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"),

Nylon Corporation of America

is authorized to discharge from a facility located at

Nylon Corporation of America
33 Sundial Avenue
Manchester, NH 03103

to receiving water named

Merrimack River
Merrimack River Watershed

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

This Permit shall become effective on [DATE].[1]

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

This Permit supersedes the Permit issued on August 1, 2019.

This Permit consists of this **cover page**, **Part I**, **Attachment A,** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment B,** List for Pollutant Scans, and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

[1] Pursuant to 40 Code of Federal Regulations (CFR) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the Permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge non-contact cooling water from heat exchangers, vacuum pumps, and reactor vessel components and filter backwash water through Outfall Serial Number 004 to the Merrimack River. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Effluent Flow[6]	Report MGD	1.44 MGD	Continuous	Meter
pH[7]	6.5 - 8.0 S.U.		1/Week	Grab
pH of upstream receiving water[8]	Report	Report	1/Week	Grab
Temperature, June to September	---	95.0°F	3/Week	Grab
Temperature, October to May	---	83.0°F	1/Week	Grab
Total Residual Chlorine (TRC)[9]	1.0 mg/L	1.0 mg/L	1/Week	Grab
Oil & Grease	---	15 mg/L	1/Quarter	Grab
Total Suspended Solids	30 mg/L	100 mg/L	1/Quarter	Grab
Pollutant Scan[10]	---	Report µg/L	1/Year	Composite
Whole Effluent Toxicity (WET) Testing[11,12]				
C-NOEC	---	Report %	1/year	Composite
LC_{50}	---	Report %	1/year	Composite
Hardness	---	Report mg/L	1/year	Composite
Ammonia Nitrogen	---	Report mg/L	1/year	Composite
Total Aluminum	---	Report mg/L	1/year	Composite
Total Cadmium	---	Report mg/L	1/year	Composite

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Total Copper	---	Report mg/L	1/year	Composite
Total Nickel	---	Report mg/L	1/year	Composite
Total Lead	---	Report mg/L	1/year	Composite
Total Zinc	---	Report mg/L	1/year	Composite

Ambient Characteristic[13]	Reporting Requirements		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Hardness	---	Report mg/L	1/year	Grab
Ammonia Nitrogen	---	Report mg/L	1/year	Grab
Total Aluminum	---	Report mg/L	1/year	Grab
Total Cadmium	---	Report mg/L	1/year	Grab
Total Copper	---	Report mg/L	1/year	Grab
Total Nickel	---	Report mg/L	1/year	Grab
Total Lead	---	Report mg/L	1/year	Grab
Total Zinc	---	Report mg/L	1/year	Grab
Dissolved Organic Carbon[14]	---	Report mg/L	1/year	Grab
pH[15]	---	Report S.U.	1/year	Grab
Temperature[15]	---	Report °C	1/year	Grab
Pollutant Scan[10]	---	Report µg/L	1/Year	Composite
Aesthetics[16] (DMR Attachment)	---	Report	1/Quarter	Observation

Footnotes are listed in Pages 4 through 6.

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken at the discharge point prior to discharge to the Merrimack River, prior to co-mingling with any other wastestream. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA). The Permittee shall report the results to EPA and the New Hampshire Department of Environmental Services (the "State") of any additional testing above that required herein, if testing is done in accordance with 40 CFR Part 136.

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

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).

4. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. Each composite sample will consist of at least eight grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

6. Effluent flow shall be reported in million gallons per day (MGD).

7. The pH shall be within the specified range at all times except when otherwise allowed under Part I.C.1. of the Permit. When the pH range is outside of the specified range and Part I.C.1.b applies, results of the ambient pH sample obtained to demonstrate compliance with this limit shall be reported in the discharge monitoring report (DMR). When required, the ambient sample shall be taken within one (1) hour of the effluent sample and the permittee must specify to which weekly sample the ambient sample corresponds. If the pH is within the specified range, the Permittee shall report an appropriate NODI code for background pH.

8. Upstream receiving water monitoring and reporting is required if the permittee is demonstrating compliance of its effluent's pH in accordance with Part I.C.1.b of this permit.

9. TRC is required only when any municipal water is used as a source of NCCW and is discharged to this outfall. For the purposes of this permit, TRC analysis must be completed using a test method in 40 C.F.R. § 136 that achieves a ML no greater than 30 µg/L.

10. During the third calendar quarter of each year, the Permittee shall concurrently monitor both the effluent and the receiving water (immediately upstream of the discharge) for all the pollutants listed in **Attachment B**. All effluent and ambient results shall be reported in NetDMR for the quarterly DMR report due by October 15 of each year.

11. The Permittee shall conduct chronic toxicity tests once per year in accordance with test procedures and protocols specified in **Attachment A** of this permit. C-NOEC is defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected and tests completed during the calendar quarter ending September 30th. The WET test results shall be reported in the September DMR, due October 15th. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal that includes the results for that toxicity test.

12. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A**, Section IV., DILUTION WATER. Even where alternate dilution water has been used, the results of the receiving water control (0% effluent) analyses must be reported. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

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

14. Monitoring and reporting for dissolved organic carbon (DOC) is not a requirement of the Whole Effluent Toxicity (WET) tests but is an additional requirement. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

15. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

16. Once per quarter, 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 quarter. Rather, an annual summary of all 4 quarterly results shall be submitted as an electronic attachment to the December DMR by each January 15th for the previous calendar year.

Part I.A. continued.

2. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify EPA as soon as they know or have reason to believe (40 CFR § 122.42):

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) 100 micrograms per liter (µg/L);
(2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (mg/L) for antimony;
(3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
(4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State regulations.

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) 500 µg/L;
(2) One mg/L for antimony;
(3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
(4) Any other notification level established by EPA in accordance with 40 CFR § 122.44(f) and State regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this Permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this Permit (24-hour reporting).

2. The discharge of any sludge and/or bottom deposits from any storage tank or basin at the Facility to the receiving water is prohibited.

C. SPECIAL CONDITIONS

1. Provision to Modify pH Range

a. When the source water for the discharge is not the receiving water (i.e., groundwater or municipal water), the pH range of 6.5 to 8.0 Standard Units (S.U.) must be achieved in the final effluent unless the Permittee can demonstrate to NHDES–WD: 1) that the range should be widened due to naturally occurring conditions in the receiving water; or 2) that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge. The scope of any demonstration project must receive prior approval from NHDES–WD. In no case, shall the above procedure result in pH limits outside the range of 6.0 to 9.0 S.U., which are federal technology-based effluent limitation guidelines for pH commonly found in 40 CFR subchapter N Parts 405 through 471.

b. When the source water for the discharge is the receiving water, the pH of the discharge shall be in the range of 6.5 to 8.0 Standard Units (s.u.) unless the ambient pH in the receiving water is outside of this range and it is not altered by the facility's discharge or activities. If the permittee's discharge pH is lower than 6.5 s.u., the permittee may demonstrate compliance by showing that the discharge pH was either no more than 0.5 s.u. higher than or 0.3 s.u. lower than the ambient upstream receiving water pH. If the permittee's discharge pH is higher than 8.0 s.u., the permittee may demonstrate compliance by showing that the discharge pH is either no more than 0.5 s.u. lower than or 0.3 s.u. higher than the upstream receiving water pH. For this demonstration the upstream receiving water sample must be collected within one hour of the effluent sampling. The location where the upstream ambient pH sample is collected shall be representative of upstream conditions unaffected by the facility's discharge(s) or activities.

2. Cooling Water Intake Structure

The design, location, construction, and capacity of the cooling water intake structure shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts from the impingement and entrainment of various life stages of fish (e.g., eggs, larvae, juveniles, and adults). The following requirements have been determined to represent the BTA for minimizing adverse impacts:

a. The maximum intake flow rate shall not exceed 1.44 MGD. In addition, the Permittee shall operate multi-stage pumps to withdraw the minimum amount of cooling water required to meet the Facility's cooling demands to the extent practicable.

b. The Permittee shall maintain intake screens at the inlet to the cooling water intake pipes in the Merrimack River. Screens must include an anti-biofouling material or coating and their mesh size must be no larger than 1.5-inch square.

c. The design through-screen velocity at the intake screens at the inlet of the cooling water intake pipes shall not exceed 0.5 fps. The maximum velocity must not be exceeded under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The intake structure must be monitored by visual or remote inspection at least weekly, when feasible, to ensure that the effective velocity does not exceed 0.5 fps. Remote inspection may include use of a differential pressure gauge to measure flow and ensure screens do not become clogged. The intake screens must be cleared of debris when visual or remote inspections indicate that the maximum velocity of 0.5 fps may be exceeded. A weekly inspection report shall be attached to each monthly DMR to include time periods that inspections could not be conducted due to icing or other unsafe conditions in the river.

d. No change in the location, design, or capacity of the present structure, or replacement of any component of the present structure, unless specified by this permit, may be made without prior approval by EPA and DES.

3. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution that was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this Permit, chemicals and/or additives that have been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this Permit 30 days following written notification to EPA unless otherwise notified by EPA. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive;

(4) The frequency (e.g., hourly, daily), magnitude (i.e., maximum application concentration), duration (e.g., hours, days), and method of application for the chemical/additive;
(5) If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

b. Written rationale that demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) will not add any pollutants in concentrations that exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to those in this permit.

D. 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 following the monitoring period. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this Permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.D.5. 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 following the monitoring period), 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 particular report due date specified in this Permit.

3. 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 WD:

(1) Transfer of Permit notice;
(2) Request for changes in sampling location;
(3) Request to discharge new chemicals or additives; and

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

b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov or by hard copy mail to the following address:

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

4. Submittal of Reports in Hard Copy Form

a. The following notifications and reports shall be signed and dated originals, submitted in hard copy, with a cover letter describing the submission:

(1) Written notifications required under Part II, Standard Conditions. Beginning December 21, 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system that will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

b. This information shall be submitted to EPA's Enforcement and Compliance Assurance Division (ECAD) at the following address:

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912

5. 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.D.3 and I.D.4 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 address:

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

6. 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 that 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's ECAD at:

617-918-1510

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

NHDES Assigned NPDES Inspector at 603-271-1493

E. 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 all appropriate State water quality certification requirements (if any) into the Final Permit.

FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL
USEPA Region 1

I. GENERAL REQUIREMENTS

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

- **Daphnid (Ceriodaphnia dubia) Survival and Reproduction Test.**

- **Fathead Minnow (Pimephales promelas) Larval Growth and Survival Test.**

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

R1NPDESReporting@epa.gov

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

See the most current annual DMR instructions which can be found on the EPA Region 1 website at https://www.epa.gov/aboutepa/epa-region-1-new-england (click on NPDES, EPA Permit Attachments, Self-Implementing Alternate Dilution Water Guidance) for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     -Method 4500-CL E Low Level Amperometric Titration
     -Method 4500-CL G DPD Colorimetric Method
   - USEPA 1983. Manual of Methods Analysis of Water and Wastes
     -Method 330.5
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing
4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.
5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4
6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013. Guidance for this review can be found at www.epa.gov/cwa-methods/whole-effluent-toxicity-methods

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

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

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

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

- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-1-003, June 2002, Section 6.4.2. This document can be located under Guidance Documents at the following USEPA website location: https://www.epa.gov/aboutepa/epa-region-1-new-england (click on NPDES, EPA Permit Attachments).

  If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater that the PMSD lower bound, then the treatment is considered statistically significant.

