilities: Outfalls 011 and 013. In addition, the Draft Permit includes monitoring requirements which will provide information necessary for evaluating the effectiveness of the CSO Treatment Facilities use as CSO control measures.

### Permit Requirements

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

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

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

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

(iv) The permittee shall review its entire NMC program and revise it as necessary.

Documentation of this review and any resultant revisions made to the NMC program shall be submitted to EPA and NHDES within 6 months of the effective date of the permit. An annual report shall be provided by April 30<sup>th</sup> of each year which describes any subsequent revisions made to the NMC program and shall also include monitoring results from CSO discharges, and the status of CSO abatement projects.

### Aesthetics

To ensure that the CSO outfalls also comply with the New Hampshire narrative water quality standards presented in Section 5.1.11 above, the Draft Permit includes two requirements below that apply to each CSO outfall.

1. The discharge shall not cause a change in color or odor or result in visible floating materials, grease, oil, scum, or foam in the receiving water in the vicinity of the outfall.
2. The discharge shall be free from oil, grease, or petrochemicals that produce a visible film on the surface of the receiving water in the vicinity of the discharge or coat the banks of the water course in the vicinity of the outfall.

Compliance with these requirements can be easily ascertained by direct observation of each outfall during a discharge event.

### Bacteria

The current NH WQS at Env-Wq 1703.06(c) require an end-of-pipe criteria of 1,000 *E. coli*/100 ml for all CSO discharges. To ensure that the CSO outfalls do not violate this standard, the Draft Permit contains a maximum daily *E. coli* limit of 1,000 *E. coli* per 100 mL for each CSO outfall. Given that CSO discharges are intermittent, a monthly average limit is not applied.

For Outfalls 002 through 009, All attempts must be made to begin sampling during the first half hour after the outfall starts discharging. If this is not possible, a sample shall be collected as soon as possible after the discharge commences. The “event maximum” values for *Escherichia coli* shall be reported on the appropriate DMR for the year sampled for each CSO outfall. For Outfall 014, the monitoring frequency shall be once per year during the first two (2) hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours.

### Toxicity

EPA notes that CSO discharges not only have the potential to violate water quality standards related to bacteria but also contain a wide variety of toxic pollutants. To characterize the CSO outfalls with respect to toxic pollutants, the Draft Permit includes a requirement that CSO outfalls 004, 005, 006 and 014 conduct annual sampling for the pollutants listed in Attachment F (List for Pollutant Scans) of the Draft Permit. These four CSO outfalls were chosen because they represent approximately 95% of the total CSO volume (based on Appendix E of this Fact Sheet). Therefore, EPA considers that characterizing these four outfalls is sufficient to understand the pollutants in all of the CSO discharges from the City. EPA notes that these data may be used in a future permitting action to develop and establish additional water quality-based effluent limits for other toxic pollutants, as necessary to ensure that the permit is protective of water quality standards.

#### **5.6.1 Additional Limitations and Requirements for the Screening and Disinfection CSO Treatment Facility (Outfall 014)**

In addition to the requirements described above, the operation of the Screening and Disinfection CSO Treatment Facility (Outfall 014) is subject to additional technology-based effluent limitations, water-quality based effluent limitations, and monitoring requirements. This Screening and Disinfection CSO Treatment Facility represents enhancements of the Nine Minimum Controls, allowing for removal of floatable and solid materials (NMC #6) and reduction of pathogenic bacteria through disinfection (NMC #7).

The Screening and Disinfection CSO Treatment Facility (Outfall 014) has the capacity to screen and disinfect (including chlorination and dechlorination) flows up to 91 MGD.

The Draft Permit contains monitoring requirements and numeric effluent limitations for the Screening and Disinfection CSO Treatment Facility (Outfall 014), including monitoring requirements for flow, TSS, BOD<sub>5</sub>, pH, and whole effluent toxicity as well as limitations on bacteria (*Escherichia coli*) and total residual chlorine. The basis for these monitoring requirements and limitations are discussed below.

##### **5.6.1.1 Flow**

The Draft Permit requires the Permittee to report specific characteristics about the flow and duration of each discharge event for the Screening and Disinfection CSO treatment facility. The

Permittee shall report the duration of each event, the total volume for each discharge event and the number of events each month. This flow data will be used to characterize the discharge from the CSO treatment facility to understand the frequency and magnitude of these discharges.

#### **5.6.1.2 TSS, BOD<sub>5</sub> and pH**

The Draft Permit requires the Permittee to report the results of TSS, BOD<sub>5</sub> and pH sampling at the Screening and Disinfection CSO Treatment Facility (Outfall 014) two (2) times per year. This monitoring is required to characterize these CSO discharges with respect to these parameters to better understand potential impacts to water quality (*e.g.*, water clarity, dissolved oxygen and pH) in the vicinity of the discharge.

#### **5.6.1.3 Whole Effluent Toxicity**

Under Section 301(b)(1)(C) of the CWA, 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 the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. The Region’s current policy is to include toxicity testing requirements in all municipal permits, while Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts.

The Draft Permit requires the Permittee to conduct acute toxicity testing (LC50), twice per year, using the daphnid, *Ceriodaphnia dubia* (*C. dubia*), and the fathead minnow, *Pimephales promelas* (*P. promelas*), as test species in accordance with the test procedures and protocols specified in Attachment B of the Draft Permit. Samples shall be collected during the first flush or as a composite over the duration of the overflow, not to exceed 24 hours.

#### **5.6.1.4 Bacteria**

The current NH WQS at Env-Wq 1703.06(c) require an end-of-pipe criteria of 1,000 *E. coli*/100 ml for all CSO discharges. To ensure that this CSO outfall does not violate this standard, the Draft Permit contains a maximum daily *E. coli* limit of 1,000 *E. coli* per 100 mL. Given that CSO discharges are intermittent, a monthly average limit is not applied.

This limit shall be effective year-round, and the monitoring frequency shall be twice per year.



### 5.6.1.5 Total Residual Chlorine (TRC)

Chlorine is used to disinfect the effluent at the Screening and Disinfection CSO Treatment Facility, but it is a toxic chemical. The Draft Permit includes TRC limits at Outfall 014 which are based on the instream chlorine criteria defined in *National Recommended Water Quality Criteria: 2002*, EPA 822R-02-047 (November 2002), as adopted by the New Hampshire Code of Administrative Rules, Env-Wq 1703.21 and Table 1703.1. These freshwater instream criteria for chlorine are 11 µg/L (chronic) and 19 µg/L (acute). Because the upstream chlorine is assumed to be zero in this case, the water quality-based chlorine limits are calculated as the criteria times the dilution factor. The derivations of the dilution factor and the proposed TRC limits are shown below:

The available dilution at Outfall 014 was calculated using the following equation:

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

where

$Q_S$  = 7Q10 flow of Merrimack River downstream of Outfall 014 = 742 cfs (479 MGD)

$Q_D$  = design flow of the screening and disinfection facility = 141 cfs (91 MGD)

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

$$\text{Dilution Factor} = 0.9 * (742 \text{ cfs} / 141 \text{ cfs}) = \mathbf{4.7}$$

The proposed TRC were calculated as follows:

Acute criteria \* dilution factor = Acute limit

$$19 \text{ µg/L} * 4.7 = 89.3 \text{ µg/L} = 0.089 \text{ mg/L}$$

The sampling frequency is two times per year, as follows: a grab sample shall be collected within the first two hours of the start of the discharge, and every hour thereafter for a duration of four (4) hours. The acute limit is applied as a discharge event maximum. Given that CSO discharges are intermittent, a monthly average limit is not applied.

## 5.7 Standard Conditions

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

## 6.0 Federal Permitting Requirements

### 6.1 Endangered Species Act

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

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

The Federal action being considered in this case is EPA’s proposed NPDES permit for the Facility’s discharges of pollutants. The Draft Permit is intended to replace the 2015 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species and initiates consultation with the Services when required under § 7(a)(2) of the ESA.

#### 6.1.1 Marine Species

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

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

In this case, the Facility’s outfall and action area do not overlap with coastal waters where protected marine species are found. The Facility discharges directly into the Merrimack River,

which travels through New Hampshire and then into Massachusetts and subsequently to an estuary system and out to the Atlantic Ocean. The facility is located approximately 35 miles upstream from the Essex Dam in Lawrence, Mass., which is the upstream limit for two species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrom*) and the Atlantic sturgeon (*Acipenser oxyrinchus*). 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 be present so far upstream of the Essex Dam.

On the basis of the evaluation, EPA's preliminary determination is that this action is not likely to adversely affect marine and anadromous protected species. Therefore, EPA has judged that a formal consultation pursuant to section 7 of the ESA is not required with NOAA Fisheries.

### **6.1.2 Land and Freshwater Species**

Protected land and freshwater species are under the jurisdiction of the US Fish and Wildlife Service. One listed species, the endangered northern long-eared bat (*Myotis septentrionalis*), was identified as potentially occurring in the action area of the Facility's discharges. According to the USFWS, the endangered northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats."

Because the Facility's projected action area in Nashua, New Hampshire overlaps with the general range of this species, EPA submitted an evaluation on potential effects of the project to the Information for Planning and Consultation (IPaC) system provided by the USFWS. The USFWS system confirmed by letter on January 31, 2024 that, based on the specific project information submitted, the project would have "no effect" on the northern long-eared bat. This concluded EPA's consultation responsibilities for the Nashua WWTF NPDES permitting action under ESA section 7(a)(2). No ESA section 7 consultation is required with USFWS for these species.

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

EPA finds that adoption of the proposed permit is not likely to adversely affect any threatened or endangered species or its critical habitat and informal consultation with NOAA Fisheries or USFWS under Section 7 of the ESA is required. Initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

## 6.2 Essential Fish Habitat

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

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

The Federal action being considered in this case is EPA's proposed NPDES permit for the Nashua WWTF, which discharges through Outfall 001, and 10 CSOs to the Merrimack River and other waters identified in Table 5 in Section 5.6 of this document. A review of the relevant essential fish habitat information provided by NOAA Fisheries indicates that the outfall exists within designated EFH for one federally managed species, Atlantic salmon (*Salmo salar*). This is because the Nashua WWTF discharges to the Merrimack River, which has been designated as EFH for Atlantic salmon. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required. EPA has determined that the Nashua WWTF discharge may adversely affect EFH, but that the Draft Permit minimizes any impacts that reduce the quality and/or quantity of EFH for Atlantic salmon.

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from the Merrimack River, so the EFH will not be reduced in quality and/or quantity through impingement or entrainment of EFH designated species or their prey;
- Acute toxicity tests will be conducted quarterly to ensure that the discharge does not exhibit toxicity;
- Total suspended solids, biochemical oxygen demand, pH, ammonia, *Escherichia coli*, total lead, total copper, and acute toxicity are regulated by the Draft Permit to meet water quality standards;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and
- The Draft Permit requirements minimize any reduction in quality and/or quantity of EFH, either directly or indirectly.
- The Draft Permit requires monitoring for 40 Per- and Polyfluoroalkyl Substances (PFAS) and adsorbable organic fluorine in the influent, effluent, and sludge.

## 7.0 Public Comments, Hearing Requests and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Meridith Finegan at the following email address: [finegan.meridith@epa.gov](mailto:finegan.meridith@epa.gov).

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

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

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1533.

## 8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting Meridith Finegan at (617) 918-1533 or via email to [finegan.meridith@epa.gov](mailto:finegan.meridith@epa.gov).