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

ATTACHMENT B: LIST FOR POLLUTANT SCANS

	NPDES Permit Number	Facility Name	Outfall Number

EFFLUENT PARAMETERS FOR POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Ammonia (as N)							☐ ML ☐ MDL
Chlorine (total residual, TRC)[2]							☐ ML ☐ MDL
Dissolved oxygen							☐ ML ☐ MDL
Nitrate/nitrite							☐ ML ☐ MDL
Kjeldahl nitrogen							☐ ML ☐ MDL
Oil and grease							☐ ML ☐ MDL
Phosphorus							☐ ML ☐ MDL
Total dissolved solids							☐ ML ☐ MDL

[1] 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).

[2] 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

EFFLUENT PARAMETERS FOR POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Metals, Cyanide, and Total Phenols							
Hardness (as $CaCO_3$)							☐ ML ☐ MDL
Antimony, total recoverable							☐ ML ☐ MDL
Arsenic, total recoverable							☐ ML ☐ MDL
Beryllium, total recoverable							☐ ML ☐ MDL
Cadmium, total recoverable							☐ ML ☐ MDL
Chromium, total recoverable							☐ ML ☐ MDL
Copper, total recoverable							☐ ML ☐ MDL
Lead, total recoverable							☐ ML ☐ MDL
Mercury, total recoverable							☐ ML ☐ MDL
Nickel, total recoverable							☐ ML ☐ MDL
Selenium, total recoverable							☐ ML ☐ MDL
Silver, total recoverable							☐ ML ☐ MDL
Thallium, total recoverable							☐ ML ☐ MDL
Zinc, total recoverable							☐ ML ☐ MDL
Cyanide							☐ ML ☐ MDL
Total phenolic compounds							☐ ML ☐ MDL
Volatile Organic Compounds							
Acrolein							☐ ML ☐ MDL
Acrylonitrile							☐ ML ☐ MDL
Benzene							☐ ML ☐ MDL
Bromoform							☐ ML ☐ MDL

	NPDES Permit Number	Facility Name	Outfall Number

EFFLUENT PARAMETERS FOR POTWS

Pollutant	Maximum Daily Discharge		Average Daily Discharge			Analytical Method[1]	ML or MDL (include units)
	Value	Units	Value	Units	Number of Samples		
Carbon tetrachloride							☐ ML ☐ MDL
Chlorobenzene							☐ ML ☐ MDL
Chlorodibromomethane							☐ ML ☐ MDL
Chloroethane							☐ ML ☐ MDL
2-chloroethylvinyl ether							☐ ML ☐ MDL
Chloroform							☐ ML ☐ MDL
Dichlorobromomethane							☐ ML ☐ MDL
1,1-dichloroethane							☐ ML ☐ MDL
1,2-dichloroethane							☐ ML ☐ MDL
trans-1,2-dichloroethylene							☐ ML ☐ MDL
1,1-dichloroethylene							☐ ML ☐ MDL
1,2-dichloropropane							☐ ML ☐ MDL
1,3-dichloropropylene							☐ ML ☐ MDL
Ethylbenzene							☐ ML ☐ MDL
Methyl bromide							☐ ML ☐ MDL
Methyl chloride							☐ ML ☐ MDL
Methylene chloride							☐ ML ☐ MDL
1,1,2,2-tetrachloroethane							☐ ML ☐ MDL
Tetrachloroethylene							☐ ML ☐ MDL
Toluene							☐ ML ☐ MDL
1,1,1-trichloroethane							☐ ML ☐ MDL
1,1,2-trichloroethane							☐ ML ☐ MDL

	NPDES Permit Number	Facility Name	Outfall Number

EFFLUENT PARAMETERS FOR POTWS

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

	NPDES Permit Number	Facility Name	Outfall Number

EFFLUENT PARAMETERS FOR POTWS

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

	NPDES Permit Number	Facility Name	Outfall Number

EFFLUENT PARAMETERS FOR POTWS

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

[1] 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)[1]

TABLE OF CONTENTS

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

(1) Criminal Penalties

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

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

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

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

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

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

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

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

d. *Prohibition of bypass.*

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

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

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

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

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

5. Upset

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

improper operation.

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

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

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

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

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

e. *Twenty-four hour reporting.*

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

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

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

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

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

Agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Municipality

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Upset see B.5.a. above.

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

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

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

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

2. Commonly Used Abbreviations

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

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

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

FACT SHEET

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

NPDES PERMIT NUMBER: NH0000116

PUBLIC NOTICE START AND END DATES: September 4, 2025 – October 6, 2025

NAME AND MAILING ADDRESS OF APPLICANT:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

RECEIVING WATER AND CLASSIFICATION:

Merrimack River (#NHRIV700060803-14-02)
Merrimack River Watershed
Class B

SIC CODE: 2821 (Plastic Materials, Synthetic Resins and Non-vulcanizable Elastomers)

Table of Contents

Tables

Figures

Appendices

1.0 Proposed Action

The Nylon Corporation of America ("NYCOA" or the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to authorize non-contact cooling water and filter backwash discharges and cooling water withdrawals from the NYCOA (the "Facility"). The Facility proposes to discharge pollutants to and withdraw cooling water from, the Merrimack River.

The permit currently in effect was issued and effective on August 1, 2019 and expired on July 31, 2024 (the 2019 Permit). The Permittee filed an application seeking NPDES permit reissuance from EPA dated March 6, 2023, as required by 40 Code of Federal Regulations (CFR) § 122.6. Supplemental application materials were also submitted on November 15, 2023. The permit application was deemed timely and complete by EPA on December 6, 2023. Therefore, the Facility's permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the NHDES conducted a site visit February 1, 2024.

This 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 NHDES to "consider" a federal NPDES permit to be a State surface water discharge permit. As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

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

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

In addition, point source dischargers subject to Sections 301 or 306 that have cooling water intake structures (CWIS) must meet the cooling water intake structure requirements of CWA § 316(b), 33 U.S.C. § 1326(b). The federal standards for cooling water intake structures are specified in 40 CFR Part 125, subpart J (for existing facilities). In addition, NPDES permits must also include any more stringent permit conditions needed for cooling water intake structures to satisfy state law requirements, including state water quality standards. 40 CFR §§ 125.84(e) and 125.94(i).

2.1 Technology-Based Requirements

NPDES permit limits must, at a minimum, satisfy applicable federal technology standards under the CWA. CWA §§ 301(b), 304(b) and 402(a); 40 CFR § 125.3(a). The statute specifies several different narrative technology standards that apply to different types of pollutants. Technology-based effluent limitations are set to reflect the greatest degree of pollution control that can be achieved by using a technology that satisfies the applicable technology standard. Effluent limitations based on the best practicable control technology currently available (BPT) standard apply to "conventional pollutants" under certain circumstances, while effluent limitations applied to conventional pollutants are otherwise based on the best conventional control technology standard (BCT). *See* CWA §§ 301(b)(2)(E) and 304(a)(4), (b)(1) and (b)(4). *See also* 40 CFR §§ 125.3(a)(2)(i) and (ii). Effluent limitations based on the best available technology economically achievable (BAT) apply to toxic and non-conventional pollutants. *See* CWA § 301(b)(1)(A) and (b)(2)(A) – (D) and (F), and 304(b)(2); 40 CFR §§ 125.3(a)(iii) and (iv); and 401.12. If a discharger is a "new source" under Section 306 of the CWA, 33 U.S.C. § 1316, however, then it must meet new source standards based on the "best available demonstrated technology" (BADT). *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29.

Subpart A of 40 CFR Part 125 establishes criteria and standards for developing and applying technology-based requirements in permits under § 301(b) and 402(a) of the CWA. Where EPA has established national effluent limitation guidelines (ELGs) for an industrial category or subcategory, permit *limits* for a facility within that category are set by applying the limits from the national guideline. 40 CFR § 125.3(c)(1). *See also* CWA § 402(a)(1)(A). Where EPA has not yet promulgated an applicable national ELG, then the permitting authority develops permit limits based on a facility-specific, Best Professional Judgment (BPJ) application of the relevant technology standard. 40 CFR § 125.3(c)(2). *See also* CWA § 402(a)(1)(B). Where national ELGs have been promulgated for some, but not all, of the pollutants regulated by the permit, limits are set using the appropriate approach for each pollutant. 40 CFR § 125.3(c)(3).

With regard to CWISs regulated under CWA § 316(b), the requirements for new facilities are determined in accordance with 40 CFR Part 125, Subpart I (the New Facilities Rule), but the requirements for some new facilities are determined on a case-by-case, BPJ basis. *See* 40 CFR §§ 125.80(c), 125.81(d) and 125.90(b).[1] Furthermore, CWIS requirements for new offshore oil and gas extraction facilities are determined in accordance with 40 CFR Part 125, subpart N. Cooling water intake structure requirements for many types of existing facilities are developed in accordance with 40 CFR Part 125, Subpart J (the Existing Facilities Rule), whereas the requirements for other types of existing facilities are developed on a BPJ basis. *See* 40 CFR §§ 122.44(b)(3) and 125.90(b).

Facilities other than publicly owned sewage treatment plants must generally comply with technology standards as expeditiously as practicable but in no case later than either three years after the date such limitations are established or March 31, 1989, whichever comes first. *See* 40 CFR § 125.3(a)(2). NPDES permits may not include compliance schedules inconsistent with a CWA statutory compliance deadline. 40 CFR§ 122.47(a)(1).

2.2 Water Quality-Based Requirements

The CWA and EPA regulations require that NPDES permits include effluent limits based on water quality considerations when such limits are necessary to meet state or federal WQS that apply to the body of water that receives the discharge. Such water quality-based limits are necessary when less stringent TBELs would be less

[1] *See also* July 6, 2022, Transmittal of Revised Framework for Best Professional Judgement for Cooling Water Intake Structures at Hydroelectric Facilities. https://www.epa.gov/sites/default/files/2021-01/documents/transmittal_of_framework_for_bpj_for_cwis_at_hydroelectric_facilities_final_memo.pdf

stringent and would interfere with the attainment or maintenance of WQS in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

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 - 131.12. Generally, WQSs consist of three parts: 1) beneficial designated use or uses 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, Chapter 485-A, Water Pollution and Waste Disposal. EPA notes that the State of New Hampshire adopted new criteria into its WQSs regulations in February 2025 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so.

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 monthly average 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" assessment using CWA § 304(a) recommended water quality criteria supplemented as necessary by other relevant information; or 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A) – (C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high-quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

The New Hampshire Antidegradation Policy, found at Env-Wq 1708, applies to any new or increased activity that would lower water quality or affect existing or designated uses, including increased loadings to a water body from an existing activity. The antidegradation regulations focus on protecting high quality waters and maintaining water quality necessary to protect existing uses. Discharges that cause "significant degradation" are

defined in NH WQS (Env-Wq 1708.09(a)) as those that use 20% or more of the remaining assimilative capacity for a water quality parameter in terms of either concentration or mass of pollutants or flow rate for water quantity. When NHDES determines that a proposed increase would cause a significant impact to existing water quality, the applicant must provide documentation to demonstrate that the lowering of water quality is necessary, that it will provide net economic or social benefit in the area in which the water body is located, and that the benefits of the activity outweigh the environmental impact caused by the reduction in water quality. *See* Env-Wq 1708.10(b).

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

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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

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

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

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State's WQSs, 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. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State 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(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

2.3 Effluent Flow Requirements

Generally, EPA uses a discharger's effluent flow volume both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent 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.[2] In this regard, the effluent flow limitation is a component of any WQBELs because the WQBELs are premised on a maximum flow level. 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 WQSs.

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).

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 (1)(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 numeric 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*.[3] 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)

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

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

(monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

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

2.4.2 Reporting Requirements

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

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.[5]

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

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified with conditions less stringent than the corresponding conditions in a previous permit issued to the same facility unless doing so is authorized by one of the specified exceptions to the anti-backsliding requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(*l*). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or State certification requirements.

---

[4] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. 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).

[5] https://netdmr.zendesk.com/hc/en-us

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2019 Permit, with the exception of the temperature limit for Outfall 004 during the months of June through September. In this case, as described in Section 5.1.3 of this Fact Sheet, a specific condition exists to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4).

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located along the eastern bank of the Merrimack River on Sundial Avenue in Manchester, New Hampshire. The Facility manufactures a polyamide-type synthetic resin. A location map is provided in Figure 1.

The manufacturing process uses non-contact cooling water (NCCW) to reduce or control the temperature of various stages of the manufacturing process. The NCCW does not come in direct contact with any raw material, intermediate product, a waste product (other than heat) or finished product. Water used for non-contact cooling purposes at the Facility is withdrawn from a pair of cooling water intake structures (CWIS) situated near the bottom of the Merrimack River. A complete description of the CWIS is provided in Section 3.3 below.

Water withdrawn from the Merrimack River is passed through an intake water strainer to filter out solids prior to its use as NCCW in several heat exchangers and a vacuum pump which support the manufacture of a polyamide-type synthetic resin (Nylon 6 and 6,6) produced in pelletized form. This product is used in electrical, home and garden, automotive, consumer, and industrial applications. Caprolactam and various additives comprise the raw materials used. All process wastewater from the manufacturing process is discharged to the City of Manchester Publicly Owned Treatment Works (POTW). Discharges to surface waters from this Facility are limited to NCCW and filter backwash water. See Section 3.2 for additional information on these discharges.

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based effluent limitation guidelines (ELGs) for non-contact cooling water or filter backwash discharges in 40 CFR Subchapter N Parts 405 through 471. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. EPA's NPDES permitting regulations at 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1)(B) of the CWA shall apply the appropriate factors listed in 40 CFR § 125.3(d) and must consider 1) the appropriate technology for the category or class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

3.2 Location and Type of Discharge

Outfall 004 is located at Latitude 42° 58' 25" Longitude 71° 28' 18" on the eastern bank of the Merrimack River in Manchester, NH.

The Permittee has requested the continued authorization to discharge NCCW from Outfall 004 into the Merrimack River. In addition, the Permittee withdraws water for non-contact cooling from the Merrimack River via its cooling water intake structure (CWIS). A schematic of water flow is provided in Figure 2. Outfall 007, which was formerly a permitted discharge of filter backwash water to the Merrimack River, has been discontinued. In a March 26, 2024 emailed letter from Robert Polce of NYCOA to George Papadopoulos of EPA, it was confirmed that the prior filter backwash water was relocated from Outfall 007 to the basement sump from which cooling water is pumped out for facility use and has not discharged to Outfall 007 since that time. Therefore, a portion

of this filter backwash discharge may be discharged to Outfall 004 and has been listed as a component of the Outfall 004 effluent.

On average, the CWIS withdraws approximately 0.8 MGD to meet the cooling demand in support of the production of pelletized nylon. The NCCW is associated with the operation of several heat exchangers and a vacuum pump and is discharged to the Merrimack River via Outfall 004 at an average maximum daily rate of 0.8 MGD. In the event of an emergency, such as when a power failure renders the intake pumps inoperable, the Permittee can use municipal water as the source of its cooling water for these heat exchangers and vacuum pumps. As shown in Figure 2, the facility uses municipal water to cool the agitator seals, flange and gearbox of its reactors and this water is also discharged to Outfall 004. All other cooling waters and process waters shown in Figure 2 are discharged to the municipal sewer and not discharged to the river.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from January 1, 2020 through December 31, 2024 is provided in Appendix A of this Fact Sheet.

3.3 Cooling Water Intake Structure

The NYCOA CWIS is located on the eastern bank of the Merrimack River in a segment of the river which is approximately 3000 feet downstream from an area of rapids that extends from the Amoskeag Dam to a point just below the Queen City Avenue Bridge in Manchester, NH. The CWIS consists of twin 30-inch (28-inch interior diameter) cast iron intake pipes with 90-degree elbows (i.e., inlets facing downstream) extending approximately 55 to 60 feet in a westerly direction perpendicular from the eastern bank of the Merrimack River. As required by the 2019 Permit, the Permittee installed screens on both intake pipes in September of 2021 to restrict fish or debris movement into the pipes.

The ends of the intake pipes are approximately 0 to 0.5 feet off the river bottom depending on how river flow affects bottom sediments. The bottom of the pipe inlets are approximately 4 to 6 feet deep, depending on river flow conditions. Each of the two intake pipes connects to separate 16-foot wide, 24-foot long, 11-foot high inlet tanks located in the Merrimack River's eastern bank. On the side of each tank opposite from where cooling water enters (the back side of these tanks) is situated a single 3.5-foot wide, 7-foot long, 6-foot high chamber, which is common to both tanks. This chamber receives water from both tanks through two 28-inch diameter openings. This chamber also constitutes the entrance to the facility's subterranean 5-foot by 5-foot cooling water intake tunnel. The intake tunnel has a screen type barrier installed at its inlet. The screen is fabricated from half inch iron rods; welded two inches on center; resulting in a screen opening size of 1.5 inches by 1.5 inches. A through screen velocity of this barrier, using an equivalent hydraulic diameter of this square shaped intake tunnel of 3.27 feet, is calculated to be 0.27 ft/sec. The tunnel is approximately 34-feet below ground level and runs 123 feet from the inlet chamber to the basement of NYCOA's boiler building.

In the boiler building, three cooling water pumps draw cooling water from this tunnel. All three pumps are multi-stage vertical centrifugal pumps, where the flow varies depending on system demand, even though the motors rotate at constant speed. The pumping system is mechanically interlocked to allow a maximum flow of 1,000 GPM (2.23 cfs). Pump No. 1 and Pump No. 2, both with a capacity of 400 GPM, can only operate (individually or together) when Pump No. 3 is locked out. Pump No. 3, with a capacity of 1,000 GPM, can only operate when Pump No. 1 and Pump No. 2 are locked out. All three cooling water pumps discharge to a single cooling water pipe main. The cooling water in the cooling water main passes through an in-line filter and is then directed to NYCOA's various production lines.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 004 to the Merrimack River (Assessment Unit #NHRIV700060803-14-02), which is classified as Class B water by the NHDES. According to New Hampshire's WQS, "*Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics 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. The commissioner shall adopt rules, under RSA 541-A, relative to dissolved oxygen water quality standards in a manner consistent with Environmental Protection Agency guidance on dissolved oxygen water criteria published pursuant to section 304(a) of the Clean Water Act, and other relevant scientific information. 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.*"

This segment is also classified as a warm water fishery by the New Hampshire Fish and Game Department. The Merrimack River is part of the Merrimack River Watershed. The Merrimack River originates in Franklin, NH and discharges to the Atlantic Ocean in Newburyport, Massachusetts. The river segment is listed in the final State of *New Hampshire 2024 List of Threatened or Impaired Waters that require a TMDL*.[6] The status of each designated use is presented in Table 1.

Table 1. Summary of Designated Uses and Listing Status

NHRIV700060803-14-02 (Merrimack River)

Designated Use	Status	Parameters
Aquatic Life Integrity	Poor	Aluminum, pH
Fish Consumption	TMDL completed/Poor	Mercury
Potential Drinking Water Supply	Meets WQS/thresholds by a relatively large margin/ Good	None
Primary Contact Recreation	Not meeting WQS/Severe	*E. Coli*
Secondary Contact Recreation	Meets WQS/thresholds but only marginally	*E. Coli*
Wildlife	Insufficient Information/No data	None

[6] https://nhdes-surface-water-quality-assessment-site-nhdes.hub.arcgis.com/

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the Facility 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 WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[7]

The critical flow is some measure of the low flow of the receiving water and may stipulate the magnitude, duration, and frequency of allowable excursions from the magnitude component of criteria in order to prevent adverse impacts of discharges on existing and designated uses. State WQSs specify the hydrologic condition at which water quality criteria must be applied. For non-tidal rivers and streams for New Hampshire, permit limits for all aquatic life criteria and human health criteria for non-carcinogens shall be based on the 7Q10 flow. *See* Env-Wq 1705.2.

7Q10 Streamflow Analysis

The Nylon Corporation of America (NYCOA) outfall is located about 1.9 miles upstream of the USGS Merrimack River Near Goffs Falls Below Manchester, NH Gage (01092000). Therefore, the 7Q10 at a location just downstream of the NYCOA outfall was calculated using the gage data, and the Dingman ratio proration method[8] was not used. The 7Q10 of the Merrimack River at the gage is 624.8 cfs, using data from April 1, 1993 through March 31, 2022.

Dilution Factor Calculation – Outfall 004

The dilution factor for NYCOA's Outfall 004 was calculated using the following equation:

Dilution Factor = $0.9*Q_S/Q_D$

where Q_S = 7Q10 flow of the Merrimack River just downstream of outfall = 624.8 cfs

Q_D = permitted flow of Outfall 004 = 1.44 mgd = 2.23 cfs

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

Dilution Factor = 0.9*624.8/2.23 = **252**

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

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

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

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 is discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

5.1 Effluent Limitations and Monitoring Requirements

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitations development process. Discharge and ambient data are included in Appendix A. EPA's Reasonable Potential Analysis is included in Appendix B and results are discussed in the applicable sections below.

5.1.1 Effluent Flow

From January 1, 2020 through December 31, 2024 (Appendix A) effluent flow has ranged from 0.36 MGD to 1.16 MGD. The Facility's 2019 Permit includes a maximum daily flow limit of 1.44 million gallons per day (MGD). Therefore, the Draft Permit maintains the maximum daily flow limit of 1.44 MGD for flow using a totalizer or similar device, when the Facility is discharging.

5.1.2 pH

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Not only can sudden pH changes kill aquatic life, but pH can also affect the toxicity of other pollutants in the water.

From January 1, 2020 through December 31, 2024 (Appendix A), pH has ranged from 5.8 to 7.1 S.U. The Draft Permit requires a pH range of 6.5 to 8.0 S.U. when the Facility is discharging, monitored weekly by grab samples. There were 29 violations of the lower end of the pH range during this time period. The pH limitations are based on the State WQSs at RSA 485-A:8 II, which require that "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes." These limitations are based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.3 Temperature

Section 502(6) of the Clean Water Act defines heat as a "pollutant." *See* 33 U.S.C. § 1362(6). Water temperature affects the metabolic and reproductive activities of aquatic organisms and can determine which fish and macroinvertebrate species can survive in a given water body. Certain cold-blooded species cannot regulate their body temperature through physiological means, so their body temperatures reflect the temperatures of the water they inhabit. Rapid increases or decreases in ambient water temperature can directly affect aquatic life, particularly fish. Ambient water temperature can indirectly affect aquatic life by influencing water quality parameters such as dissolved oxygen, by which the solubility of oxygen decreases as water temperature increases.