December 2024

Date

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



Figure 1: Location Map

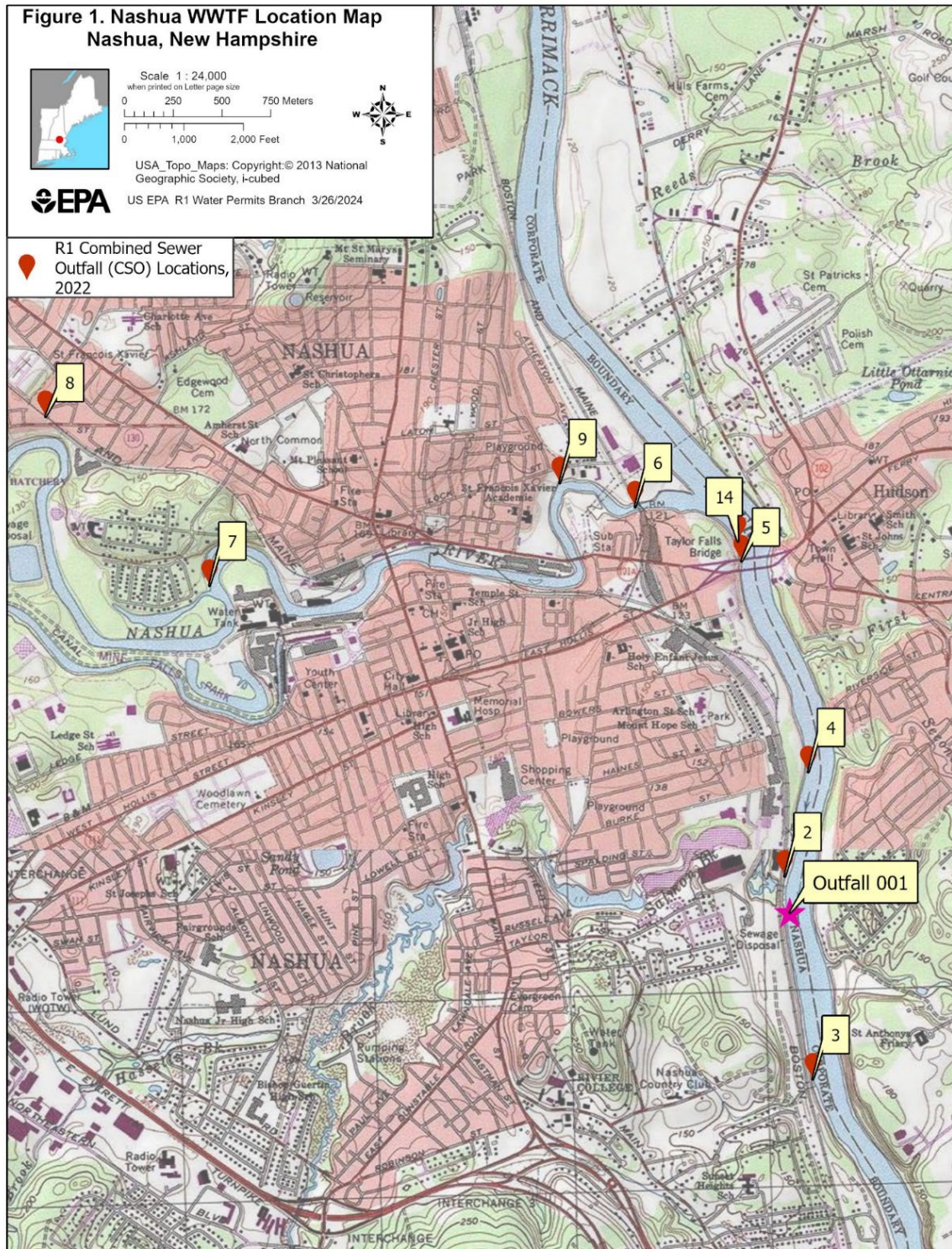




Figure 2: Flow Diagram

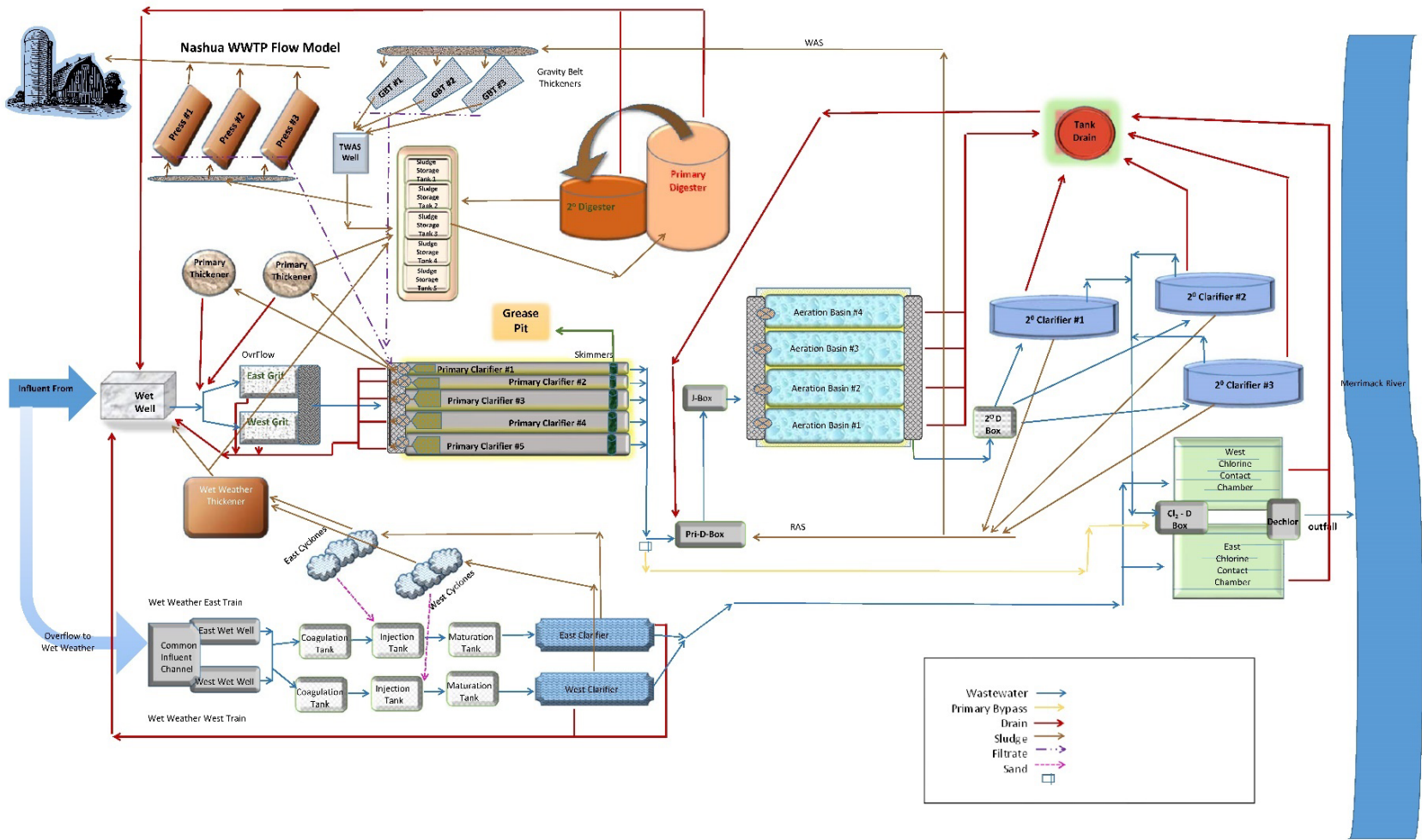
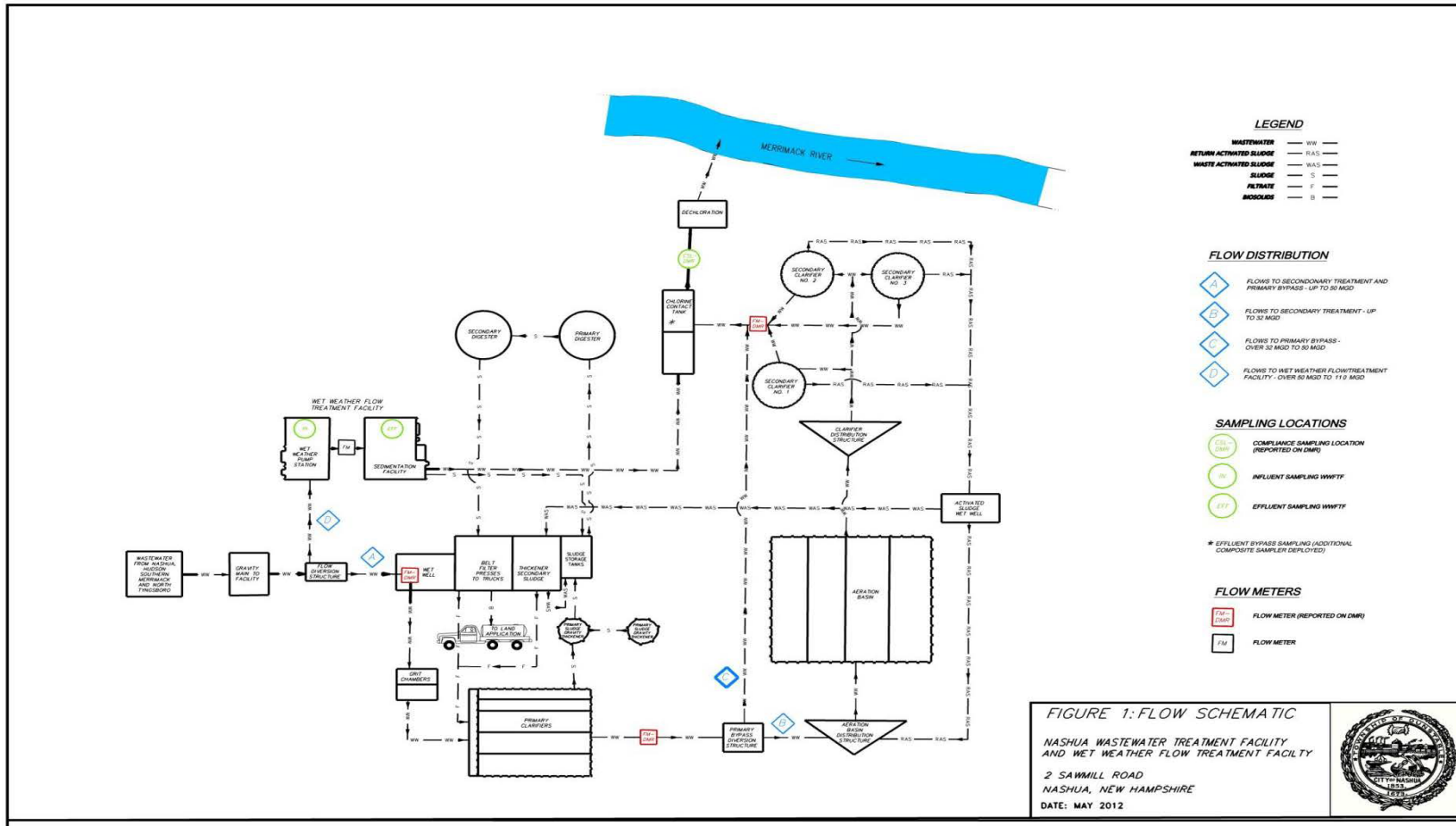
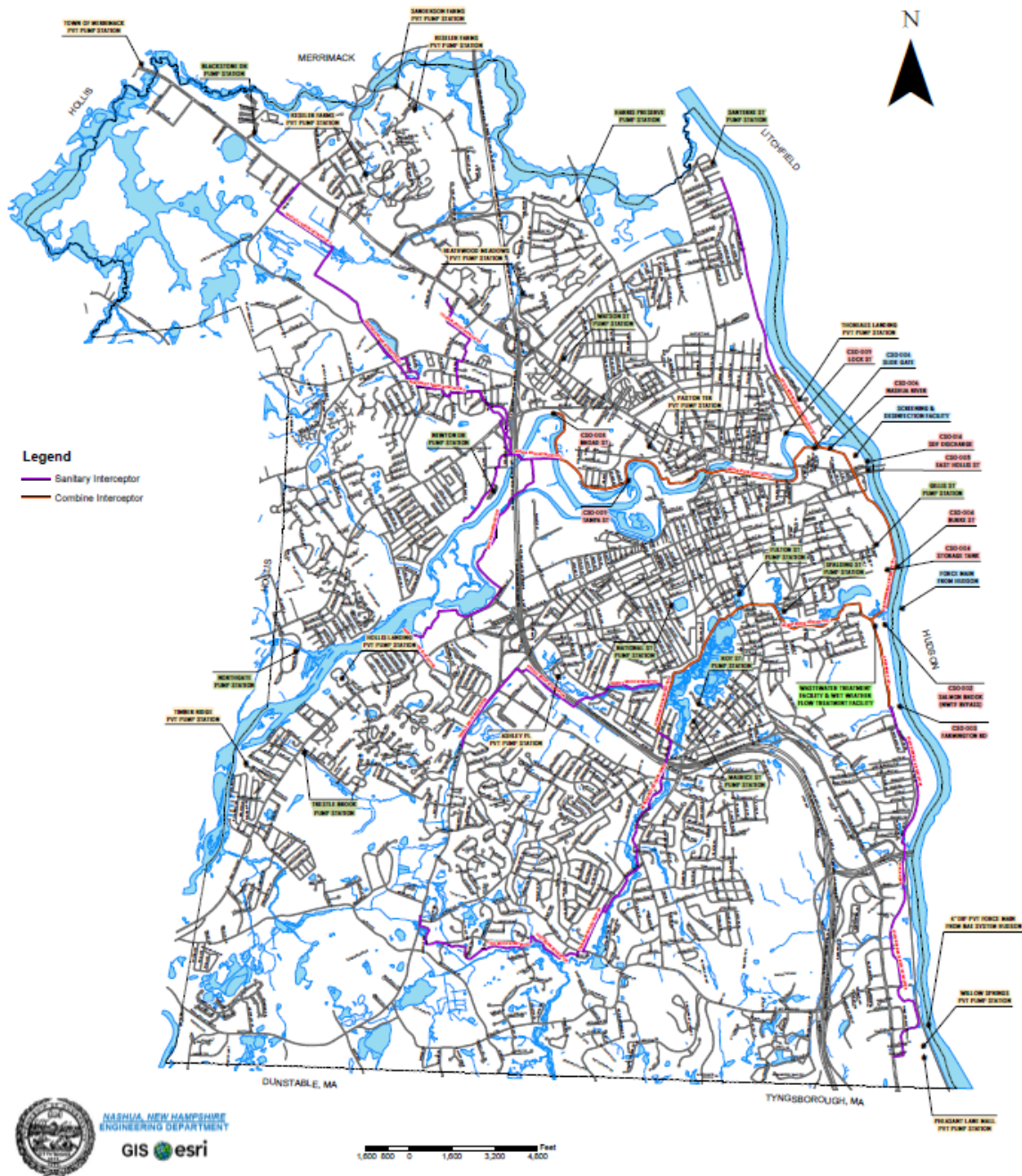