Ambient water temperature is an important factor for aquatic life and can influence other water quality aspects such as dissolved oxygen (the solubility of oxygen decreases as water temperature increases). Water temperature affects the metabolic and reproductive activities of aquatic organisms and can determine which fish and macroinvertebrate species can survive in a given waterbody. Freshwater fishes cannot regulate their body temperature through physiological means, so their body temperatures are very close to the temperatures of the water they inhabit.[9]

> *If the temperature of a reach of stream is raised by 5-10° C., it is probable that cold water fish will avoid this reach and that they will be replaced by warm water fish. Thus, without any direct visible mortality, the character of the fish and supporting aquatic life will change. It will also change because the temperature impacts successful spawning and hatching of eggs.*[10]

The Merrimack River in the Manchester, NH is classified as a warm water fishery. The State's statutory and regulatory provisions do not specify numeric temperature criteria but do specify narrative criteria specific to thermal discharges to protect the existing and designated uses of the waterbody and restore and maintain the chemical, biological, and physical integrity of the State's waters and to provide for the protection and propagation of fish, shellfish, and wildlife. See Env-Wq 1701.01 and 1703.01(b). New Hampshire's environmental statutes and water quality standards dictate that in Class B waters, "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." See RSA 485-A:8 II, RSA 485-A:8 VIII, and Env-Wq 1703.13(b).

During the reporting period, maximum daily temperature at Outfall 004 has ranged from 44°F to 88°F with a median of 64°F and 5 exceedances of the daily maximum limit of 83°F. See Appendix A. As discussed below, the high dilution factor at this outfall (252:1) minimizes any impact of the thermal discharge and ensures protection of designated uses for aquatic life, including the warm water fishery.

In its permit application, the permittee requested an increase in the maximum effluent temperature to 95°F for the period of June through September, citing other permits in the Region that have similar effluent temperature limits with lower dilution factors.

EPA conducted a heat balance analysis to confirm whether the NYCOA discharge will change the instream temperature to the extent that it would pose a threat to the Merrimack River's ecosystem or otherwise violate state water quality standards. The heat balance analysis approach for the Draft Permit applies parameters representing a worst-case scenario (i.e., low river flow, high discharge flow, and maximum permitted effluent temperature). The basic equation used for the calculation of river temperature rise is as follows:

$$\Delta Tr = mp/mr \times \Delta Tp$$

Where:

mp = maximum permitted daily discharge (MGD)
ΔTp = change in temperature, effluent – influent, °F

[9] Moyle, P.B. and J.J. Cech Jr., 2004. Fishes, an introduction to ichthyology. Prentice Hall, Upper Saddle River, NJ, USA.
[10] http://www.watercenter.org/physical-water-quality-parameters/water-temperature/water-temperature-effects-on-fish-and-aquatic-life/

mr = 7Q10 (MGD) ∗ 0.9 (10% reserve for NH)
ΔTr = change in river temperature, °F

NYCOA has a maximum reported effluent temperature of 88°F and a maximum permitted discharge flow of 1.44 MGD. The 7Q10 is 624.8 cfs, or 403 MGD. The permittee reported a high intake temperature of 84°F for the period of October 2021 to September 2022. Using the proposed effluent temperature limit of 95°F with this high intake temperature would result in a delta T of 11°F. After complete mixing in the Merrimack River at this delta T, this would represent a temperature increase of 0.044°F.

Therefore:

ΔTP = effluent – influent = 95°F − 84°F = 11°F (June – September)

ΔTr = mp/mr ∗ ΔTP = [1.44 MGD/ (403 MGD*0.9) MGD] ∗ 11°F = 0.044°F (June – September)

As calculated and assuming complete mixing, NYCOA's NCCW effluent discharges under worse-case conditions would raise the Merrimack River temperature in the vicinity downstream of the outfall by 0.044°F during low flow, summer conditions. During the winter, assuming an instream temperature of 40°F and an effluent temperature of 83°F, resulting in a ΔTP of 43°F, this would result in an instream temperature increase of 0.17°F.

ΔTr = mp/mr ∗ ΔTP = 1.44 MGD/ 363 MGD ∗ 43°F = 0.17°F

EPA finds that these heat balance calculations show that the estimated temperature increases both during the summer and winter are not likely to alter the fish community or impact the fish present. Therefore, the Draft Permit has revised the daily maximum temperature limit from 83°F to 95°F (measured three times per week) at the daily maximum flow limit of 1.44 MGD for the discharge of NCCW through Outfall 004 for the months of June through September. For this less stringent limit to be established, EPA must determine that an exception to the antibacksliding regulations at 40 CFR 122.44(l) applies. EPA has determined that the following antibacksliding exception, found at 40 CFR 122.44(l)(2)(i)(C) applies which reads as follows: *A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy*. At certain times during the summer, the instream temperature in the Merrimack River at this location exceeds 83°F, which is the current effluent temperature limit. Therefore, even if the Permittee was to add no heat to this intake water, it would still likely exceed the current temperature limit during periods when the intake temperature rises above 83°F.

The effluent temperature limit during the period of October through May will remain at 83°F with monitoring frequency of once per week.

5.1.4 Total Residual Chlorine

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 CFR § 141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than

four hours. The Permittee has the ability to use municipal water for its cooling water source either for short periods of time when the river water intake is not available.

From January 1, 2020 through December 31, 2024 (Appendix A), daily maximum total residual chlorine (TRC) concentrations have ranged from below minimum levels to 2200 µg/L, with a median value of 100 µg/L. For the 2019 Permit, EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above state WQS. The acute and chronic EPA *National Recommended Water Quality Criteria* for chlorine are as follows:

Chlorine
Freshwater acute (Class A or B) = 19 µg/L
Freshwater chronic (Class A or B) = 11 µg/L

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

Chronic criteria * dilution factor = Chronic limit
11 µg/L * 252 = 2770 µg/L = 2.77 mg/L (average monthly)

Acute criteria * dilution factor = Acute limit
19 µg/L * 252 = 4790 µg/L = 4.79 mg/L (maximum daily)

Given that these potential limits are above the levels of TRC found in the discharge, the results of EPA's analysis indicated that discharges of TRC do not have reasonable potential to cause or contribute to an excursion above the chronic and acute aquatic life water quality criterion. However, EPA Region 1 has historically established a maximum daily total chlorine residual concentration of 1.0 mg/L whenever the average monthly and/or the maximum daily limit(s) allowed under NH Standards at Env-Wq 1703.21 and Table 1703-1, after factoring in available dilution, would be less stringent than 1.0 mg/L. This approach is consistent with the provisions at Section 101(a)(3) of the Act, and New Hampshire standards at Env-Ws 1703.21(a) which prohibit the discharge of toxic pollutants in toxic amounts. Therefore, the Draft Permit has continued the weekly monitoring requirement for TRC and established monthly average and daily maximum limits of 1.0 mg/L that will apply during any week that municipal water is used for cooling that is discharged to Outfall 004.

5.1.4 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Suspended solids may settle to form bottom deposits in the receiving water, potentially causing benthic smothering. Suspended solids also increase turbidity in receiving waters and reduce light penetration through the water column, thereby limiting the growth of rooted aquatic vegetation that serves as a critical habitat for fish and other aquatic organisms, and can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as nutrients,

pathogens, and metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

Effluent TSS limits of 30 mg/L as a monthly average and 100 mg/L as a daily maximum were established in 2001 Permit for Outfall 007 and carried over to the 2019 permit due to anti-backsliding. As noted above, the backwash water that was previously discharged to Outfall 007 is now directed back to the facility sump and likely to discharge to Outfall 004 with the non-contact cooling water. The rationale for these limits is that they were similar to those used for comparable backwash systems, such as those in the electrical power industry that filter intake water. Although Steam Electric ELGs do not specifically apply to this Facility because it is not a steam electric generator, EPA looked to these guidelines as representative of technology-based requirements for similar discharges in establishing requirements for the based on BPJ pursuant to § 402(a)(1) of the CWA.

TSS levels reported from March of 2020 to December of 2022 (Appendix A) at Outfall 007 indicated a high value of 28 mg/L and an average value of 5.8 mg/L with several samples being non-detect. The Draft Permit clarifies (at Part I.A.1 footnote 3) that when a parameter is not detected above the minimum level, the Permittee must report the value as less than the minimum level for that parameter (e.g., ≤5 mg/L). The Draft Permit contains monthly average and maximum daily TSS limitations of 30 mg/L and 100 mg/L, respectively, to be monitored quarterly by grab sample at Outfall 004. These limitations have been continued from the Facility's 2019 Permit in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1).

5.1.5 Oil and Grease

Oil and Grease is not a definitive chemical constituent, but includes a large range of organic compounds, which can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture can be lethal to fish, benthic organisms and water-dwelling wildlife.

State WQSs for Class B waters at Env-Wq 1703.09(b) state that "Class B waters shall contain no oil or grease in such concentrations that would impair any existing or designated uses". Additionally, State WQSs at Env-Wq 1703.03(c)(1)(b) state that "All surface waters shall be free from substances in kind or quantity that … produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated use." Given the language in both these narrative standards, EPA interprets these provisions, in particular "free from floating visible substances", to mean free from an oil sheen, and to prohibit, in the context of discharges into Class B waters, any discharge that would cause an oil sheen. An oil and grease concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[11]

Oil & grease levels reported from March of 2020 to December of 2022 (Appendix A) at Outfall 007 were all reported as non-detect. The Draft Permit maintains the daily maximum limit of 15 mg/L for Outfall 004, monitored once per quarter by grab sample, with a quarterly frequency. The Draft Permit also clarifies (at

[11] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.

Part I.A.1 footnote 3) that when a parameter is not detected above the minimum level, the Permittee must report the value as less than the minimum level for that parameter (e.g., ≤5 mg/L). This limitation has been continued from the Facility's 2019 Permit at Outfall 004 in accordance with anti-backsliding requirements found in 40 C.F.R. § 122.44(1) and ensures that the discharge will not cause or contribute to a violation of State WQSs.

5.1.6 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g., copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. In aquatic systems, metal bioavailability refers to the concentration of soluble metal that adsorb onto, or absorb into and across, membranes of living organisms. The greater the bioavailability, the greater the potential for bioaccumulation, leading to increased toxicological effects.[12] Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction and behavior of an organism.

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

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

[12] Magelhaes, Danielly et al. 2015. *Metal bioavailability and toxicity in freshwaters.* Environmental Chemistry Letters. DOI 10.1007/s10311-015-0491-9.

5.1.6.2 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. The Permittee has obtained annual monitoring data for total recoverable aluminum, cadmium, copper, lead, nickel and zinc in the discharge and the receiving water in conjunction with Whole Effluent Toxicity testing. For Outfall 004, for the monitoring period, there were results from 5 WET tests.

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 any of these metals, so the Draft Permit does not propose any new limits for these metals. Annual monitoring for these metals in the discharge and the receiving water continues to be required in conjunction with Whole Effluent Toxicity Testing, discussed below.

5.1.7 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the individual pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Final Permit will lead to the generation of data to assess whether the Facility discharges combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement 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...." *See* Env-Wq 1703.21(a)(1))." EPA generally considers WET testing in addition to chemical specific criteria when evaluating whether discharges from a facility meet WQSs.

In accordance with current EPA guidance whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$ For a Facility with a dilution factor between 100:1 and 1,000:1, EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommends either acute or chronic toxicity testing and recommends that toxicity testing be required even if the effluent is not determined to cause or contribute to an excursion above water quality criteria. EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommended criterion to prevent acutely toxic effects is 0.3 T.U.

The 2019 Permit requires the reporting of the C-NOEC value, using the daphnid (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) as the test species. For the period of January 1, 2020 through December 31, 2024 (Appendix A), the WET tests showed all C-NOEC results at 100% with the exception of one reading of 50% for the *Ceriodaphnia dubia*. Due to this C-NOEC result and past WET test results showing chronic effects, this permit has established a pollutant scan requirement as described below.