Figure 3: Wet Weather Flow Schematic





### Figure 4: CSO Map



## Outfall 001

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	4006	30	6008	45	6676	50
Minimum	8.3	9.9	694	7	713	8	1301	14
Maximum	15.6	28.7	2928	26	5268	58	14303	98
Median	11.42	18	1472	14	1992.5	17	5542	30
No. of Violations	N/A	N/A	0	0	0	2	18	4
2/28/2019	10.9	16	1491	16	1582	19	4771	30
3/31/2019	11.3	19.5	1680	17	2739	22	8290	40
4/30/2019	13.2	23	1674	14	2592	15	5718	26
5/31/2019	13	18.1	1720	16	2095	19	3689	25
6/30/2019	12.6	16.8	2373	19	3497	23	9435	47
7/31/2019	12.8	19.4	2031	15	2343	17	9041	40
8/31/2019	10.7	21.7	1665	16	1986	18	6454	36
9/30/2019	8.8	9.9	1390	19	1517	21	2275	31
10/31/2019	9.4	14.9	1425	15	1782	19	6007	41
11/30/2019	9.7	17	1363	15	2189	17	7666	40
12/31/2019	11.7	21.3	1498	15	2050	19	4564	23
1/31/2020	11	16.8	1845	19	2493	27	5805	34
2/29/2020	10.7	15.5	1568	17	2008	20	4083	25
3/31/2020	10.9	16.4	1742	19	1794	21	3703	25
4/30/2020	14	20.6	1884	16	2368	20	6238	34
5/31/2020	11.7	19.9	1841	18	2727	26	4437	38
6/30/2020	8.9	11	822	11	911	11	2321	23
7/31/2020	8.7	18.5	1077	14	1522	16	4143	24
8/31/2020	8.3	11	1940	26	3781	48	9424	98
9/30/2020	8.8	16.9	896	12	1114	12	3451	22
10/31/2020	9.3	18.5	837	10	1222	13	2258	17
11/30/2020	9.2	16.5	1626	19	2078	22	6933	34
12/31/2020	12	28.1	1594	14	2434	16	8791	28
1/31/2021	11.6	18.1	1491	14	2174	18	6240	28
2/28/2021	10.4	17.5	1245	13	1902	17	6471	34
3/31/2021	9.7	12.2	981	12	1303	16	1853	23
4/30/2021	10.8	20.9	864	10	969	10	2614	14
5/31/2021	11.8	18.5	984	10	1131	11	3282	18
6/30/2021	10.3	13.5	1010	11	1130	11	3086	25
7/31/2021	15.2	22.3	1732	11	2066	16	8060	23
8/31/2021	12.1	17.2	1002	9	1249	11	3028	18
9/30/2021	13.3	21.2	1127	9	1536	9	5091	14

## Outfall 001

Parameter	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	BOD5
	Monthly Ave	Daily Max	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max
Units	MGD	MGD	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L
Effluent Limit	Report	Report	4006	30	6008	45	6676	50
10/31/2021	12.4	22.8	1193	11	1472	12	4017	20
11/30/2021	12.5	17.9	770	7	1044	8	3308	16
12/31/2021	11.9	17.8	1326	12	1784	15	6031	34
1/31/2022	11.5	19.1	1221	13	1404	15	1970	21
2/28/2022	14.5	21.3	1850	12	2728	15	11262	32
3/31/2022	13.1	17	1512	14	1686	14	2819	19
4/30/2022	13.4	19.4	1506	12	2275	17	3832	25
5/31/2022	11.5	14.6	1172	11	1685	15	4315	32
6/30/2022	10.1	14.8	905	10	1445	12	5191	26
7/31/2022	9.4	13.3	694	9	865	10	1301	19
8/31/2022	9.2	13.9	726	9	980	14	2280	19
9/30/2022	9.5	18.6	1429	15	2513	22	6954	36
10/31/2022	8.9	14.6	1532	18	2469	25	9259	69
11/30/2022	9.2	14.5	1507	18	1745	18	5963	34
12/31/2022	11.34	22.3	1868	15	3610	22	9434	42
1/31/2023	12.7	19.5	1378	12	1914	17	4876	29
2/28/2023	11.2	13.7	1107	12	2693	28	6205	60
3/31/2023	13.8	17	1481	12	3317	24	6465	48
4/30/2023	12.8	19.4	1919	16	2544	26	5590	46
5/31/2023	12.2	19	1448	12	2812	19	12360	50
6/30/2023	10.8	19.1	1697	15	1733	16	11175	40
7/31/2023	15.1	22	1463	8	2782	13	7129	18
8/31/2023	11.7	17.3	1201	11	1379	12	5494	33
9/30/2023	13.2	21.7	2928	24	5268	58	14303	96
10/31/2023	11	16.1	747	8	713	8	1910	14
11/30/2023	10.4	17.8	1310	14	1999	19	5220	34
12/31/2023	14.9	28.7	2247	15	3946	20	13489	30
1/31/2024	15.6	23.3	2512	17	3917	19	8822	30

## Outfall 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L	%
Effluent Limit	85	4006	30	6008	45	6676	50	85
Minimum	88.8	486	6	756	8	1003	11	88.3
Maximum	96.9	5270	40	9108	97	38142	196	98.1
Median	93.65	1125	10	1583.5	13	5792.5	29	96.65
No. of Violations	0	1	1	3	2	24	12	0
2/28/2019	92.8	1051	11	1231	15	2863	21	95.9
3/31/2019	93	1636	15	3573	25	14922	72	96.6
4/30/2019	94.4	1517	12	2358	15	7155	28	97.2
5/31/2019	92.3	1270	12	1573	15	2920	21	96.8
6/30/2019	92.3	1685	13	3115	19	10439	52	97.2
7/31/2019	92.2	1385	10	1756	11	7684	34	96.9
8/31/2019	92.3	937	9	1217	10	5198	26	97.2
9/30/2019	91.8	550	7	756	10	1003	13	97.7
10/31/2019	93.2	820	8	1056	8	5069	27	97.3
11/30/2019	93.6	715	8	1171	9	5563	29	97.9
12/31/2019	92.8	916	9	1463	10	2936	20	97.6
1/31/2020	89	988	9	1936	14	9200	46	97.2
2/29/2020	90.8	705	7	1122	11	2382	26	97.8
3/31/2020	89.3	802	8	1013	10	2844	22	97.6
4/30/2020	90.7	1125	8	1534	11	5871	32	97.3
5/31/2020	89.8	842	8	1222	12	3736	32	97
6/30/2020	94.8	577	7	758	9	2523	25	97.7
7/31/2020	94	838	10	1594	14	6376	55	97.6
8/31/2020	88.8	1899	25	4458	56	12982	135	91.5
9/30/2020	94.3	591	8	758	8	2510	16	96.3
10/31/2020	95	486	6	820	8	1782	11	97.2
11/30/2020	91.5	1125	12	1423	13	6390	29	93.9
12/31/2020	91.4	1287	10	2273	16	8791	28	92.6
1/31/2021	92.5	1211	11	2163	14	9485	38	94.6
2/28/2021	93.3	1326	14	2319	20	8374	44	94.3
3/31/2021	94.3	771	10	1000	12	1327	17	95.6
4/30/2021	95.5	695	8	831	10	2801	15	97.2
5/31/2021	95	875	8	1304	10	4193	23	96.7
6/30/2021	95	927	10	1132	11	3469	24	96.4
7/31/2021	92.6	2081	12	2433	16	11915	34	93.8
8/31/2021	94.2	1039	9	1308	11	3701	22	95.2
9/30/2021	94.1	1364	10	2266	13	8727	24	95.3

## Outfall 001

Parameter	BOD5	TSS	TSS	TSS	TSS	TSS	TSS	TSS
	Monthly Ave Min	Monthly Ave	Monthly Ave	Weekly Ave	Weekly Ave	Daily Max	Daily Max	Monthly Ave Min
Units	%	lb/d	mg/L	lb/d	mg/L	lb/d	mg/L	%
Effluent Limit	85	4006	30	6008	45	6676	50	85
10/31/2021	94.9	1089	9	1426	11	4418	22	96.4
11/30/2021	96.8	917	8	1474	10	5375	26	97
12/31/2021	94.8	995	9	1404	11	6031	34	97.3
1/31/2022	93.9	1298	10	3088	17	15884	56	96.6
2/28/2022	93.3	2027	13	3000	15	14078	40	94.8
3/31/2022	93.4	949	9	1074	10	1997	19	96.7
4/30/2022	93.7	1084	8	1656	12	3986	26	96.6
5/31/2022	95.6	903	9	1384	12	3911	29	97.4
6/30/2022	96.4	872	9	1469	12	5790	29	97.5
7/31/2022	96.5	757	9	1082	11	3315	23	97.6
8/31/2022	96.7	769	10	987	13	2160	18	97.4
9/30/2022	93.8	1275	14	1898	19	5795	30	95.8
10/31/2022	92.5	1802	20	4295	40	14761	110	93.7
11/30/2022	94.3	1506	18	1775	18	6665	38	95.1
12/31/2022	92.6	2072	17	4292	23	13999	46	96
1/31/2023	94.9	1753	16	2228	20	5380	32	96.7
2/28/2023	94.1	1043	11	1386	14	2689	26	95.6
3/31/2023	92.4	1462	12	2516	19	4849	36	94.9
4/30/2023	92.4	2080	16	3024	18	10588	44	95.9
5/31/2023	94.5	1181	9	2737	16	14585	59	98.1
6/30/2023	94.2	1502	12	1233	11	16468	56	96.9
7/31/2023	95.4	2664	13	4378	19	19011	48	94.8
8/31/2023	95.4	1860	16	1685	12	17166	128	95.6
9/30/2023	89.8	5270	40	9108	97	38142	196	88.3
10/31/2023	96.9	1136	10	2219	16	9937	42	97.3
11/30/2023	94.4	1219	13	1797	16	5606	29	96.1
12/31/2023	92	2970	15	7542	22	36532	65	93.9
1/31/2024	90	2850	17	6089	25	21761	74	92.8

## Outfall 001

Parameter	pH	pH	E. coli	E. coli	TRC	TRC	Copper	Copper
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L	mg/L	mg/L
Effluent Limit	6.5	8	126	406	0.308	0.532	Report	Report
Minimum	6.04	6.91	1.3	4.1	0.003	0.024	0.006	0.007
Maximum	7.3	7.7	43.9	2419.6	0.097	1.593	0.045	0.051
Median	6.88	7.43	7.85	45.4	0.0285	0.1975	0.0115	0.012
No. of Violations	6	0	0	6	0	1	N/A	N/A
2/28/2019	7.07	7.4	4.9	949.2	0.013	0.16	0.01	0.01
3/31/2019	6.93	7.45	1.6	9.8	0.013	0.194	0.017	0.017
4/30/2019	6.88	7.38	1.7	28.1	0.013	0.093	0.012	0.013
5/31/2019	7.07	7.44	1.7	10.9	0.034	0.191	0.007	0.007
6/30/2019	6.99	7.51	1.4	18.5	0.028	0.17	0.01	0.015
7/31/2019	6.81	7.56	1.8	35	0.067	0.472	0.01	0.01
8/31/2019	7.12	7.55	3	2419.6	0.017	0.21	0.009	0.012
9/30/2019	7.3	7.65	1.9	21.1	0.044	0.282	0.008	0.008
10/31/2019	6.99	7.56	2	17.5	0.009	0.165	0.007	0.007
11/30/2019	6.67	7.45	1.84	41.7	0.009	0.13	0.009	0.01
12/31/2019	6.69	7.38	2.6	20.1	0.041	0.41	0.007	0.007
1/31/2020	6.95	7.4	1.8	7.5	0.021	0.24	0.012	0.012
2/29/2020	7.14	7.45	1.3	18.7	0.027	0.267	0.015	0.016
3/31/2020	7.16	7.47	1.3	106.3	0.02	0.107	0.013	0.013
4/30/2020	7.05	7.42	1.3	11.2	0.012	0.074	0.01	0.01
5/31/2020	7.19	7.52	1.6	109.2	0.014	0.113	0.008	0.009
6/30/2020	6.88	7.55	1.6	24.6	0.009	0.046	0.006	0.008
7/31/2020	7.05	7.63	2.5	32.3	0.021	0.393	0.008	0.009
8/31/2020	6.94	7.7	4.4	22.8	0.014	0.201	0.021	0.027
9/30/2020	7.09	7.49	5.7	38.6	0.011	0.04	0.008	0.008
10/31/2020	6.7	7.51	5.3	81.6	0.023	0.27	0.009	0.009
11/30/2020	7.04	7.56	6.9	47.1	0.008	0.145	0.012	0.012
12/31/2020	6.75	7.43	3.8	172.8	0.035	0.348	0.013	0.016
1/31/2021	7.01	7.45	2.1	98.4	0.03	0.144	0.014	0.014
2/28/2021	7.16	7.49	2	222.4	0.008	0.084	0.014	0.015
3/31/2021	6.94	7.37	1.3	27.2	0.06	0.492	0.012	0.013
4/30/2021	6.78	7.42	1.4	4.1	0.046	0.38	0.028	0.037
5/31/2021	6.57	7.21	6.4	18.9	0.092	0.402	0.01	0.011
6/30/2021	6.52	7.35	15	110.2	0.042	0.181	0.012	0.012
7/31/2021	6.54	7.33	10.4	27.9	0.029	0.432	0.01	0.012
8/31/2021	6.47	7.03	15.9	88.4	0.059	0.431	0.01	0.011
9/30/2021	6.54	7.16	15.3	44.8	0.018	0.088	0.011	0.012