Therefore, in accordance with 40 CFR § 122.44(d), the Draft Permit carries forward an annual WET test requirement from the 2019 Permit. Toxicity testing must be performed in accordance with EPA Region 1's test procedures and protocols specified in **Attachment A,** *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

5.1.8 Aesthetics, Solids and Oil & Grease

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

> 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, partly due to the Permittee's discharge of filter backwash water, 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 quarter, 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 quarter. Rather, an annual summary of all 4 quarterly results shall be submitted as an electronic attachment to the December DMR by each January 15th for the previous calendar year.

5.1.9 Pollutant Scan

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 and the past chronic effects shown in 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 an annual requirement for the 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 B. Attachment B reflects the parameters found on Tables B and C of NPDES Application Form 2A. 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 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.

5.1.10 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, NPDES Permit could require that the Permittee conduct a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. However, EPA finds that there is no reasonable potential for the discharge to have a detrimental impact on the benthic community because of the high dilution factor and the characteristics of the limited number of pollutants expected in non-contact cooling water and filter backwash discharges in this case. Although a benthic survey is not required at this time, additional information in the future may demonstrate that there is a potential impact on the benthic community and a benthic survey requirement may be required at that time through a future permitting action.

5.2 Special Conditions

5.2.1 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA. The following chemical was disclosed to EPA:

- Caustic soda (sodium hydroxide solution)

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA in writing of the discharge a new chemical or additive; allows for EPA review of the change; and provides the factors for consideration of such changes. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA:

- Product name, chemical formula, general description, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum application concentration), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation that demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations that exceed any permit effluent limitation; and 2)

will not add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

Assuming these requirements are met, discharges of a new chemical or additive is authorized under the permit upon notification to EPA unless otherwise notified by EPA.

5.2.2 Cooling Water Intake Structure (CWIS) Requirements

With any NPDES permit issuance or reissuance, EPA is required to evaluate or re-evaluate compliance with applicable standards, including the technology standard specified in Section 316(b) of the CWA for cooling water intake structures. Section 316(b) requires that:

> [a]ny standard established pursuant to section 301 or section 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.

33 U.S.C. § 1326(b). The operation of CWISs can cause or contribute to a variety of adverse environmental effects, such as killing or injuring fish larvae and eggs entrained in the water withdrawn from a water body and sent through the facility's cooling system, or by killing or injuring fish and other organisms by impinging them against the intake structure's screens.

In order to satisfy the requirements of § 316(b), the location, design, construction, and capacity of the facility's CWIS(s) must reflect "the best technology available for minimizing adverse environmental impacts" ("BTA"). CWA § 316(b) applies to facilities with point source discharges authorized by a NPDES permit that also withdraw water from waters of the United States through a CWIS for cooling purposes. Regulations at CWA § 316(b) are applicable to NYCOA because the Facility withdraws water from the Merrimack River for cooling purposes via a cooling water intake structure.

EPA issued regulations for CWIS applicable to new facilities on December 18, 2001 that took effect January 17, 2002. 66 Fed. Reg. 65255 (December 18, 2001) (40 C.F.R. Part 125, Subpart I). These regulations apply to new power generating and manufacturing facilities. As NYCOA is an existing facility, these regulations do not apply. EPA issued regulations for CWIS applicable to existing facilities on August 14, 2014 that took effect October 14, 2014. 79 Fed. Reg. 48310 (August 14, 2014) (40 C.F.R. Part 125, Subpart J). These regulations apply to existing power generating and manufacturing facilities that are designed to withdraw more than 2 MGD from waters of the U.S. and use at least 25 percent of the water they withdraw exclusively for cooling purposes. *See* 40 C.F.R. § 125.91(a). The design intake flow for NYCOA's CWIS is 1.44 MGD, which is less than the regulatory threshold of 2 MGD. As such, the regulations for existing facilities under 40 C.F.R. §§125.94 through 125.99 do not apply to this facility. In cases where facilities have a design intake flow of 2 MGD or smaller, EPA sets appropriate requirements on a site-specific basis, using best professional judgment (BPJ). *See* 40 C.F.R. § 125.90(b). Therefore, EPA has developed technology-based requirements for the NYCOA CWIS by applying § 316(b) on a site-specific basis using BPJ.

In addition to satisfying technology-based requirements, NPDES permit requirements for CWISs must also satisfy any more stringent provisions of state water quality standards (WQS) or other state legal requirements that may apply, as well as any applicable conditions of a state

certification under CWA § 401. *See* CWA §§ 301(b)(1)(C), 401(a)(1), 401(d), 510; 40 C.F.R. §§ 122.4(d), 122.44(d). *See also* 40 C.F.R. § 125.84(e). This means that permit conditions for CWISs must satisfy numeric and narrative water quality criteria and protect designated uses that may apply from the state's WQS.

New Hampshire's standards state "[t]hese rules shall apply to any person who causes point or nonpoint source discharge(s) of pollutants to surface waters, or who undertakes hydrologic modifications, such as dam construction or water withdrawals, or who undertakes any other activity that affects the beneficial uses or the level of water quality of surface waters." N.H. Code R. Env-Wq 1701.02(b). This language clearly indicates the applicability of the standards to cooling water withdrawals from the state's waters. In addition, because cooling water withdrawals can result in impingement and/or entrainment of aquatic organisms, such withdrawals must comply with certain designated uses and water quality criteria, including protection of water use classifications and existing and designated uses and providing for the protection and propagation of fish, shellfish, and wildlife. See *Id*. 1701.03(b), (c), and (d). The Merrimack River at the intake is designated a Class B Water, which means that the waterbody provides, at a minimum, habitat for fish and other aquatic life and wildlife, including for their reproduction, migration, growth, and other critical functions, and for primary and secondary recreation. Finally, New Hampshire state standards prescribe the following water quality criterion for "biological and aquatic community integrity": "[t]he surface waters shall support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of similar natural habitats of a region" and "[d]ifferences from naturally occurring conditions shall be limited to non-detrimental differences in community structure and function." *Id*. 1703.19. See also *id*. 1702.08.

In summary, the New Hampshire WQSs apply to CWISs and permit requirements must be sufficient to ensure that the CWIS neither causes nor contributes to violations of the WQS, including that it provide habitat for fish and other aquatic life and a recreational fishing resource, and will satisfy the terms of the state's water quality certification under CWA § 401.

Effect of Cooling Water Intake Structures

Section 316(b) of the CWA addresses the adverse environmental impact of CWIS at facilities requiring NPDES permits. The principal adverse environmental impacts typically associated with CWISs evaluated by EPA are the *entrainment* of fish eggs, larvae, and other small forms of aquatic life through the plant's cooling system, and the *impingement* of fish and other larger forms of aquatic life on the intake screens. Entrainment of organisms occurs when a facility withdraws water into the CWIS from an adjacent water body. Fish eggs and larvae and other planktonic organisms in the water small enough to pass through intake screens and become entrained along with the cooling water drawn into the facility where they may be subjected to death or damage due to high velocity and pressure, increased temperature, and exposure to chemical anti-biofouling agents.[13] See 79 Fed. Reg. 48303. Impingement of organisms occurs when a facility draws water through its CWIS and organisms too large to pass through the screens, and unable to swim away, become trapped against the screens and other parts of the intake structure and may be killed, injured or weakened. See 79 Fed. Reg. 48303. In some cases, contact with screens or other

[13] EPA 2011. Environmental and Economic Benefits Analysis of the Proposed Section 316(b) Existing Facilities Regulation: Section 2.3 CWIS Impacts to Aquatic Ecosystems. EPA. March 28, 2011.

equipment can cause an organism to lose its protective slime and/or scales, or suffer other injuries, which may eventually result in mortality. See 66 Fed. Reg. 65263.

The extent of entrainment and impingement depend on species characteristics, the facility's environmental setting, the volume of cooling water flow through the plant, and the location, design, construction, and capacity of the CWIS. The intake structure's location and depth, the velocity of water drawn to the entrance of the intake structure (approach velocity) and through the screens (through-screen velocity), the seasonal abundance of various species of fish, and the size of various fish relative to the size of the mesh of any intake barrier system (e.g., screens) can all impact rates of impingement and entrainment.

The most direct impact of impingement and entrainment mortality is the loss of aquatic organisms, including fish, benthic invertebrates, phytoplankton, fish eggs and larvae, and other susceptible organisms. In many cases, CWISs are in or connected to impaired waterbodies, in which impingement and entrainment may further impair degraded or altered aquatic communities already affected by poor water quality. Losses from impingement and entrainment may also contribute to impacts to threatened and endangered species, indigenous populations of aquatic organisms, commercial fisheries, recreational fisheries, and reduce ecologically critical aquatic organisms, including important elements of an ecosystem's food chain. In addition, impingement and entrainment mortality can diminish a population's compensatory reserve, which is the capacity of a species to increase survival, growth, or reproduction rates in response to environmental variability, including temperature extremes, heavy predation, disease, or years of low recruitment. Finally, fish and other species affected directly and indirectly by CWISs can provide other valuable ecosystem goods and services, including nutrient cycling and ecosystem stability. See 79 Fed. Reg. 48318-48321.

Location, Construction, Design, and Capacity of the CWIS

As described above, Section 316(b) of the CWA requires the location, design, construction, and capacity of CWIS reflect the best technology available for minimizing adverse environmental impact. See 33 U.S.C. § 1326(b). EPA reviewed the location, design, and capacity of NYCOA's CWIS in establishing site-specific technology-based requirements applicable to the continued operation of its intake system based on BPJ.

Location

The term "location" refers to the water body, or segment of the water body, in which the CWIS is located. Location also refers to where the intake is located within a particular water body, such as its placement within the water column and its locations relative to the shoreline, the point of thermal discharges, and any particularly sensitive resource areas (e.g., migration routes, spawning areas).

The NYCOA CWIS is located on the eastern bank of the Merrimack River just below the Queen City Avenue Bridge in Manchester, NH and about 3,000 feet downstream from the Amoskeag Dam. Two intake pipes extend from the eastern bank approximately 55 to 60 feet into the Merrimack River. The ends of the intake pipes are between 0 to 0.5 feet off the river bottom at an average depth of about 4 to 6 feet based on median river flow conditions. Visual inspection of the intake is challenging due to the distance from the riverbank, depth of the intakes, and clarity of the water at this location. The intake pipes are located approximately 115 to 120 feet from the main channel of the river, considering that

the average river width is approximately 350 feet and assuming that the main channel of the river is approximately at mid-stream.

The Merrimack River supports resident freshwater species such as smallmouth bass, largemouth bass, pickerel, horned pout, black crappie, bluegill, yellow perch, carp, and white sucker.[14] Many of these fish engage in nest building or deposit eggs near the substrate where these early life stages would be less susceptible to entrainment. Anadromous fish, such as river herring and American shad, which may be present downstream of Amoskeag dam, would typically travel in the main channel of the river more than 100 feet from the location of the intakes. However, eggs and larvae of these anadromous species may be exposed to mortality from withdrawals at NYCOA's intakes. Early life stages would be expected to drift with the current past the intakes. The downstream orientation of the opening to the CWIS likely reduces exposure to drifting organisms. The downstream orientation, combined with the relatively low withdrawal flow (see discussion below), minimizes the risk of entrainment of early life stages.

Design

The "design" element of a CWIS refers to the various components that make up the CWIS itself, including, but not limited to, screening systems intended to keep aquatic organisms and debris from being drawn into the Facility's cooling system as well as pumps and technologies that influence the volume and/or velocity of water drawn into the plant.