## Outfall 001

Parameter	pH	pH	E. coli	E. coli	TRC	TRC	Copper	Copper
	Minimum	Maximum	Monthly Geometric Mean	Daily Max	Monthly Ave	Daily Max	Monthly Ave	Daily Max
Units	SU	SU	#/100mL	#/100mL	mg/L	mg/L	mg/L	mg/L
Effluent Limit	6.5	8	126	406	0.308	0.532	Report	Report
10/31/2021	6.61	7.31	19.3	46	0.013	0.085	0.013	0.013
11/30/2021	6.75	7.21	10.9	36.4	0.018	0.096	0.019	0.022
12/31/2021	6.98	7.26	9.5	29.2	0.003	0.024	0.019	0.021
1/31/2022	6.96	7.43	9.7	18.9	0.026	0.129	0.013	0.013
2/28/2022	6.94	7.37	18.5	2419.6	0.021	0.129	0.014	0.014
3/31/2022	7.11	7.38	17.5	128.4	0.034	0.273	0.015	0.015
4/30/2022	6.76	7.31	13.5	52	0.033	0.175	0.01	0.01
5/31/2022	6.59	6.91	10.8	31.1	0.088	0.357	0.011	0.011
6/30/2022	6.8	7.47	20.2	62	0.062	0.169	0.012	0.015
7/31/2022	6.79	7.28	16.8	48.8	0.038	1.593	0.013	0.014
8/31/2022	7.02	7.63	18.8	43.5	0.038	0.13	0.01	0.012
9/30/2022	6.04	7.18	43.9	613.1	0.03	0.111	0.01	0.01
10/31/2022	6.36	7.5	18.1	57.1	0.097	0.455	0.013	0.013
11/30/2022	6.61	7.43	22.9	203.7	0.042	0.238	0.013	0.013
12/31/2022	6.83	7.52	13.7	38.1	0.058	0.476	0.015	0.015
1/31/2023	6.92	7.36	9.9	29.2	0.02	0.217	0.011	0.012
2/28/2023	7.18	7.42	12.4	691	0.049	0.459	0.017	0.017
3/31/2023	7.08	7.34	12.3	516.3	0.036	0.372	0.012	0.012
4/30/2023	6.88	7.44	13.2	148.3	0.025	0.125	0.009	0.009
5/31/2023	6.85	7.45	8.8	173.3	0.048	0.166	0.008	0.008
6/30/2023	6.3	7.48	10.8	46.8	0.024	0.096	0.011	0.016
7/31/2023	6.19	6.92	10.1	25.9	0.02	0.387	0.007	0.008
8/31/2023	6.6	7.4	15.3	57.6	0.047	0.232	0.018	0.026
9/30/2023	6.36	7.4	13.4	88.8	0.052	0.317	0.045	0.051
10/31/2023	6.72	7.25	9.8	44.8	0.055	0.287	0.014	0.015
11/30/2023	6.96	7.5	15.8	334.4	0.081	0.296	0.013	0.013
12/31/2023	6.59	7.45	6.7	82.6	0.052	0.33	0.01	0.01
1/31/2024	6.82	7.36	4.6	76.1	0.024	0.183	0.009	0.009



## WET Effluent

Parameter	LC50 Acute Ceriodaphnia	LC50 Acute Pimephales	Ammonia	Aluminum	Cadmium	Copper	Lead
	Daily Min	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	%	%	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	100	100	Report	Report	Report	Report	Report
Minimum	100	70.7	9.3	0	Non-Detect	0.0044	0
Maximum	100	100	32	0.39	Non-Detect	0.026	0.0065
Median	100	100	20	0.0155	Non-Detect	0.01085	0.0003
No. of Violations	0	1	N/A	N/A	N/A	N/A	N/A
6/30/2019	100	100	21	< .02	< .0001	0.0044	0.0003
9/30/2019	100	100	25	0.014	< .0003	0.008	< .0003
6/30/2020	100	100	23.4	< .02	< .0003	0.008	< .0003
9/30/2020	100	100	22.2	0.038	< .0001	0.015	0.0006
6/30/2021	100	100	11.2	0.0229	< .0001	0.0107	0.0003
9/30/2021	100	100	9.3	0.017	< .0001	0.0092	0.00033
6/30/2022	100	100	19	0.01	< .0005	0.011	< .0005
9/30/2022	100	100	12	0.01	< .0005	0.012	< .0005
6/30/2023	100	100	12	0.39	< .0005	0.016	0.0065
9/30/2023	100	70.7	32	0.032	< .0005	0.026	0.00093



## WET Effluent

Parameter	Nickel	Zinc	Hardness	Alkalinity
	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report
Minimum	0.0028	0.036	44	43
Maximum	0.0079	0.083	69	170
Median	0.005025	0.066	58.5	104
No. of Violations	N/A	N/A	N/A	N/A
6/30/2019	0.0028	0.036	59	140
9/30/2019	0.004	0.059	65	170
6/30/2020	0.005	0.049	60	130
9/30/2020	0.0079	0.059	63	130
6/30/2021	0.00505	0.0779	57.4	53
9/30/2021	0.0051	0.082	69	48
6/30/2022	0.007	0.069	55	78
9/30/2022	0.006	0.08	51	43
6/30/2023	0.005	0.083	44	52
9/30/2023	0.005	0.063	58	160

## WET Ambient - Merrimack River

Parameter	pH	Alkalinity	Hardness	Ammonia	Aluminum	Cadmium	Copper
	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
Effluent Limit	Report	Report	Report	Report	Report	Report	Report
Minimum	6.680	10	20	0	0.027	0	0
Maximum	7.360	20	31	0.41	0.170	0	0.0013
Median	7.020	16	27	0.075	0.048	Non-Detect	0.00115
6/30/2019	6.94	20	27	<0.1	0.093	<0.0001	0.0013
9/30/2019	7.10	16	29	<0.1	0.051	<0.0001	0.0012
6/30/2020	7.20	16	31	0.100	0.035	<0.0003	0.0009
9/30/2020	7.36	14	24	<0.1	0.041	<0.0001	0.0008
6/30/2021	6.86	13	21	0.130	0.046	<0.0001	0.0011
9/30/2021	7.01	10	20	0.410	0.170	<0.0001	0.0011
6/30/2022	7.03	14	31	0.085	0.046	<0.0005	0.0013
9/30/2022	7.02	18	25	<0.05	0.027	<0.0005	0
6/30/2023	6.68	16	27	0.096	0.066	<0.0005	0.00120
9/30/2023	7.02	18	26	0.065	0.049	<0.0005	0.00130

## WET Ambient - Merrimack River

Parameter	Lead	Nickel	Zinc
	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report
Minimum	0	0	0
Maximum	0.0007	0.000713	0.006
Median	0.0005135	Non-Detect	0.003
6/30/2019	0.0007	<0.001	0.0060
9/30/2019	0.0005	0.0006	0.0034
6/30/2020	<0.0003	<0.001	0.0028
9/30/2020	<0.0002	<0.001	0.0032
6/30/2021	0.00053	0.0007	0.0034
9/30/2021	0.00058	0.0007	0.0043
6/30/2022	<0.0005	<0.001	<0.005
9/30/2022	<0.0005	<0.001	<0.005
6/30/2023	0.00055	<0.001	<0.005
9/30/2023	0.00066	<0.001	<0.005

## CSO Outfalls

CSO Outfall	002	003	004	005	006	007	008	009	014
Parameter	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli	E. coli
	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum	Maximum
Units	#/100mL	#/100mL	#/100mL	#/100mL	#/100mL	#/100mL	#/100mL	#/100mL	#/100mL
Effluent Limit	1000	1000	1000	1000	1000	1000	1000	1000	1000
Minimum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	2419.6
Maximum	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	2419.6
Median	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	2419.6
No. of Violations	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	3
12/31/2019	NODI: C	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: C	2419.6
12/31/2020	NODI: C	NODI: E	NODI: E	NODI: E	NODI: E	NODI: C	NODI: E	NODI: E	NODI: E
12/31/2021	NODI: C	NODI: E	NODI: E	NODI: E	NODI: E	NODI: C	NODI: E	NODI: E	2419.6
12/31/2022	NODI: F	NODI: E	NODI: E	NODI: E	NODI: F	NODI: F	NODI: E	NODI: F	NODI: E
12/31/2023	NODI: C	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	2419.6

## CSO Screening and Disinfection Facility - Outfall 014

Parameter	E. coli	Rainfall events
	Maximum	MO TOTAL
Units	CFU/100mL	occur/mo
Effluent Limit	1000	Report
Minimum	No Data	No Data
Maximum	No Data	No Data
Median	No Data	No Data
No. of Violations	No Data	N/A
2/28/2019	NODI: 8	NODI: 8
3/31/2019	NODI: 8	NODI: 8
4/30/2019	NODI: 8	NODI: 8
5/31/2019	NODI: 8	NODI: 8
6/30/2019	NODI: 8	NODI: 8
7/31/2019	NODI: 8	NODI: 8
8/31/2019	NODI: 8	NODI: 8
9/30/2019	NODI: 8	NODI: 8
10/31/2019	NODI: 8	NODI: 8
11/30/2019	NODI: 8	NODI: 8
12/31/2019	NODI: 8	NODI: 8
1/31/2020	NODI: 8	NODI: 8
2/29/2020	NODI: 8	NODI: 8
3/31/2020	NODI: 8	NODI: 8
4/30/2020	NODI: 8	NODI: 8
5/31/2020	NODI: 8	NODI: 8
6/30/2020	NODI: 8	NODI: 8
7/31/2020	NODI: 8	NODI: 8
8/31/2020	NODI: 8	NODI: 8
9/30/2020	NODI: 8	NODI: 8
10/31/2020	NODI: 8	NODI: 8
11/30/2020	NODI: 8	NODI: 8
12/31/2020	NODI: 8	NODI: 8
1/31/2021	NODI: 8	NODI: 8
2/28/2021	NODI: 8	NODI: 8
3/31/2021	NODI: 8	NODI: 8
4/30/2021	NODI: 8	NODI: 8
5/31/2021	NODI: 8	NODI: 8
6/30/2021	NODI: 8	NODI: 8
7/31/2021	NODI: 8	NODI: 8
8/31/2021	NODI: 8	NODI: 8
9/30/2021	NODI: 9	NODI: 9
10/31/2021	NODI: C	NODI: C
11/30/2021	NODI: 9	NODI: 9

## CSO Screening and Disinfection Facility - Outfall 014

Parameter	E. coli	Rainfall events
	Maximum	MO TOTAL
Units	CFU/100mL	occur/mo
Effluent Limit	1000	Report
12/31/2021	NODI: 9	NODI: 9
1/31/2022	NODI: 9	NODI: 9
2/28/2022	NODI: 9	NODI: 9
3/31/2022	NODI: C	NODI: C
4/30/2022	NODI: E	NODI: E
5/31/2022	NODI: C	NODI: C
6/30/2022	NODI: C	NODI: C
7/31/2022	NODI: E	NODI: E
8/31/2022	NODI: C	NODI: C
9/30/2022	NODI: C	NODI: C
10/31/2022	NODI: C	NODI: C
11/30/2022	NODI: C	NODI: C
12/31/2022	NODI: A	NODI: A
1/31/2023	NODI: C	NODI: C
2/28/2023	NODI: C	NODI: C
3/31/2023	NODI: C	NODI: C
4/30/2023	NODI: C	NODI: C
5/31/2023	NODI: C	NODI: C
6/30/2023	NODI: 9	NODI: 9
7/31/2023	NODI: 9	NODI: 9
8/31/2023	NODI: C	NODI: C
9/30/2023	NODI: 9	NODI: 9
10/31/2023	NODI: 9	NODI: 9
11/30/2023	NODI: C	NODI: C
12/31/2023	NODI: 9	NODI: 9
1/31/2024	NODI: 9	NODI: 9

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)<sup>1</sup> 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 95<sup>th</sup> percentile of the dataset. For datasets of less than 10 samples, EPA uses the maximum value of the dataset.

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

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

Where:

$C_s$  = upstream concentration (median value of available ambient data)

$Q_s$  = upstream flow (7Q10 flow upstream of the outfall)

$C_e$  = effluent concentration (95<sup>th</sup> percentile or maximum of effluent concentration)

$Q_e$  = effluent flow of the facility (design flow)

$C_d$  = downstream concentration

$Q_d$  = downstream flow ( $Q_s + Q_e$ )

Solving for the downstream concentration results in:

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

When both the downstream concentration ( $C_d$ ) and the effluent concentration ( $C_e$ ) exceed the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above the water quality standard. *See* 40 C.F.R. § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must

contain WQBELs for the parameter. *See* 40 C.F.R. § 122.44(d)(1)(iii). Limits are calculated by using the criterion as the downstream concentration ( $C_d$ ) and rearranging the mass balance equation to solve for the effluent concentration ( $C_e$ ).

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

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

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



## Appendix B – Reasonable Potential and Limits Calculations

NPDES Permit No. NH0100170

Pollutant	Conc. Units	Q <sub>s</sub> (MGD)	C <sub>s</sub> <sup>1</sup>	Q <sub>e</sub> (MGD)	C <sub>e</sub> <sup>2</sup>		Q <sub>d</sub> (MGD)	C <sub>d</sub>		Criteria		Reasonable Potential		Limits	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	C <sub>e</sub> & C <sub>d</sub> > Acute Criteria	C <sub>e</sub> & C <sub>d</sub> > Chronic Criteria	Acute	Chronic
Aluminum	µg/L	463.6	47.6	16	165.9	165.9	479.6	51.5	51.5	675.0	78.3	N	N	N/A	N/A
Cadmium	µg/L	463.6	0	16	0.0	0.0	479.6	0.0	0.0	0.5	0.3	N	N	N/A	N/A
Copper	µg/L	463.6	1.2	16	20.5	20.5	479.6	1.8	1.8	3.7	2.8	N	N	N/A	N/A
Lead	µg/L	463.6	0.5135	16	3.6	3.6	479.6	0.62	0.62	14.2	0.56	N	Y	N/A	1.8
Nickel	µg/L	463.6	0	16	8.2	8.2	479.6	0.3	0.3	142.0	15.8	N	N	N/A	N/A
Zinc	µg/L	463.6	3	16	99.0	99.0	479.6	6.2	6.2	36.2	36.2	N	N	N/A	N/A
Ammonia (Cold)	mg/L	463.6	0	16	0.0	0.0	479.6	0.0	0.0	21.3	3.9	N	N	N/A	N/A
Ammonia (Warm)	mg/L	463.6	0.075	16	34.4	34.4	479.6	1.220	1.220	9.8	1.221	N	N	N/A	N/A
Phosphorus	mg/L	463.6	0.0445	16	1.38	1.38	479.6	0.089	0.089		0.090	N	N	N/A	N/A

<sup>1</sup>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).