Two, 30-inch cast iron intake pipes are fitted with a 90-degree elbow with the intake facing downstream. According to the Permittee, the static, flat mesh screens were removed in 2007 due to fouling, which restricted cooling water flow. The 2019 Permit included a compliance schedule during which the Permittee was required to install screens on the inlet of each of the cast iron intake pipes to prevent fish and other aquatic organisms from entering the CWIS. The screens that were installed in September of 2021 were 1.5-inch by 1.5-inch screen size on the existing barrier located at the entrance to the cooling water intake tunnel in the cooling water chamber. In order to meet the § 316(b) requirements of this Permit, these screens needed to include anti-biofouling coating and/or an automated cleaning system using compressed air to reduce fouling issues. The Permittee uses a remote-controlled device to inspect the intakes and clean off debris that collects on the outside of their screens.

In addition, the screens needed to be designed to maintain a through-screen velocity of no greater than 0.5 fps.[15] Designing the intake to a velocity that can be avoided by a majority of fish will minimize the potential adverse impacts due to impingement mortality at a CWIS. Maintaining a low intake velocity after installation of the screens will not only reduce the risk of fish becoming impinged, but also ensure that fish do not swim into the intake structure and become trapped in the inner chambers of the CWIS. Moreover, a design velocity is well suited for NYCOA because compliance can be measured by calculation of intake velocity rather than through biological monitoring which, as explained below, is challenging at this CWIS. A

[14] See, for example, a characterization of the Merrimack River upstream of the Facility in Hooksett Pool for NH0001465 at https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/MerrimackStationAttachD.pdf.

[15] A through-screen velocity of 0.5 fps or less is generally accepted as resulting in a 96 percent or better reduction in impingement mortality for most species and is consistent with compliance alternatives for meeting the requirements of § 316(b) for new and existing facilities. See 40 C.F.R. § 125.94(c)(2). See also 66 Fed. Reg. 65,274 [December 18, 2001] and 79 Fed. Reg. 48336 [August 14, 2014].

remote monitoring instrument, such as a differential pressure gauge, should be used at the intake to ensure that debris and/or fouling does not cause an exceedance of the through-screen velocity limit. In addition, the design through-screen velocity of the screens is consistent with the recommended standard to minimize impingement mortality and will ensure that most fish are able to avoid becoming impinged at the inlet to the CWIS.

Construction

The term "construction" refers to the physical aspects of installing the CWIS or any associated technologies. For an existing Facility and CWIS such as NYCOA, EPA considers any adverse impacts that might occur as a result of modifying a CWIS, including installation of any new technology designed to minimize impingement and entrainment. Since the Permittee previously installed new intake screens, no "construction" would be expected during the permit term that would result in any adverse impacts to fish or other aquatic life.

Capacity

The CWIS uses a series of three, multi-stage pumps with variable flow depending on system demand: two, 400 gpm pumps and one, 1,000 gpm pump. The interlocking pump system is designed to allow a maximum flow of 1,000 gpm (1.44 MGD) through independent operation of the single large pump, or operation of the two smaller pumps (individually or in tandem). The system does not allow simultaneous operation of all three pumps.

The Draft Permit includes a maximum daily effluent flow limit of 1.44 MGD based on the design capacity of the pumps. The mean annual river flow of the Merrimack River at Goffs Falls (USGS Gage 01092000), which is approximately 2 miles downstream from the Facility, is about 5,471 cfs (water years 1937-2017). Based on this value, the design flow of the CWIS (2.23 cfs) is equivalent to 0.04% of the mean annual river flow, and about 0.36% of the 7Q10 low flow (624.8 cfs, see Section 4.3). The low volume of the cooling water intake, in comparison to the river flow, will likely expose a relatively low density of early life stages of fish and other aquatic organism to entrainment. In addition, the Draft Permit requires the Permittee to minimize the intake of cooling water by optimizing the pump capacity to meet, and not exceed, cooling water demand. In the past five years, the actual maximum daily cooling water demand during April through August (when early life stages are present in the Merrimack River[16]) ranged from 0.47 MGD to 1.39 MGD with an average of 0.85 MGD. See Appendix A. The average maximum daily flow during the entrainment season (0.85 MGD = 1.3 cfs) represents about 0.023 % of the mean annual river flow and about 0.21 % of the 7Q10 low flow. In other words, on average, about 0.21 % of the early life stages present in the Merrimack River in the vicinity of the intake would be exposed to entrainment. The BTA for entrainment at NYCOA is optimizing operation of the cooling water pumps to meet cooling water demand.

[16] NYCOA has not conducted entrainment monitoring in the Merrimack River; however, the presence of early life stages in the Merrimack River is documented in monitoring conducted for Merrimack Station in Bow, New Hampshire (NH0001465). See, for example, the Draft Permitting Determinations for the Thermal Discharge and Cooling Water Intake Structures at https://www3.epa.gov/region1/npdes/merrimackstation/pdfs/MerrimackStationAttachD.pdf.

According to the Permittee, the intake velocity at each pipe is about 0.26 fps at a maximum withdrawal of 500 gpm per intake pipe (at design intake of 1,000 gpm) prior to the installation of the screens, assuming that there is no build-up of sediment around the pipe and no screens on the pipe inlets. As discussed above, an intake value less than 0.5 fps is expected to enable most juvenile and adult fish to avoid becoming impinged and, as such, represents the BTA for impingement mortality. A design intake flow of no greater than 0.5 fps was required for the new screens, which will ensure that fish do not travel into the intake pipes and become trapped in the inner chambers of the cooling water system.

BTA Determination and Permit Conditions

The BTA for NYCOA's CWIS includes optimization of the cooling water pumps to meet cooling demand, maintaining the current location of the intakes, and the periodic cleaning of the intake screens at the inlet of the cooling water intake pumps to assure that the design through-screen velocity is no greater than 0.5 fps at any time. The Facility will continue to report the actual cooling water flow on a monthly basis in its DMRs under Part I.A.1 of the Draft Permit. Specifically, Part I.C.2 of the Draft Permit requires:

- The maximum intake flow rate shall not exceed 1.44 MGD. In addition, the Permittee shall operate the multi-stage pumps to withdraw only the minimum amount of cooling water required to meet the Facility's cooling demands.

- The Permittee shall maintain intake screens at the inlet to the cooling water intake pipes in the Merrimack River. Screens must include an anti-biofouling material or coating and mesh size must be a maximum of 1.5-inch square. In addition, any sediment or debris build-up at the suction end or interior to the cooling water intake pipes shall be removed on a periodic basis.

- The design through-screen velocity at the intake screens at the inlet of the cooling water intake pipes shall not exceed 0.5 fps. The maximum velocity must be achieved under all conditions, including during minimum ambient source water surface elevations (based on BPJ using hydrological data) and during periods of maximum head loss across the screens or other devices during normal operation of the intake structure. The intake structure must be monitored by visual or remote inspection at least monthly during the period of April through December to ensure that the effective velocity does not exceed 0.5 fps. Remote inspection may include use of a differential pressure gauge to measure flow and ensure screens do not become clogged. The intake screens must be cleared of debris where remote inspections indicate that the maximum velocity of 0.5 fps may be exceeded.

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 species of fish, wildlife, or plants that have been federally listed as endangered or threatened (listed species) and regarding habitat of such species that has been designated as critical (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 birds (other than seabirds) and terrestrial and freshwater organisms, while the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for listed species of marine organisms (including marine mammals and reptiles), as well as for anadromous fish and seabirds.

The Federal action being considered in this case is EPA's proposed NPDES permit for the NYCOA Facility. The Draft Permit is intended to replace the 2019 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

6.1.1 NOAA Fisheries (marine and anadromous species)

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

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 oxyrhynchus*). In general, adult shortnose sturgeon (SNS) and adult Atlantic sturgeon (ATS) are present in coastal waters. Sturgeon species have not previously been reported in the vicinity of the action area and are unlikely to 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, the life stages of the protected species which are expected to inhabit the Merrimack River in the vicinity of the action area of the discharge. Therefore, EPA has judged that a formal consultation with NOAA Fisheries pursuant to Section 7 of the ESA is not required.

6.1.2 US Fish and Wildlife Service (terrestrial and freshwater species)

For protected species under the jurisdiction of the USFWS, three listed species,

- the endangered northern long-eared bat (*Myotis septentrionalis*),
- the proposed endangered tricolored bat (*Perimyotis subflavus*), and
- proposed threatened monarch butterfly (*Danaus plexippus*)

were identified as potentially occurring in the action area of the Facility's discharges. According to the USFWS, the northern long-eared bat and tricolored bat are found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." The small whorled pogonia "grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams." Neither of these species is considered aquatic.

Because the Facility's projected action area in Manchester, New Hampshire overlaps with the general ranges of these 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 March 27, 2025 that, based on the specific project information submitted, the project would have "no effect" on the northern long-eared bat or tricolored bat[17].

The USFWS[18] notes that the monarch butterfly is a terrestrial insect species that undergoes long distance migration and serves the role of a pollinator in the ecosystem. North American migratory monarchs are divided into eastern and western populations. The Rocky Mountains generally divide these two populations, limiting their contact. However, the two populations are not completely isolated from each other and still occasionally interbreed. There are also non-migratory monarchs that remain year-round at the southern end of their breeding range in North America, including in parts of Florida, the Gulf Coast and California.

The eastern North American migratory monarch population is the largest population of monarchs, in both individuals and range. The eastern population encompasses upwards of 70% of the total North American monarch range. Members of this population likely overlap with the NYCOA action area. In the fall, they may fly more than 2,000 miles (3,000 km) to reach overwintering sites in Mexico. Whether it's a field, roadside area, open area, wet area or urban garden, milkweed and flowering plants are needed for monarch habitat. Adult monarchs feed on the nectar of many flowers during breeding and migration, but they lay eggs on milkweed plants, as that is the only food the caterpillars can eat. In New Hampshire, these butterflies use milkweed plants to lay their eggs in June and July.

EPA has determined that NYCOA's cooling water discharges to the Merrimack River do not come in contact with and therefore does not have a negative impact on flowering plants and the milkweed plant. Also, monarch butterflies are not expected to come in direct contact with the discharge. Therefore, EPA has determined that the NYCOA's discharge will have no effect, either indirect or direct, on the proposed threatened monarch butterfly. No further ESA coordination with USFWS is required for the monarch butterfly.

This concluded EPA's consultation responsibilities for the NYCOA NPDES permitting action under ESA section 7(a)(2). No further ESA section 7 consultation is required with USFWS for these species.

[17] USFWS IPaC Project code: 2025-0075464 Letter dated 3/27/2025
[18] See https://www.fws.gov/species/monarch-danaus-plexippus

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

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

6.2 Essential Fish Habitat

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

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

The Federal action being considered in this case is EPA's proposed NPDES permit for the NYCOA facility, which discharges though Outfall 004 to the Merrimack River in Manchester, New Hampshire. The facility also employs a Cooling Water Intake Structure (CWIS) which is described in Section 3.3 above.

This segment of the Merrimack River at Latitude 42° 58' 25" Longitude 71° 28' 18" is not designated as EFH for coastal species.[19] However, the Merrimack River and its tributaries are designated EFH for Atlantic Salmon (*Salmo salar*). EPA has determined that the Draft Permit has been conditioned to minimize any adverse impacts on Atlantic Salmon EFH in the Merrimack River Watershed for the following reasons:

- The Draft Permit establishes effluent limits for flow, pH, TSS, oil & grease, TRC and temperature.
- The Draft Permit requires annual toxicity testing and pollutant scans.

[19] NOAA EFH Mapper available at https://www.habitat.noaa.gov/apps/efhmapper/.

- The Facility withdraws water from the Merrimack River, but the CWIS includes an exclusionary grate and the intake velocity is less than 0.5 fps, which is believed to be protective for any life stages of EFH species which are vulnerable to impingement or entrainment;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life.

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

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

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

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, George Papadopoulos at the following email address: Papadopoulos.George@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) 918-1579.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting George Papadopoulos at 617-918-1579 or via email to Papadopoulos.George@epa.gov.

Date September 2025

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

Figure 1: Location Map

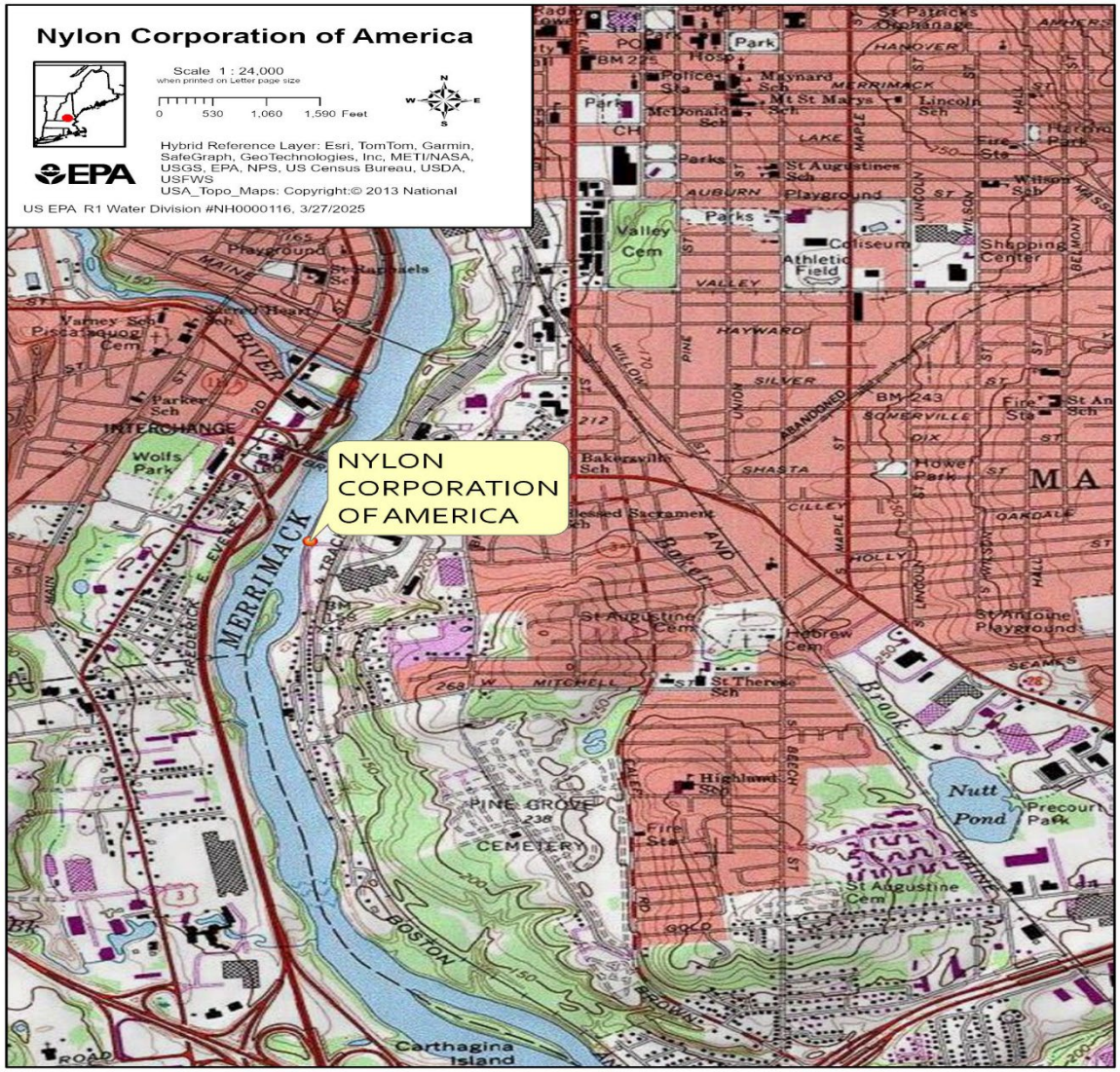
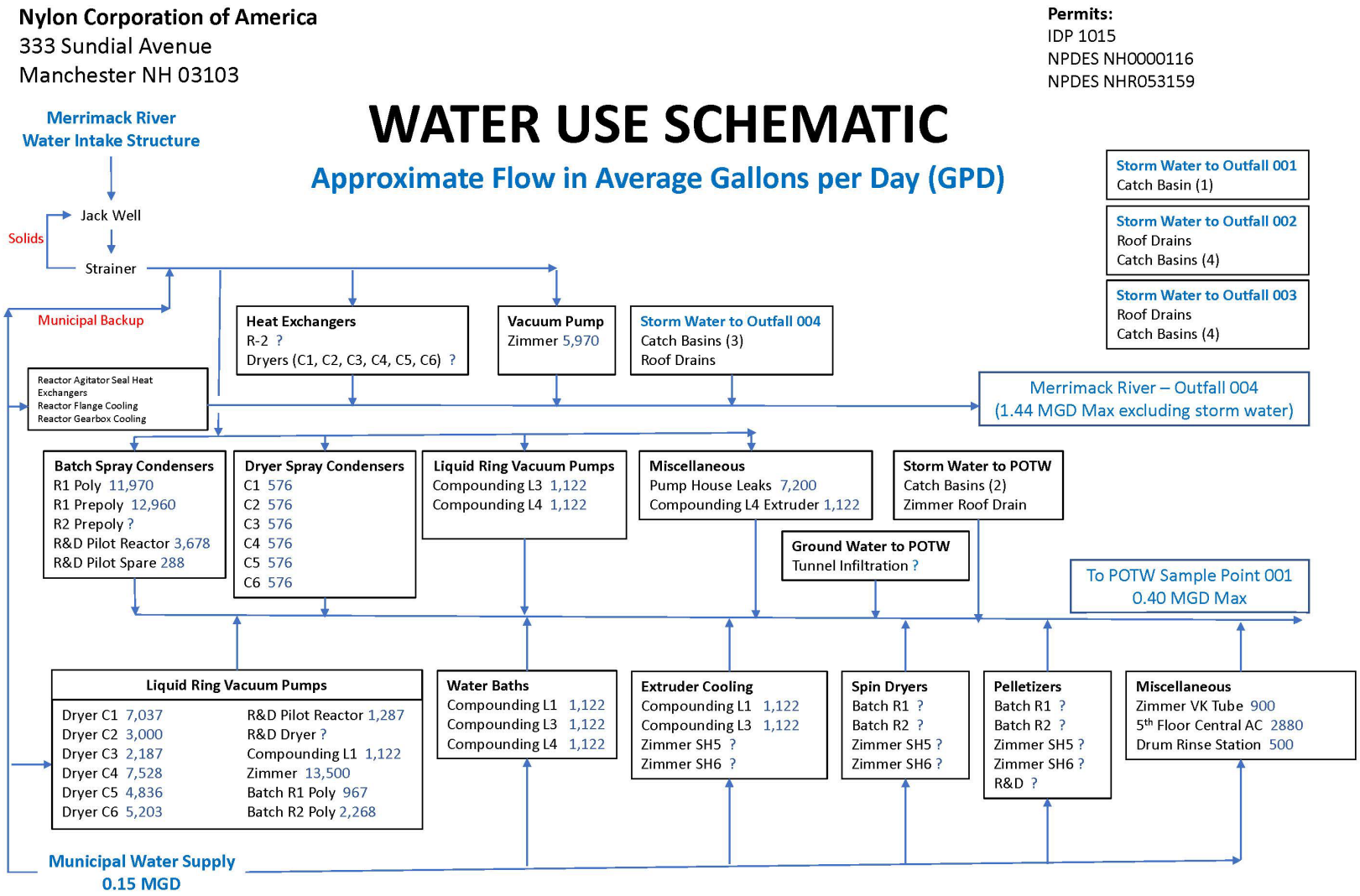


Figure 2: Schematic of Water Flow



Outfall - Monitoring Location - Limit Set: 004 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Daily Max	Daily Max
Units	MGD	MGD	SU	SU	ug/L	deg F
Effluent Limit	Report	1.44	6.5	8	Report	83
Minimum	0.36	0.455	5.8	6.1	0	44
Maximum	1.16	1.39	7.1	7.7	2200	88
Median	0.585	0.785	6.5	6.76	100	63.95
No. of Violations	N/A	0	26	0	N/A	5
Monitoring Period End Date						
1/31/2020	0.99	1.14	6.1	6.3		48
2/29/2020	0.59	1.02	6	6.2		45
3/31/2020	1.04	1.24	6	6.3		54
4/30/2020	0.95	0.98	5.9	6.3		57
5/31/2020	0.75	0.86	6	6.3		69
6/30/2020	0.93	0.9	6.5	7		84
7/31/2020	0.84	0.88	6.6	6.9		84
8/31/2020	0.66	0.76	6.7	7.1	NODI: 3	83
9/30/2020	0.58	0.76	6.5	7	380	76
10/31/2020	0.58	0.89	6.2	6.8	0.19	69.3
11/30/2020	0.74	1.12	6.2	6.3	0.18	59
12/31/2020	0.68	1.1	5.8	6.5	0.13	49
1/31/2021	0.69	0.89	5.8	6.2	0.1	54
2/28/2021	0.65	0.63	6.1	6.2	0.12	51
3/31/2021	0.66	0.63	6	6.1	0.31	57
4/30/2021	0.67	0.67	5.9	6.1	0.15	61
5/31/2021	0.6	0.89	5.9	6.8	0.22	75
6/30/2021	0.69	0.91	6.1	7	0.28	85
7/31/2021	0.94	1.18	6.7	7	0.28	81
8/31/2021	0.92	1.15	6.7	7	0.22	80
9/30/2021	0.63	1.19	6.3	6.9	0.15	78
10/31/2021	1.16	1.38	6.4	6.6	0.1	66
11/30/2021	0.59	1.39	6.2	6.3	0.28	57
12/31/2021	0.6	0.96	6.3	6.2	0.17	48
1/31/2022	0.53	0.73	6.2	6.4	0.19	44
2/28/2022	0.48	0.79	6.4	6.5	80	51
3/31/2022	0.53	0.88	6.3	6.5	80	51
4/30/2022	0.74	0.87	6.3	6.5	110	58
5/31/2022	0.93	0.98	6.5	6.6	190	72
6/30/2022	0.75	1.23	6.7	7	190	76