<sup>2</sup>Values represent the 95<sup>th</sup> percentile (for n ≥ 10) or maximum (for n < 10) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A). If the pollutant already has a limit (for either acute or chronic conditions), the value represents the existing limit.

<sup>3</sup>The "Reasonable Potential" column is marked "Y" if both C<sub>e</sub> & C<sub>d</sub> are above the respective criterion or if there is an existing WQBEL in the current permit.

## APPENDIX C

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

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

In Section A below, EPA discusses the necessity for requiring the development of Adaptation Plans at wastewater treatment systems (“WWTS”) and sewer systems<sup>1</sup> and provides some examples of how major storm and flood events can impact facility operations. In Section B below, EPA discusses the various components and proper scope of an Adaptation Plan. In Section C below, EPA sets forth the legal basis for its decision to require wastewater treatment systems and sewer systems to develop an Adaptation Plan.

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

Wastewater treatment systems and sewer systems are crucial in helping protect human health and the environment and providing critical services to the communities that they serve. Many wastewater treatment facilities and associated sewer system pump stations are located at low elevations (to maximize flow via gravity) within riverine or coastal floodplains and are at risk of increased flooding and other impacts from major storm events. As noted in a 2016 report by the New England Interstate Water Pollution Control Commission<sup>2</sup> wastewater systems are already facing severe effects due to major storm and flood events and need to better adapt to this new reality:

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

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<sup>1</sup> The Clean Water Act authorizes EPA, as permit issuer, to issue permits for “publicly owned treatment works” (POTWs). CWA § 402. POTWs comprise wastewater treatment systems and sewer systems. 40 C.F.R. §§ 122.2, 403.3(q); *In re Charles River Pollution Control District*, 16 EAD 623, 635 (EAB 2015) (“POTW treatment plants, like the satellite sewage collection systems that convey wastewater to the plants, are components of a POTW.”) To more precisely and accurately describe the permit requirements, the Permit and this Response to Comments refer to “wastewater treatment system(s)” and “sewer system(s)” or, in some instances, both.

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

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

In the Northeast in the last five years Hurricanes Irene (2011) and Sandy (2012), and winter blizzards such as the February 2013 nor'easter, produced widespread economic harm. Sandy caused nearly 11 billion gallons of sewage to be released into coastal waters, rivers, and other bodies of water as power outages and storm surge overwhelmed wastewater-treatment plants. 94% of these releases were a result of flooding and storm surge as waters overwhelmed sewage-treatment plants.

As a result, addressing the ongoing challenges and the increasing risks faced by wastewater infrastructure systems nationwide - reduction or failure of system services resulting in discharges of untreated or partially treated sewage, flooding, physical damage to assets, impacts to personnel, to name just some of the possible outcomes - are a priority for EPA and a host of federal and state agencies, as well as regional and local governmental bodies. Addressing these challenges is also a priority for many wastewater treatment managers across the country. As noted in a 2019 study,<sup>3</sup> which surveyed wastewater treatment systems in Connecticut, 78% of wastewater managers had made adaptive changes that ranged from low-cost temporary adaptive changes to a few who described major changes that addressed redesign or the rebuilding of WWTPs; of those who had made changes, half “did so to improve resiliency to withstand the worst storm experienced by the wastewater system to date.”<sup>4</sup>

Flooding and other major storm events can lead to a variety of, and more frequent, WWTS and sewer system failures. One recent analysis suggests that one-third of 5,500 wastewater treatment plants analyzed from around the country would be at risk of flooding in the event of a major storm.<sup>5</sup> System failures, such as backups of untreated wastewater into the collection system and potentially into buildings and connections, bypasses of pollution treatment, and/or discharges of raw sewage into the environment are some of the potential impacts that may become more frequent.<sup>6</sup>

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<sup>3</sup> “Kirchhoff, C.J. and P.L. Watson. 2019. “Are Wastewater Systems Adapting to Climate Change?” *Journal of the American Water Resources Association*, 1-12. pg.1. <https://doi.org/10.1111/1752-1688.12748>. (Citations omitted in quote).

<sup>4</sup> *Id.* at pgs. 5, 8.

<sup>5</sup> “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the U.S.” (August 10, 2023), <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e>

<sup>6</sup> See EPA’s *Resilient Strategies Guide* (noting that “[u]tilities are increasingly recognizing that future extreme weather events, energy prices and ecological conditions may not be predictable based on historical observations. These shifts may require utilities to change how they operate and manage their resources.”) <https://www.epa.gov/crwu/resilient-strategies-guide-water-utilities#/resources/646>; EPA Memorandum, “Re-Instatement of Federal Flood Risk Management Standard for State Revolving Fund Programs,” Thompkins, Anita Maria and Stein, Raffael to Water Division Directors (April, 2022) <https://www.epa.gov/dwsrf/federal-flood-risk-management-standard-srf-programs> (noting that “[f]looding is one of the most common hazards in the United States accounting for roughly \$17 billion in damage annually between 2010-2018 according to [FEMA], and it will continue to be an ongoing challenge for water infrastructure” with impacts that “can include physical damage to assets, soil and streambank erosion and contamination of water sources, loss of power and communication, loss of access to facilities, saltwater intrusion, and dangerous conditions for personnel.”). See also, National Association of Clean Water Agencies (“NACWA”), “NACWA Principles on Climate Adaptation and Resiliency” (noting that “[f]or many clean water agencies, changing weather patterns have become a management reality and responsibility.”) <https://www.nacwa.org/docs/default-source/conferences-events/2018-ulc/nacwa-statement-of-principles-on-climate.pdf?sfvrsn=2>

In New England, as well as elsewhere throughout the country,<sup>7</sup> storms and flooding have caused damage to, and in some cases total failure of, wastewater treatment systems and sewer systems. Implementing adaptive measures so that a wastewater treatment plant's wastewater infrastructure may withstand increasingly frequent heavy precipitation and major storm and flood events is, therefore, a critical step in a system's maintenance. Additionally, EPA notes that sometimes, mitigation measures based on adaptation/mitigation plans that were at one point sufficient and that were based on historic, local major storm and flood predictions, may now be insufficient given actual experience with major storms and flooding, the emergence of new data that was not previously available, and more recent projections. And while EPA also acknowledges that it may not always be possible to anticipate all future events (i.e., speed or direction of the wind, temperature fluctuations, the uprooting of trees, etc.) that can exacerbate, or alleviate, the outcomes of major storm and flood events, as illustrated in the examples below, it is important to ensure that existing adaptation plans reflect, as best as possible, all relevant data.

Many New England WWTSs have been negatively impacted by major storm and flood events in recent years. In one notable example from Rhode Island in 2010, historically high flood waters (known as "the Great Flood of 2010") severely impacted several wastewater treatment facilities, including the Warwick Rhode Island Wastewater Treatment Facility.<sup>8</sup> After repetitive flood damages to the WWTS, the City of Warwick had constructed a protective berm, or levee, in the mid-1980s to protect the WWTS from future damages. The levee, originally designed for the 100-year flood at that time, plus three feet of freeboard, was breached by repeated heavy rain events in March 2010. The flooding caused catastrophic impacts to the WWTS which led to the "unthinkable" - the decision to evacuate the plant as the Pawtuxet River crested at 20.79 feet.<sup>9</sup> The impact to the treatment plant was extreme:

While the flood waters caused no structural damages to the facility's tanks or buildings, anything electrical and everything that was not metal or concrete was ruined. It was at least two days before the river had subsided to the point where staff could begin to access the facility.<sup>10</sup>

With a tremendous amount of work and rebuilding, the facility was dewatered, and primary and then secondary treatment were restored. The facility was unable to achieve full compliance with its permit limits for a period of about 80 days.<sup>11</sup> Due to this flooding, the facility updated their flood protection plans based on local storm and flooding data and implemented improvements

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<sup>7</sup> National Association of Clean Water Agencies ("NACWA") Fact Sheet: "10 Extreme Rain and Flood Events in the US – All in 2022" (listing the "top 10 flood events of 2022" and their effects on water infrastructure from across the country, including the devastating impacts that include loss of life, estimated damages in the range of millions to billions of dollars, and extreme impacts to system services.)

<sup>8</sup> Holbrook, Nicolas Q., The Flood Crews of 2010: A History of Rhode Island's 2010 Floods as Told By The State's Wastewater Collection and Treatment Operators, Rhode Island DEM, Office of Water Resources (2017) <https://dem.ri.gov/sites/g/files/xkgbur861/files/programs/benviron/water/pdfs/floodcrews2010.pdf>

<sup>9</sup> Id. at 13.

<sup>10</sup> Id.

<sup>11</sup> Burke, Janine L., Executive Director, Warwick Sewer Authority, "The Great Flood of 2010: A Municipal Response," pg. 237 Journal NEWEA (September 2012) <https://www.warwicksewerauthority.com/pdfs/floodmitigation/NEWEA%20Journal%20Article%20on%20WSA%20Flood%20Response.pdf>

for the WWTS, including raising the levee to protect the WWTS from inundation caused by a 500-year flood event.<sup>12</sup>



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

More recently, in July 2023, Vermont experienced a major storm and flooding event characterized by the National Weather Service as “catastrophic flash flooding and river flooding” with upwards of three to nine inches of rain falling in 48 hours, an amount that in some places of Vermont, amounted to the “greatest calendar day rainfall “since records began in 1948.”<sup>13</sup> According to local reporting, operations at 33 wastewater treatment systems were disrupted, and several facilities, like those in the towns of Ludlow and Johnson, were rendered inoperable and will need significant reconstruction.<sup>14</sup> As one news outlet reported about the conditions in Ludlow:

[t]he facility that keeps the village’s drinking water safe was built at elevation and survived. But its sewage plant fared less well. Flooding tore through it, uprooting chunks of road, damaging buildings and sweeping sewage from treatment tanks into the river.

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

<sup>13</sup> Banacos, Peter, “The Great Vermont Flood of 10-11 July 2023: Preliminary Meteorological Summary” National Oceanic and Atmospheric Administration, National Weather Service, pg. 2 (August 5, 2023) <https://www.weather.gov/btv/The-Great-Vermont-Flood-of-10-11-July-2023-Preliminary-Meteorological-Summary> (noting that damage “rivalled and in some areas exceeded – Tropical Storm Irene in 2011”)

<sup>14</sup> Robinson, Shaun, “Total Destruction:’ Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere” (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/> (“Across Vermont, 33 wastewater treatment facilities were impacted by the flooding ...according to Michelle Kolb, a supervisor in the state Department of Environmental Conservation’s wastewater program.”)



Even [over three weeks after the storm event] the plant can only handle half its normal load.<sup>15</sup>



*Figure 2: Ludlow Wastewater Treatment Plant (photo August 2, 2023, taken after July storm event)<sup>16</sup>*

The wastewater treatment plant in Johnson, Vermont was similarly devastated with the Assistant Plant Manager reporting to a local news outlet, “Total destruction. The only thing we have left is the shell of a building.”<sup>17</sup>

According to officials from Vermont DEC, both the Ludlow and Johnson WWTs had some flood protections in place prior to this event: Ludlow built a new influent pump station designed to withstand a 500-year flood event in 2020-21.<sup>18</sup> While its plant was rendered inoperable immediately after the early July flood, it came back on-line in late July. For the Johnson Wastewater Treatment Plant, this was the 6<sup>th</sup> flooding event at the plant since it was built in 1995. In the assessment that occurred by state and federal officials after the most recent flood, long-term recommendations ranged from more minor fixes (i.e., replacing the gravity line with a pump station and force main) to undertaking an assessment that would compare the cost of moving the facility against the already-significant cost of just repair and construction, estimated

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<sup>15</sup> Naishadham, Suman, Peterson, Brittany, Fassett, Carnille, “Rising Flood Risks Threaten Many Water and Sewage Treatment Plants Across the US,” Vermont Public, <https://www.vermontpublic.org/local-news/2023-08-10/ludlow-vermont-rising-flood-risks-threaten-many-water-and-sewage-treatment-plants-across-the-us>

<sup>16</sup> <https://apnews.com/article/climate-change-flood-risks-infrastructure-vermont-7bd953f513035468ee74f8f7c619bb8e> (picture captions: Joe Gaudiana, the Ludlow, VT. Chief Water and Sewer Operator, left, surveys damage with Elijah Lemieux, of the Vermont Rural Water Association, at the wastewater treatment plant following July flooding, Wednesday, Aug. 2, 2023, in Ludlow. (AP Photo/Charles Krpa))

<sup>17</sup> Robinson, Shaun, “Total Destruction: ‘Flooding Knocks Out Johnson’s Wastewater Plant, Disrupts Operations Elsewhere’ (July 18, 2023); <https://vtdigger.org/2023/07/18/total-destruction-flooding-knocks-out-johnsons-wastewater-plant-disrupts-operations-elsewhere/>

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

to be at least \$2 million.<sup>19</sup> As the officials emphasized, short of relocating, or finding significant additional resources, for some of Vermont’s impacted facilities, there are no easy fixes and future adaptations might mean preparing “to-go bags,” and installing “redundant pipes,” submersible pumps, waterproof electrical boxes or, in some cases, possibly building a second story on an existing plant.

Even more recently, in September 2023 the City of Leominster in central Massachusetts experienced a flash flooding event.<sup>20</sup> Previously, the city had identified a riverbank section of the North Nashua River, near the WWTs, that had eroded and was continuing to be eroded and was heading towards a buried sewer main. As detailed in the summary of work report,<sup>21</sup> “[l]eft unabated, the stream would likely carve a new path into the sewer line, potentially causing a break.” To mitigate this potential problem, the city completed a riverbank stabilization project under FEMA’s Hazard Mitigation Grant Program to protect the main sewer line that was identified as vulnerable to flooding and failure. That line was unimpacted by the recent flash flooding in September and the stabilization work is still intact while other infrastructure in the area suffered significant flood damages. In addition to illustrating the potential impacts of a recent flooding event on a WWTF, this example - of identifying a risk to increased flooding and consequent mitigation measure - exemplifies the process that EPA envisions for the Adaptation Plan.

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

## **B. Requirement to Develop an Adaptation Plan**

To support the Permittee’s<sup>22</sup> development of an Adaptation Plan, EPA Region 1 has developed a companion document: *Recommended Procedures and Resources for the Development of Adaptation Plans* (“Recommended Procedures”)<sup>23</sup> to assist owners and operators of wastewater treatment systems and/or sewer systems to develop adaptation plans that meet the requirements included in Region 1 NPDES permits. The document provides recommendations and procedures for the use of a free EPA tool developed specifically for water utilities. Permittees may use the recommended tool and the associated procedures, or they may use other approaches providing comparable analyses, as discussed in more detail below, to satisfy permit requirements.

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

<sup>20</sup> Derrick Bryson Taylor and Johnny Diaz, “Massachusetts Cities Declare Emergency After ‘Catastrophic’ Flash Flooding” <https://www.nytimes.com/2023/09/12/us/leominster-massachusetts-flash-flooding.html>

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

<sup>22</sup> For brevity, this document refers to “Permittee” throughout; however, this reference also includes all “Co-Permittee(s)” subject to the applicable permit requirements.

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

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

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

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

- The permit requires the Permittee to develop an implementation schedule rather than specify a particular schedule for implementation. EPA notes that the permit also requires that the Permittee report annually on “any progress made toward implementation of adaptive measures.” This leaves the Permittee free to evaluate other considerations when determining when and how to implement adaptive measures. EPA encourages Permittees to move forward with implementation actions that address the vulnerabilities identified as part of its Adaptation Plan in as timely a manner as possible and to prioritize addressing the most impactful vulnerabilities.<sup>24</sup>
- Permittees who wish to comply with this permit requirement through prior assessments must explain how its prior assessments specifically meet the requirements of the permit. The permit allows such assessments that were undertaken in the last 5 years to be used, as long as they meet certain conditions specified in the permit.
- EPA uses certain minimum standards (e.g., use of FEMA Flood Standards) and other terminology that is defined in and consistent with the federal flood standards, to ensure

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



eligibility for federal funding as well as SRF funding.<sup>25</sup> The permit requires that the Permittee evaluate asset vulnerability using “baseline conditions” and “future conditions.” The permit defines baseline conditions as the 100-year flood based on historical records and future conditions as projected flood elevations using one of two approaches consistent with the federal flood standards.

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

- The permit requires evaluating the vulnerability of assets once during the permit term (during the development of the Adaptation Plan). Additional revisions of the Adaptation Plan during the permit term would only be required during the permit term if there has been a significant change to the infrastructure of the system to update the description of the assets removed or updated, to incorporate any new assets into the documentation, and describe any effects these changes have on the asset and/or system vulnerability.
- In light of security concerns posed by the public release of information regarding vulnerabilities to wastewater infrastructure, Permittees are not required to submit Component 1 and 2 and instead must keep that documentation on file and available for inspection or review by EPA upon request. In all other submittals (Component 3 and future annual reports), the Permittee shall provide information only at a level of generality that indicates the overall nature of the vulnerability but omitting specific information regarding such vulnerability that could pose a security risk.
- Regarding timing, EPA considers that the permit allows adequate time to initiate the necessary funding and procurement processes (which EPA understands must line-up with local requirements which can take place over many months or even years) in order to develop the plans (either in-house or through professional engineering services) without significantly impacting other ongoing municipal projects.

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<sup>25</sup> “Re-Instatement of Federal Flood Risk Management Standard for State Revolving Fund Programs,” Thompkins, Anita Maria and Stein, Raffael to Water Division Directors (April, 2022) <https://www.epa.gov/dwsrf/federal-flood-risk-management-standard-srf-programs>

- Regarding annual reporting, the first report is due on March 31 following the completion of Component 1 of the Adaptation Plan. As described above, flood and major storm events are a significant threat to water quality. An annual reporting requirement is therefore appropriate to facilitate Adaptation Planning and, ideally, the implementation of an Adaptation Plan occurring as promptly and as efficiently as possible.
- Regarding the cost of developing the Adaptation Plan, there are costs and other resources that Permittees must allocate to comply with all permit requirements. EPA considers proper operation and maintenance of the WWTs as well as the collection system to include addressing major storm and flood events that would impair operation of the system. EPA acknowledges that the Permittee will incur costs and other potential resource expenditures to develop a plan related to these events but considers these expenditures to be necessary in order to prevent impacts during such events (e.g., bypass, upset or failure of the WWTs, overflow, or increased inflow and infiltration in the sewer system, and discharges of pollutants that exceed effluent limits), which would adversely affect human health or the environment.

However, EPA appreciates the regulated community's concerns regarding costs as described below.

1. In order to minimize costs and provide additional clarity to Permittees, EPA has developed a companion document, *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*, ("Recommended Procedures"), which a Permittee could elect to use to guide it through development of the Adaptation Plan. The document instructs Permittees on the use of EPA's CREAT tool, which is free to use by Permittees and will help Permittees navigate through much of the analysis needed to develop an Adaptation Plan. It is EPA's intention that a Permittee could use these tools to develop an Adaptation Plan in an effort to reduce costs and possibly to eliminate or reduce the need to hire external contractors.
2. As mentioned above, the permit that allows credit for prior work to eliminate potentially costly duplication of efforts.
3. It is EPA's intention to provide Permittees with technical assistance for the development of the Adaptation Plan. EPA has many on-line training tools,<sup>26</sup> some of which have been utilized by New England WWTs<sup>27</sup> and also plans (in accordance with available funding and agency priorities) to offer: a New England-based virtual workshop training series for WWTs operators and others on the use of the CREAT tool which EPA expects will commence in early 2024 (which will be recorded to maximize its utility for those who may want to access the information at a later date);

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<sup>26</sup> <https://www.epa.gov/crwu/training-and-engagement-center>; see also, the Resources Section in the *Recommended Procedures* for additional resources that Permittees might find useful.

<sup>27</sup> See [https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea\\_March\\_2016.pdf](https://toolkit.climate.gov/sites/default/files/Manchester-by-the-Sea_March_2016.pdf); ]; see also, the Resources Section of the *Recommended Procedures* document for more New England case studies and other useful resources.

in-person technical assistance sometime in mid-2024 and telephone assistance on the use of the CREAT tool. In recommending Permittees use this tool and by providing procedures for using it, EPA hopes to both enable Permittees to develop robust Adaptation Plans themselves, but also to reduce the costs, including the costs associated with outside contractors.

4. Additionally, EPA notes that there may be federal, state or local funding sources available to assist entities with adaptation planning.<sup>28</sup>
- With regards to the cost of implementing adaptation measures, the selection and deadlines for implementing specific adaptation measures are not included as requirements in the permit since those will only be known after the completion of the Adaptation Plan. EPA expects that the Permittee will begin implementation of those measures in the coming years. However, since the Permittee will be setting the prioritizations and scheduling for implementing the measures based on their own risks and vulnerabilities to major storm and flood events, they may incorporate affordability and funding availability into their considerations.

EPA notes, that in developing the Adaptation Plan, the Permittee may, as part of the process, be comparing the potential economic costs of the baseline condition, or “no action alternative,” with those of possible adaptation measures, under current and predicted risks of major storm and flood events. This option is available in the use of the adaptation planning approach as outlined in the companion document to this permit entitled *Recommended Procedures and Resources for the Development of Adaptation Plans for Wastewater Treatment Systems and/or Sewer Systems*.<sup>29</sup> Depending on site-specific circumstances, the Permittee may find that the cost of not implementing adaptation measures is greater than the cost of implementing them.

### C. Legal Authority

The Adaptation Plan permit conditions are necessary to further the overarching goal of the CWA<sup>30</sup> “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” and derive from the same authorities as all other standard operation and maintenance requirements. CWA § 101(a), 40 C.F.R. §§ 122.41(d), (e), (n). The Adaptation Plan requirements are an iterative update to EPA’s standard O&M permit provisions and intend to address serious and increasingly prevalent threats to Permittees’ compliance with permit effluent limitations. As illustrated by the recent examples detailed in Section A, major storm and flood events can

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

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

<sup>30</sup> Congress has recently expressly affirmed that natural hazard adaptation measures for POTWs appropriately fall within the scope of the CWA: Congress added section 223 to the CWA via the Infrastructure Investment and Jobs Act, creating a grant program to support, *inter alia*, “the modification or relocation of an existing publicly owned treatment works, conveyance, or discharge system component that is at risk of being significantly impaired or damaged by a natural hazard[.]” Pub. L. 117-58, 135 Stat. 1162 (codified at 33 U.S.C. § 1302a(c)(4))(2021).

gravely impact discharges from WWTs and thus water quality. That is, plant and/or sewer system failure due to storms, increased precipitation/floods, storm surge, and sea level rise can and do lead to bypasses, upsets, and violations of some or all of the permit limits, including water quality-based limits and limits based on secondary treatment standards. The Adaptation Plan is designed to reduce and/or eliminate noncompliant discharges that result from impacts of major storm or flood events through advanced planning and adaptation measures and is authorized by both EPA regulations and the CWA.

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

EPA's O&M regulations authorize EPA to impose the Adaptation Plan requirement. 40 C.F.R. § 122.41(e) ("Proper operation and maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit.") Proper operation and maintenance of the permitted facilities and systems inherently includes adaptation planning. As illustrated in the examples in Section A, if a WWTs is unable to operate properly as designed due to impacts from a major storm or flood event, the discharge of pollutants in violation of both its permit and applicable water quality standards is highly likely to occur and with increasing frequency. In other words, the Permittee cannot satisfy its obligation to operate properly "at all times" if it cannot do so during and after major storms or flooding events. The new Adaptation Plan requirements are an iterative extension of the previous permit's requirements that "The permittee will maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure." Major storm and flood events represent an increasing cause of WWTs malfunctions and failures and thus EPA added the Adaptation Plan requirements to the O&M requirements to more specifically address this issue.

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

and maintain all facilities and the duty to take all reasonable steps to minimize or prevent any discharge in violation of the permit. 40 C.F.R. § 122.41(d), (e).

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

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

45 Fed. Reg. 33290, 33303-04 (May 19, 1980). In 1980 and now, the proper operation and maintenance of a facility – including the Adaptation Plan requirements – effectuates the permit limits on all addressed pollutants and protects all applicable water quality standards, as they assure that such limits will be met, even in times of major storms or during flood events. CWA § 402(a)(2). It is well-established that EPA may include specific permit conditions that ensure the preconditions or assumptions underlying EPA’s pollutant effluent flow calculations remain constant, thus ensuring the permit, as a whole, assures compliance with WQS and other applicable CWA requirements. *See In re: City of Lowell*, 2020 WL 3629979 at \*35, 18 E.A.D. 115, 156 (EAB 2020) (affirming effluent flow limit as a proper exercise of the Agency’s 40 C.F.R. § 122.41(e) authority in part on the basis that the permit’s pollutant effluent limits were calculated based on a presumed maximum wastewater effluent discharge from the facility, and thus “If flow limits exceed the assumed maximum flow, ... then the Region may have erroneously concluded that a pollutant did not have a reasonable potential to cause or contribute to an exceedance of water quality standards or that the permit’s pollutant effluent limits assure compliance with Massachusetts’ water quality standards.”) Likewise, the Adaptive Plan O&M requirements ensure the basic, necessary preconditions (i.e., the plant’s operability) to compliance with the permit’s effluent limits and other requirements of the CWA. Given the importance of WWTS and sewer system operability to compliance with this NPDES permit, it is not unreasonable for EPA to impose the Adaptation Plan O&M requirements. *C.f. In re Avon Custom Mixing Services, Inc.*, 17 E.A.D. 700, 709 (EAB 2002) (“Given the importance of monitoring to the integrity of NPDES permits, and the broad authority the CWA confers on the Region to impose monitoring requirements in NPDES permits, it does not strike us as unreasonable that the Region has decided to include new monitoring requirements in the reissued permit.”)

The EAB has affirmed the Agency’s authority to require the preparation and submission of a plan as part of the Operation & Maintenance requirements of an NPDES permit. *In Re City of Moscow, Idaho*, 10 E.A.D. 135, 169-172 (EAB 2001) (affirming O&M permit provision that required development and submission of a quality assurance project plan, “[t]he primary purpose of [which] shall be to assist in planning for the collection and analysis of samples in support of the permit...”<sup>31</sup> under the O&M regulations, stating “it seems plain that the CWA and its implementing regulations authorize the Region to include permit requirements like the QAPP here in conjunction with the ultimate goal of assuring compliance with the CWA.”). Like the

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<sup>31</sup> NPDES Permit issued to City of Moscow, Idaho, Part I.E (March 12, 1999) (available at: <https://www2.deq.idaho.gov/admin/LEIA/api/document/download/15509>)

O&M planning requirement in *Moscow*, the primary purpose of the Adaptation Plan in this permit is to assist in planning for compliance with the permit – in this instance, by ensuring the facility remains operable even during flooding or other major storm events – and the ultimate goal of the requirement is to assure compliance with the CWA.