Outfall - Monitoring Location - Limit Set: 004 - 1 - A

Parameter	Flow	Flow	pH	pH	TRC	Temperature, water deg. fahrenheit
	Monthly Avg	Daily Max	Minimum	Maximum	Daily Max	Daily Max
Units	**MGD**	**MGD**	**SU**	**SU**	**ug/L**	**deg F**
Effluent Limit	**Report**	**1.44**	**6.5**	**8**	**Report**	**83**
Minimum	**0.36**	**0.455**	**5.8**	**6.1**	**0**	**44**
7/31/2022	1.03	1.39	6.8	7.1	210	83
8/31/2022	0.51	0.64	7.1	7.7	200	**88**
9/30/2022	0.5	0.57	6.5	7.2	200	78
10/31/2022	0.46	0.56	**6.4**	6.6	140	63
11/30/2022	0.53	0.95	**6.4**	6.9	120	62
12/31/2022	0.75	1.09	**6.4**	7.2	< 1680	50.7
1/31/2023	0.52	0.61	6.52	6.58	140	48.4
2/28/2023	0.62	0.92	6.6	7.3	2200	48.4
3/31/2023	0.49	0.53	6.55	6.68	100	54.7
4/30/2023	0.5	0.55	6.5	6.6	120	59.7
5/31/2023	0.49	0.6	6.6	6.8	120	69.8
6/30/2023	0.51	0.77	6.6	6.8	130	74.8
7/31/2023	0.53	0.6	6.5	6.8	100	75.9
8/31/2023	0.55	0.84	6.6	6.8	120	74.3
9/30/2023	0.54	0.61	6.6	6.8	80	74.7
10/31/2023	0.492	0.653	6.71	6.87	80	64.9
11/30/2023	0.487	0.645	6.55	6.77	90	58.8
12/31/2023	0.36	0.78	6.54	6.63	100	48
1/31/2024	0.44	0.69	6.5	6.54	170	51.5
2/29/2024	0.452	0.529	6.54	6.66	120	53.4
3/31/2024	0.45	0.5	6.52	6.6	140	52.5
4/30/2024	0.47	0.53	**6.31**	6.75	140	65.8
5/31/2024	0.505	0.614	6.65	6.77	110	70.9
6/30/2024	0.54	0.62	6.67	6.87	110	80.8
7/31/2024	0.53	0.57	6.7	6.87	120	82.58
8/31/2024	0.419	0.455	6.71	6.92	110	80.1
9/30/2024	0.41	0.53	6.73	6.89	110	73.8
10/31/2024	0.42	0.51	6.65	6.89	120	**84.8**
11/30/2024	0.66	0.84	6.67	6.71	120	62.1
12/31/2024	0.61	0.76	6.63	6.68	0.12	51.4

Outfall - Monitoring Location - Limit Set: 004 - 1 - T

Parameter	Ammonia	Cadmium	Copper	Lead	Nickel	Zinc	Hardness	Alkalinity
	Daily Max	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	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	0	0	0.005	0	0	0.0037	1.4	13.5
Maximum	0.19	0	0.0143	0.0009	0.00076	0.007	21.3	19.4
Median	0.11	Non-Detect	0.0066	Non-Detect	Non-Detect	0.005	16.3	14
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
9/30/2020	< .1	< .0001	0.0064	< .0002	< .001	0.006	19	14
9/30/2021	0.19	< .0001	0.0066	0.0009	0.00076	0.0037	1.4	14
9/30/2022	0.16	< .0001	0.005	< .0003	< .001	0.004	21.3	19.4
9/30/2023	0.11	< .0001	0.0143	0.0004	<= .001	0.005	13.9	13.5
9/30/2024	0.1	< .0001	0.0078	< .0003	< .001	0.007	16.3	14.2

Outfall - Monitoring Location - Limit Set: 004 - 1 - T

Parameter	Aluminum, total (as Al)	Noel Static 7Day Chronic Ceriodaphnia	Noel Static 7Day Chronic Pimephales
	Daily Max	Minimum	Minimum
Units	mg/L	%	%
Effluent Limit	Report	Report	Report
Minimum	0	50	100
Maximum	0.07	100	100
Median	0.031	100	100
No. of Violations	N/A	N/A	N/A
Monitoring Period End Date			
9/30/2020	0.031	100	100
9/30/2021	< .02	100	100
9/30/2022	0.022	50	100
9/30/2023	0.07	100	100
9/30/2024	0.031	100	100

Outfall - Monitoring Location - Limit Set: 004 - RW - T

Parameter	pH	Ammonia	Cadmium	Copper	Lead	Nickel	Zinc	Hardness
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	SU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	6.38	0	0	0.0008	0	0	0	1.4
Maximum	7.6	0.1	0	0.002	0.0014	0.001	0.0032	19.2
Median	6.8	0.06	Non-Detect	0.0009	0.0003	Non-Detect	0.003	16.1
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
9/30/2020	7.01	< .1	< .0001	0.0008	< .0002	< .001	0.0031	19
9/30/2021	6.7	< .1	< .0001	0.0009	0.0014	0.0006	0.0032	1.4
9/30/2022	6.8	0.1	< .0002	0.002	0.0003	< .001	< .004	19.2
9/30/2023	6.38	0.06	< .0001	0.0009	0.0004	0.001	0.003	13.7
9/30/2024	7.6	0.06	< .0001	0.0006	< .0003	< .001	< .002	16.1

Outfall - Monitoring Location - Limit Set: 004 - RW - T

Parameter	Alkalinity	Aluminum, total (as Al)	Temperature, water deg. fahrenheit
	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	deg F
Effluent Limit	Report	Report	Report
Minimum	7	0	72
Maximum	17.8	0.108	82
Median	12	0.028	74.7
No. of Violations	N/A	N/A	N/A
Monitoring Period End Date			
9/30/2020	12	0.028	72
9/30/2021	7	< .02	74.7
9/30/2022	17.8	< .02	82
9/30/2023	10.3	0.108	74.3
9/30/2024	13.9	0.028	77

Outfall - Monitoring Location - Limit Set: 007 - 1 - A

Parameter	Flow	Flow
	Monthly Avg	Daily Max
Units	MGD	MGD
Effluent Limit	Report	0.01
Minimum	0.003	0.003
Maximum	0.003	0.007
Median	0.003	0.0035
No. of Violations	N/A	0
Monitoring Period End Date		
1/31/2020	0.003	0.006
2/29/2020	0.003	0.004
3/31/2020	0.003	0.004
4/30/2020	0.003	0.003
5/31/2020	0.003	0.003
6/30/2020	0.003	0.003
7/31/2020	0.003	0.003
8/31/2020	0.003	0.004
9/30/2020	0.003	0.004
10/31/2020	0.003	0.005
11/30/2020	0.003	0.005
12/31/2020	0.003	0.005
1/31/2021	0.003	0.004
2/28/2021	0.003	0.003
3/31/2021	0.003	0.003
4/30/2021	0.003	0.003
5/31/2021	0.003	0.004
6/30/2021	0.003	0.004
7/31/2021	0.003	0.004
8/31/2021	0.003	0.004
9/30/2021	0.003	0.006
10/31/2021	0.003	0.004
11/30/2021	0.003	0.007
12/31/2021	0.003	0.005
1/31/2022	0.003	0.004
2/28/2022	0.003	0.005
3/31/2022	0.003	0.005
4/30/2022	0.003	0.004
5/31/2022	0.003	0.003
6/30/2022	0.003	0.005
7/31/2022	0.003	0.004
8/31/2022	0.003	0.004
9/30/2022	0.003	0.004

Outfall - Monitoring Location - Limit Set: 007 - 1 - A

Parameter	Flow	Flow
	Monthly Avg	Daily Max
Units	**MGD**	**MGD**
Effluent Limit	**Report**	**0.01**
Minimum	**0.003**	**0.003**
10/31/2022	0.003	0.004
11/30/2022	0.003	0.006
12/31/2022	0.003	0.004
1/31/2023	0.003	0.004
2/28/2023	0.003	0.004
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: C	NODI: C
7/31/2023	NODI: C	NODI: C
8/31/2023	NODI: C	NODI: C
9/30/2023	NODI: C	NODI: C
10/31/2023	NODI: C	NODI: C
11/30/2023	NODI: C	NODI: C
12/31/2023	NODI: C	NODI: C
1/31/2024	NODI: C	NODI: C
2/29/2024	NODI: C	NODI: C
3/31/2024	NODI: C	NODI: C
4/30/2024	NODI: C	NODI: C
5/31/2024	NODI: C	NODI: C
6/30/2024	NODI: C	NODI: C
7/31/2024	NODI: C	NODI: C
8/31/2024	NODI: C	NODI: C
9/30/2024	NODI: C	NODI: C
10/31/2024	NODI: C	NODI: C
11/30/2024	NODI: C	NODI: C
12/31/2024	NODI: C	NODI: C

Outfall - Monitoring Location - Limit Set: 007 - 1 - Q

Parameter	TSS	TSS	pH	pH	Oil & grease
	Monthly Avg	Daily Max	Minimum	Maximum	Daily Max
Units	**mg/L**	**mg/L**	**SU**	**SU**	**mg/L**
Effluent Limit	**30**	**100**	**6.5**	**8**	**15**
Minimum	**0**	**0**	**5.6**	**5.6**	**No Data**
Maximum	**28**	**28**	**7**	**7**	**No Data**
Median	**Non-Detect**	**Non-Detect**	**6.05**	**6.05**	**No Data**
No. of Violations	**0**	**0**	**8**	**0**	**No Data**
Monitoring Period End Date					
3/31/2020	28	28	**6.2**	6.2	< 5
6/30/2020	6	6	**6.4**	6.4	< 5
9/30/2020	5	5	6.7	6.7	< 5
12/31/2020	< 4	< 4	**6.2**	6.2	< 5
3/31/2021	< 4	< 4	**6.2**	6.2	< 5
6/30/2021	5	5	**5.9**	5.9	< 5
9/30/2021	< 4	< 4	6.6	6.6	< 5
12/31/2021	4	4	**5.6**	5.6	< 5
3/31/2022	7	7	**6.2**	6.2	< 5
6/30/2022	6	6	**6.2**	6.2	< 5
9/30/2022	9	9	7	7	< 5
12/31/2022	< 4	< 4	6.6	6.6	< 5
3/31/2023	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2023	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2023	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2023	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
3/31/2024	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
6/30/2024	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
9/30/2024	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C
12/31/2024	NODI: C	NODI: C	NODI: C	NODI: C	NODI: C

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

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

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

Where:

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

Solving for the downstream concentration results in:

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

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

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

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

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

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

Pollutant	DF	C_s [1]	C_e [2]		C_d		Criteria * 0.9		Reasonable Potential		Limits	
	--	mg/L	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	Acute (mg/L)	Chronic (mg/L)	C_d & C_r > Acute Criteria	C_d & C_r > Chronic Criteria	Acute (mg/L)	Chronic (mg/L)
Ammonia (Warm)	252	0	0.2	0.2	0.0	0.0	15.0	1.5	N	N	N/A	N/A
Ammonia (Cold)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			µg/L	µg/L
Aluminum		28	70.0	70.0	28.1	28.1	460	290	N	N	N/A	N/A
Cadmium		0	0.0	0.0	0.0	0.0	0.4	0.2	N	N	N/A	N/A
Copper		0.9	14.3	14.3	0.9	0.9	3.1	2.4	N	N	N/A	N/A
Lead		0.3	0.9	0.9	0.3	0.3	10.5	0.4	N	N	N/A	N/A
Nickel		0	0.8	0.8	0.0	0.0	120.2	13.4	N	N	N/A	N/A
Zinc		3.1	7.0	7.0	3.1	3.1	30.6	30.6	N	N	N/A	N/A

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

[2]Values represent the 95th percentile (for $n \geq 10$) or maximum (for $n < 10$) concentrations from the DMR data and/or WET testing data during the review period (see Appendix A).

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: **September 4, 2025 – October 6, 2025**

PERMIT NUMBER: **NH0000116**

PUBLIC NOTICE NUMBER:

NAME AND MAILING ADDRESS OF APPLICANT:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

NAME AND LOCATION OF FACILITY WHERE DISCHARGE OCCURS:

Nylon Corporation of America
333 Sundial Avenue
Manchester, NH 03103

RECEIVING WATER:

Merrimack River (#NHRIV700060803-14-02)
Merrimack River watershed – Class B

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Nylon Corporation of America (NYCOA) facility which discharges non-contact cooling water and filter backwash to the Merrimack River. 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:

George Papadopoulos
Telephone: (617) 918-1579
Papadopoulos.George@epa.gov

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

PUBLIC COMMENT:

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 **October 6, 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.

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