40 C.F.R. § 122.41(d) also authorizes EPA to impose the Adaptation Plan requirement. (“Duty to mitigate. The Permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.”) It is a reasonable step for EPA to require a Permittee to create an Adaptation Plan to minimize facility disruptions during major storm and flood events. For example, if a Permittee identifies that an asset critical to its WWTs is extremely vulnerable to a major storm and that loss of the asset would result in the inoperability of the WWTs and thus discharges in violation of permit limits, then mitigating those risks reasonably minimizes or prevents harmful discharges in violation of the permit.

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

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

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

EPA acknowledges that there are many possible approaches and that there are other programs that require resiliency planning. However, because adaptation planning is a critical step in complying with the permit's effluent limitations, EPA has determined that it is appropriate to include the Adaptation Plan requirements in the permit itself even if similar requirements also derive from other obligations. Major storm and flood events are of urgent concern, and EPA does not believe it would be sufficient to rely entirely on non-Permit obligations to address these threats to the proper operation and maintenance of WWTSS and/or sewer systems, especially because not all Permittees may otherwise be obligated to engage in adaptation planning, or may not be required to do so at this time. EPA has determined that planning for major storm and flood events must be done by all facilities now to avoid negative impacts. In recognition of the fact that Permittees may complete similar assessments to satisfy other obligations, the permit allows the Permittee to use qualifying assessments done for other programs or obligations to satisfy some or all of the components of the Adaptation Plan requirements. EPA considers its approach to be appropriate and reasonable to ensure consistent operation and maintenance of permitted facilities. Therefore, EPA will require Adaptation Plans be developed under NPDES permits for all wastewater treatment plants in Massachusetts and New Hampshire.

## Appendix D

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

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

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

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."<sup>11</sup>

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

In light of these policy objectives and legal requirements, it is EPA Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and

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



water quality impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety is subject to NPDES regulation as a point source discharger under the Act. This entails imposition of permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

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

## Attachment A

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

- |                  |  |
|------------------|--|
| <i>Exhibit A</i> | List of regional centralized POTW treatment plants and municipal satellite collection systems subject to the co-permittee policy |
| <i>Exhibit B</i> | Analysis of extraneous flow trends for representative systems  |
| <i>Exhibit C</i> | Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems            |

#### Introduction

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

- (1) Is the scope of NPDES authority limited to owners/operators of the treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that comprise the wider POTW?
- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the "collection system" end and the "user" begin?
- (3) Do municipal satellite collection systems "discharge [ ] a pollutant" within the meaning of the statute and regulations?

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<sup>2</sup> The decision is available on the Board's website via the following link:  
[http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument).

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

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

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

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

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

## I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that is designed to collect and convey only sanitary wastewater (domestic sewage from homes as well as industrial and commercial wastewater).<sup>3</sup> The purpose of these systems is to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur

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

during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt— that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

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

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

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

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

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

most serious and widespread operational challenges confronting treatment works.<sup>4</sup>

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

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

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

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

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

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<sup>4</sup> In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem).

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

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

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

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

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

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

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

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

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

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.<sup>5</sup> In light of its past permitting experience and the need to effectively address

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<sup>5</sup> Although EPA Region 1 has in the past issued NPDES permits only to the legal entities owning and operating the wastewater

the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to encompass all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).<sup>6</sup> Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes, in addition to the owner/operator of the treatment plant as the main permittee subject to the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 36 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A*. The 36 permits include a total of 81 satellite collection systems as co-permittees.

### III. Legal Authority

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

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

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

The CWA prohibits the "discharge of any pollutant by any person" from any point source to

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

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



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

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

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

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated

wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

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

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

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

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

Consistent with EPA Region 1’s interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.<sup>8</sup>

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<sup>7</sup> “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW treatment plant” will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system.”

<sup>8</sup> See, *e.g.*, *United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) (“We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington’s sewer is

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

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

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

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

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region’s approach insofar as its purpose is to be a common carrier of wastewater for others to a POTW treatment plant for treatment. The use of this primary purpose test (*i.e.*, common sewer installed as a recipient and carrier waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW’s collection system and user. This test would exclude, for example, branch drainpipes that collect and transport wastewater from fixtures in a commercial building or public school to the common lateral sewer. This type of infrastructure would not be considered part of the collection system, because it is not designed to be a common recipient and carrier of wastewaters from other users. Rather, it is designed to transport its users’ wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA’s reliance on the definition of “sewage collection system” from outside the NPDES

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included in the definition because it conveys waste water to the Massachusetts Water Resource Authority’s treatment works.”); *Shanty Town Assoc. v. Env’tl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) (“As defined in the statute, a ‘treatment work’ need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.”) (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of “treatment work”).

regulations for interpretative guidance is reasonable as the construction grants regulations at 40

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

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

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

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

“Discharge of a pollutant” at 40 C.F.R. § 122.2 is also defined to include “... discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person *which do not lead to a treatment works.*”(emphasis added). Some municipal collection systems have argued that this sentence means that only municipal discharges that do not lead to a “treatment plant” fall within the scope of “discharge of a pollutant.” They further argue that because discharges through satellite collection systems do lead to a treatment plant, such systems do not “discharge [] pollutant[s]” and therefore are not subject to the NPDES permit

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

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

requirements. This argument is flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste”).

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

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

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

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

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

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

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

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

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

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

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

with the “only if” language in the preceding sentence of the regulatory definition).

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

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

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

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

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

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

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

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

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

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



system than the point of discharge—is a logical implication of the regulations and serves to effectuate the statute.

Without imposing conditions on the satellite communities, standard permit conditions applicable to all NPDES permits by regulation cannot be given full effect. To illustrate, there is no dispute that the operator of the POTW treatment plant and outfall is discharging pollutants within the meaning the CWA and, accordingly, is subject to the NPDES permit program. NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to properly operate and maintain “all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” *Id.* at § 122.41(d), (e). EPA regulations also require additional conditions applicable to specified categories of NPDES permit, including “Publicly owned treatment works.” *See id.* at § 122.42(b). A municipal satellite collection system, as demonstrated above, falls within the regulatory definition of a POTW. In light of EPA’s authority to require appropriate operation and maintenance of collection systems necessary to achieve compliance with an NPDES permit, and because the operator of the POTW treatment plant may not own or operate a significant portion of the wider treatment works (*i.e.*, the collection systems that send flow to the POTW treatment plant), it is appropriate, and in some cases necessary, to extend pertinent, mandated standard conditions to all portions of the POTW, which is subject to regulation in its entirety.

The alternative of allowing state and local jurisdictional boundaries to place significant portions of the POTW beyond the reach of the NPDES permitting program would not only be inconsistent with the broad statutory and regulatory definition of the term POTW but would impede Region 1 from carrying out the objectives of the CWA. It would also, illogically, preclude the Region from imposing on POTWs standard conditions EPA has by regulation mandated for those entities.

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

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

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

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

EPA Region 1 also took notice of federal listening session materials on the June 2010 proposed SSO rule and associated model permits and fact sheet. The position articulated by EPA in these model documents—specifically the application of standard NPDES conditions to municipal satellite collection systems—generally conform to Region 1's co-permitting approach.

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

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**Exhibit A**

<b>Permit Number</b>	<b>Permittee</b>	<b>Co-permittees</b>	<b>Issue Date with Co-permittees</b>
MA0100404	Massachusetts Water Resources Authority – Clinton	Town of Clinton Lancaster Sewer District	September 27, 2000
MA0101010	City of Brockton	Town of Abington Town of Whitman	May 11, 2005
MA0100412	Westborough Wastewater Treatment Plant	Town of Westborough Town of Shrewsbury Town of Hopkinton	May 20, 2005
MA0100480	City of Marlborough	Town of Northborough	May 26, 2005
MA0100447	Greater Lawrence Sanitary District	City of Lawrence, Town of Andover, Town of North Andover, Town of Methuen, Town of Salem, NH	August 11, 2005
MA0100633	Lowell Regional Wastewater Utilities	Town of Chelmsford, Town of Dracut Town of Tewksbury Town of Tyngsborough	September 1, 2005
MA0100064	Pepperell Wastewater Treatment Plant	Town of Groton	December 22, 2005
MA0100439	Town of Webster Sewer Department	Town of Dudley	March 24, 2006
MA0100455	Town of South Hadley, Board of Selectmen	Town of Granby, Town of Chicopee	June 12, 2006
MA0100617	City of Leominster (NPDES Permit No. MA0100617)	Town of Lunenburg Town of Lancaster	September 28, 2006
MA0100510	Hoosac Water Quality District	Town of Williamstown Town of North Adams Town of Clarksburg	September 28, 2006
MA0101036	Board of Public Works, North Attleborough	Town of Plainville	January 4, 2007
NH0100544	Town of Sunapee	New London Sewer Commission	February 21, 2007
MA0100552	Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	Town of Nahant Town of Swampscott Town of Saugus	March 3, 2007

Permit Number	Permittee	Co-permittees	Issue Date with Co-permittees
NH0100331	City of Concord	Boscawen Board of Selectmen	June 29, 2007
NH0100790	City of Keene (NPDES Permit No. NH0100790)	Town of Marlborough, NH Swanzey Sewer Commission	August 24, 2007
NH0100625	Town of Hampton	Rye Sewer Commission	August 28, 2007
NH0100161	Town of Merrimack, NH	Town of Bedford	September 25, 2007
MA0101621	City of Haverhill	Town of Groveland	December 5, 2007
MA0101681	City of Pittsfield, Department of Public Works	Town of Dalton Town of Lenox Town of Hinsdale Town of Lanesborough Town of Richmond	August 22, 2008
NH0100447	City of Manchester	Town of Goffstown Town of Bedford Town of Londonderry	September 25, 2008
MA0100781	City of New Bedford	Town of Acushnet Town of Dartmouth	September 28, 2008
MA0101818	City of Northhampton	Town of Williamsburg	September 30, 2008
NH0100960	Winnepesaukee River Basin Program Wastewater Treatment Plant	Town of Belmont Town of Center Harbor City of Franklin Town of Gilford City of Laconia Town of Meredith Town of Northfield Town of Tilton	June 19, 2009
MA0101800	City of Westfield	Town of Southwick	September 30, 2009
MA0101231	Hull Permanent Sewer Commission	Cohasset Sewer Commission Hingham Sewer Commission	September 1, 2009
MA0100994	Gardner Department of Public Works	Town of Ashburnham	September 30, 2009
MA0102598	Charles River Pollution Control District	Town of Franklin Town of Medway Town of Millis Town of Bellingham	July 23, 2014

<b>Permit Number</b>	<b>Permittee</b>	<b>Co-permittees</b>	<b>Issue Date with Co-permittees</b>
MA0101702	MFN Region Wastewater District	Town of Mansfield Town of Norton Town of Foxboro	September 11, 2014
MA0100897	Taunton Wastewater Treatment Plant	Town of Raynham Town of Dighton	April 10, 2015
NH0100366	City of Lebanon, NH	Town of Enfield	September 30, 2015
NH0100099	Town of Hanover, NH	City of Lebanon	November 18, 2015
MA0100501	South Essex Sewerage District	City of Beverly, Town of Danvers Town of Marblehead City of Peabody City of Salem	May 5, 2016
NH0100471	Town of Milford, NH	Town of Wilton Sewer Commission	August 31, 2020
MA0101613	Springfield Regional Wastewater Treatment Facility	Town of Agawam Town of East Longmeadow Town of Longmeadow Town of Ludlow Town of West Springfield Town of Wilbraham	September 30, 2020
NH0101390	Town of Allenstown, NH	Town of Pembroke Sewer Commission	November 29, 2021
NH0100901	Town of Concord - Concord Hall Street Wastewater Treatment Facility	Town of Bow	July 1, 2022
MAG590000	2022 Medium Wastewater Treatment Facilities General Permit	(as authorized)	September 28, 2022

## Exhibit B

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

#### I. Representative POTWS

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

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

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

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

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

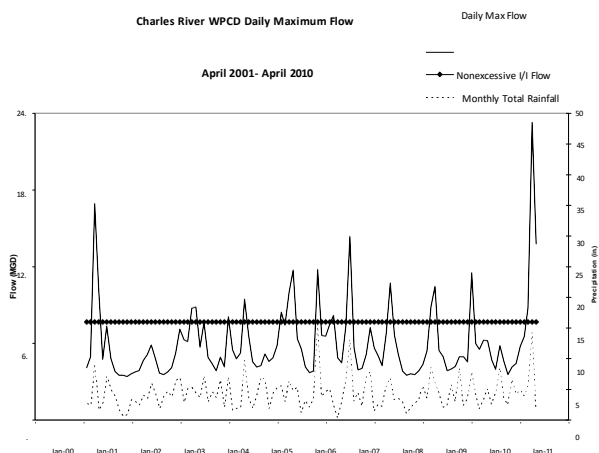
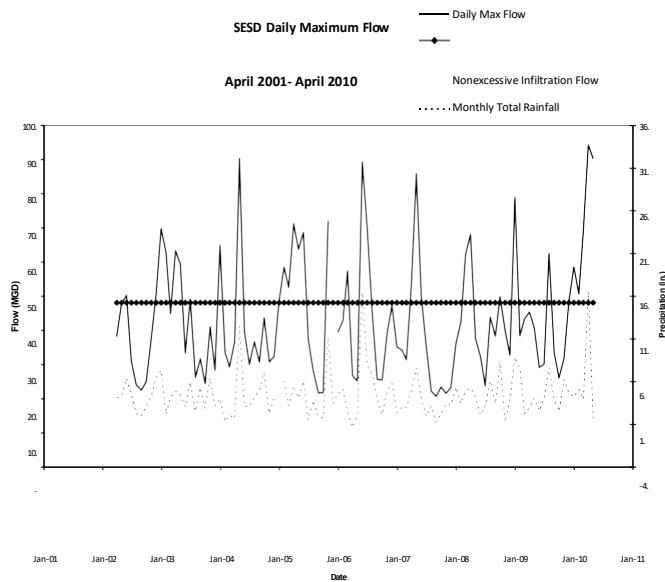


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



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

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

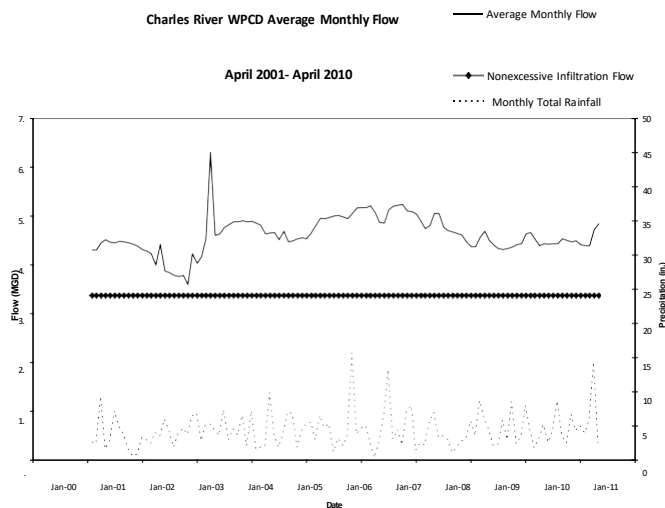
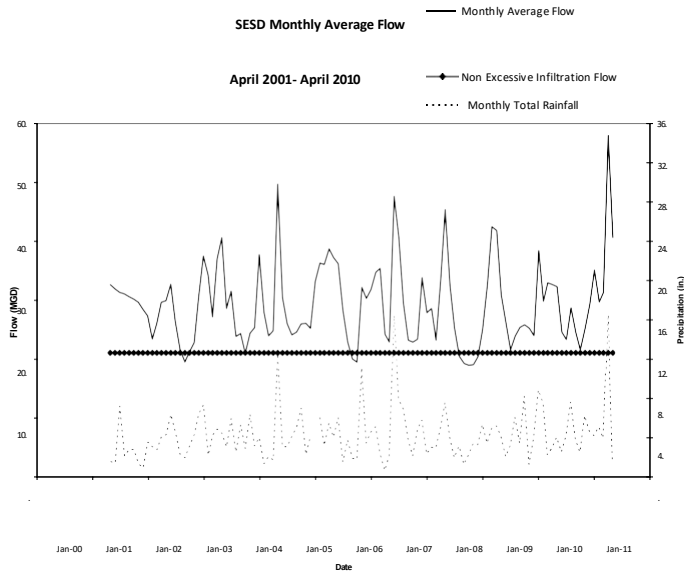


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



## II. Flow Trends

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

Figure 5. CRPCD Daily Maximum Flow Trend

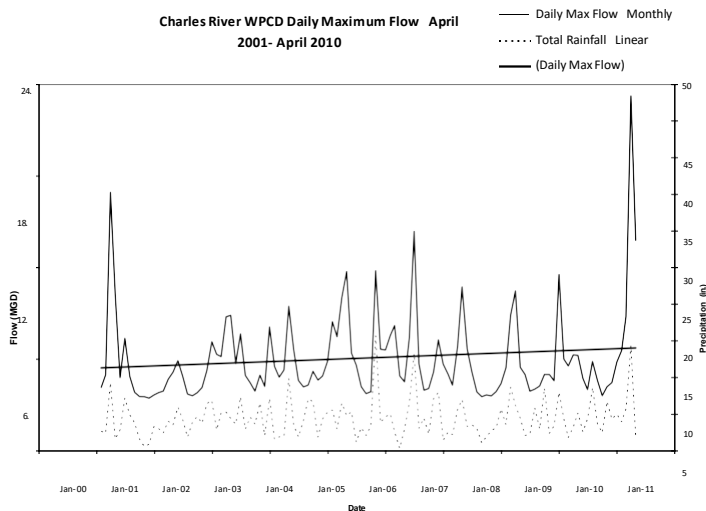
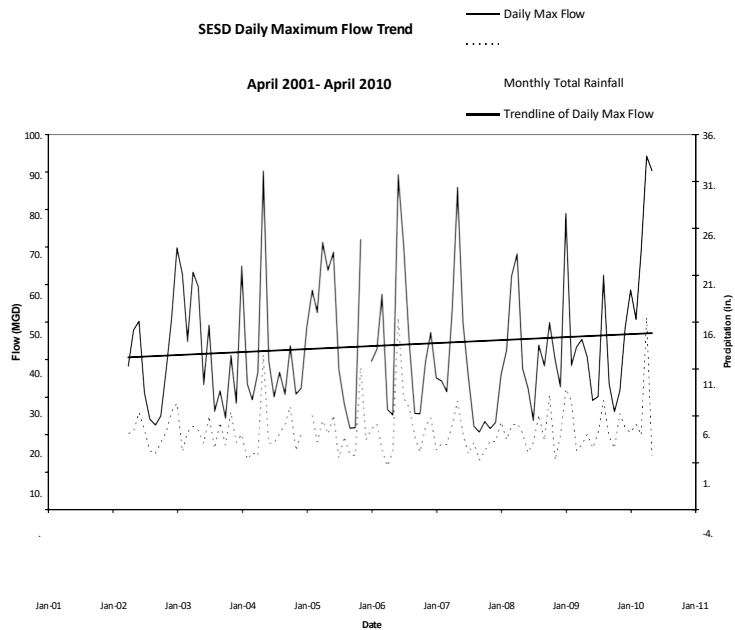




Figure 6. SESD Daily Maximum Flow Trend



### III. Violations Associated with Wet Weather Flows

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

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations

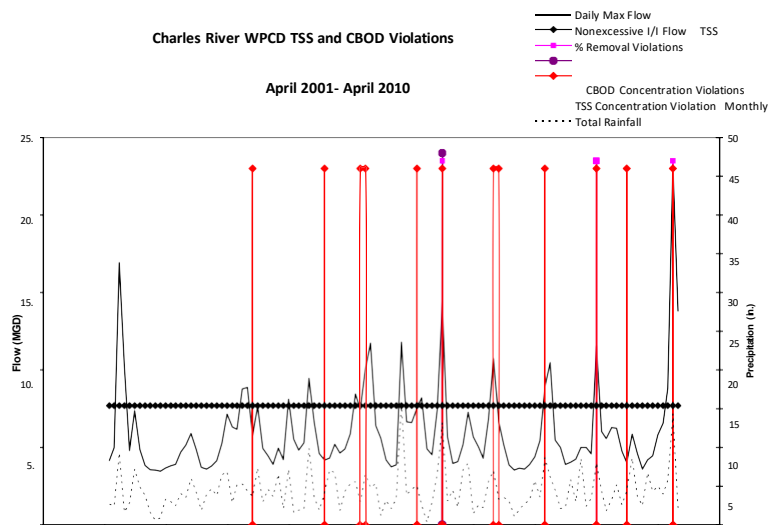
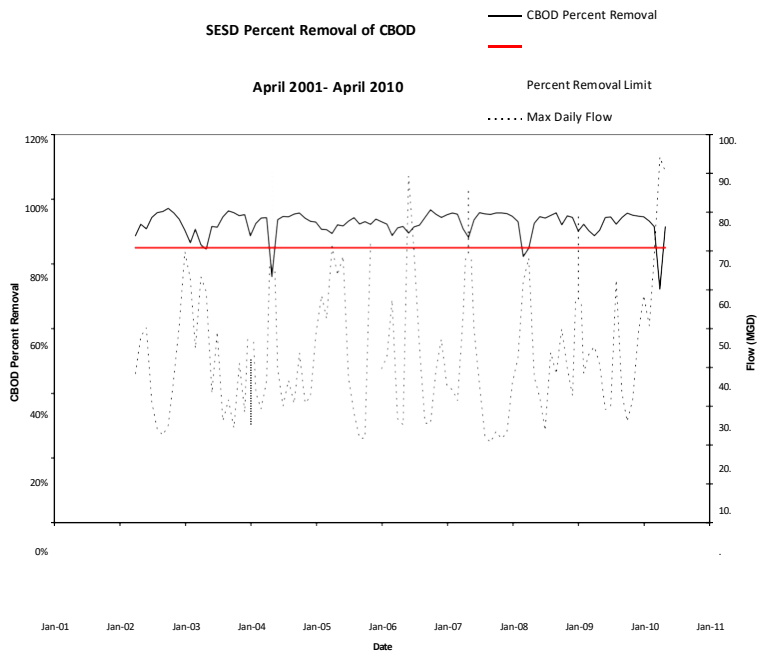


Figure 8 shows SESD’s results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three permit violations where CBOD removal fell below 85%, all during months with high Maximum Daily Flows.

Figure 8. SESD CBOD Percent Removal



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

## **Exhibit C**

### Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems



#### **REGION 1**

BOSTON, MA 02109

#### **Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]**

Dear \_\_\_\_\_:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Permit Contact] at <mailto:permit.writer@epa.gov> or 617-918-XXXX.

Sincerely,

Regional Administrator

**Nashua Annual CSO Discharge Data Summary (2019-2023)**

<b>2019</b>			<b>2020</b>		<b>2021</b>		<b>2022</b>		<b>2023</b>	
<b>Outfall</b>	<b>Flow<sup>1</sup></b>	<b>Duration<sup>2</sup></b>	<b>Flow<sup>1</sup></b>	<b>Duration<sup>2</sup></b>	<b>Flow<sup>1</sup></b>	<b>Duration<sup>2</sup></b>	<b>Flow<sup>1</sup></b>	<b>Duration<sup>2</sup></b>	<b>Flow<sup>1</sup></b>	<b>Duration<sup>2</sup></b>
002	0	0	0	0	0.0000	0	ND	ND	0.000	0
003	0.161	505	0.0523	340	0.4997	630	0.004	265	1.135	880
004	4.005	1095	2.126	240	3.1890	495	0.067	60	1.692	430
005	6.715	585	0.194	110	3.6930	565	0.080	40	5.656	660
006	6.688	520	2.041	100	8.5380	510	0.002	10	11.025	480
007	0.203	25	0	0	0.0000	0	ND	ND	0.000	0
008	0.838	1360	0.223	760	1.1940	2020	0.538	1695	1.027	1962
009	0.000	0	0.001	10	0.0070	60	0.001	15	0.016	95
014	27.053	1100	5.723	370	32.6880	940	3.809	280	31.119	765
<b>TOTAL</b>	<b>45.7</b>	<b>5,190</b>	<b>10.360</b>	<b>1,930</b>	<b>50</b>	<b>5,220</b>	<b>4.501</b>	<b>2,365</b>	<b>52</b>	<b>5,272</b>

<sup>1</sup>Flow = Total Flow (Millions of gallons)<sup>2</sup>Duration = Max. #Minutes

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY-REGION 1 (EPA)  
WATER DIVISION  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109

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

JOINT EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED; AND NHDES PUBLIC NOTICE OF ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: **December 18, 2024 – February 3, 2025**

PERMIT NUMBER: **NH0100170**

NAME AND MAILING ADDRESS OF APPLICANT:

City of Nashua  
9 Riverside Street  
Nashua, NH 03062

NAME AND MAILING ADDRESS OF CO-PERMITTEE:

Town of Hudson  
Department of Public Works  
2 Constitution Drive  
Hudson, NH 03051

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Nashua Wastewater Treatment Facility (WWTF)  
Sawmill Road  
Nashua, NH 03060 and 9 combined sewer overflow (CSO) outfalls

RECEIVING WATER:

Merrimack River (WWTF Outfall 001 and CSO Outfalls 002 through 005; 014) (Hydrologic Unit Code 010700061206)  
Nashua River (CSO Outfalls 006 through 009) (Hydrologic Unit Code 010700040402)  
Merrimack River Watershed, Class B (both)

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Nashua Wastewater Treatment Facility which discharges treated domestic, industrial and commercial

wastewater. The Town of Hudson is a co-Permittee for certain parts of the Permit. Sludge from this facility is treated on-site to produce digested biosolids and then loaded into trucks for distribution to farms within the state for land application as a soil enhancer. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at Env-Wq 1700 et seq. NHDES cooperated with EPA in the development of the Draft NPDES Permit. NHDES plans to adopt EPA's permit under Chapter 485-A of the New Hampshire Statutes (NH RSA 485-A:13, I(a)). NHDES retains independent authority under State law to publish their CWA § 401 certification public notice separately from EPA's permit.

#### INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at <https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits> or by contacting:

Meridith Finegan  
Telephone: (617) 918-1533  
[Finegan.meridith@epa.gov](mailto:Finegan.meridith@epa.gov)

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

#### PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by **February 3, 2025**, which is the close of the public comment period. Comments, including those pertaining to NHDES proposed issuance of a State Surface Water Permit, should be submitted to the EPA contact at the address or email address listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the public comment period, EPA will make all comments available to NHDES.

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

In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

FINAL PERMIT DECISION:

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

KEN MORAFF, DIRECTOR  
WATER DIVISION  
UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION I

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