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"),

Monadnock Paper Mills, Inc.

is authorized to discharge from a facility located at

117 Antrim Road
Bennington, New Hampshire 03442

to receiving water named

Contoocook River (Hydrologic Code: 01070003)

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

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

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

This Permit supersedes the Permit issued on September 18, 2015.

This Permit consists of this **cover page**, **Part I**, **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

KENNET MORAFF Digitally signed by KENNETH MORAFF Date: 2021.12.03 09:14:49 -05'00'

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

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated wastewater composed of process water from paper manufacturing, recycled non-contact cooling water overflow, mechanical pump seal water, sand filter backwash water, boiler blowdown, tank and machine wash water, stormwater, laboratory wastewater, and neutralized groundwater through **Outfall Serial Number 001** to the Contoocook 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]	1.0 MGD	1.3 MGD	Continuous	Meter
pH[7]	6.5 - 8.5 S.U.		1/Day	Grab
5-day Biochemical Oxygen Demand (December – March)[8]	400 lbs/day	500 lbs/day	1/Week	Grab
5-day Biochemical Oxygen Demand (April – November)[8]	300 lbs/day	400 lbs/day	1/Week	Grab
Total Suspended Solids (TSS)[8]	300 lbs/day	400 lbs/day	1/Week	Grab
Total Phosphorus[9,10,11] (July – September) Effluent Upstream Receiving Water	 --- ---	 Report µg/L Report µg/L	 2/Year 2/Year	 Grab Grab
Nitrite and Nitrate Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Kjeldahl Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Nitrogen[8,12]	---	Report mg/L Report lbs/day	1/Quarter	Grab
Total Recoverable Aluminum[13]	87 µg/L	---	1/Month	Grab
Total Recoverable Copper[14]	---	14.5 µg/L	1/Quarter	Grab
Perfluorohexanesulfonic acid (PFHxS)[15,16]	---	Report ng/L	1/Quarter	Grab
Perfluorononanoic acid (PFNA)[15,16]	---	Report ng/L	1/Quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[15,16]	---	Report ng/L	1/Quarter	Grab

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Perfluorooctanoic acid (PFOA)[15,16]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[17,18]				
LC_{50}	---	≥ 100 %	1/Year	Grab
C-NOEC	---	≥ 10.4 %	1/Quarter	Grab
Hardness	---	Report mg/L	1/Quarter	Grab
Total Residual Chlorine	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Recoverable Aluminum	---	Report µg/L	1/Quarter	Grab
Total Recoverable Cadmium	---	Report µg/L	1/Quarter	Grab
Total Recoverable Copper	---	Report µg/L	1/Quarter	Grab
Total Recoverable Nickel	---	Report µg/L	1/Quarter	Grab
Total Recoverable Lead	---	Report µg/L	1/Quarter	Grab
Total Recoverable Zinc	---	Report µg/L	1/Quarter	Grab

Ambient Characteristic[19]	Reporting Requirements		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Hardness	---	Report mg/L	1/Quarter	Grab
Total Residual Chlorine	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	Report mg/L	1/Quarter	Grab
Total Recoverable Aluminum	---	Report mg/L	1/Quarter	Grab
Total Recoverable Cadmium	---	Report mg/L	1/Quarter	Grab
Total Recoverable Copper	---	Report mg/L	1/Quarter	Grab
Total Recoverable Nickel	---	Report mg/L	1/Quarter	Grab

Total Recoverable Lead	---	Report mg/L	1/Quarter	Grab
Total Recoverable Zinc	---	Report mg/L	1/Quarter	Grab
Dissolved Organic Carbon[20]	---	Report mg/L	1/Quarter	Grab
pH[21]	---	Report S.U.	1/Quarter	Grab
Temperature[21]	---	Report °C	1/Quarter	Grab

Sludge Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Perfluorohexanesulfonic acid (PFHxS)[22]	---	Report ng/g	1/Quarter	Grab
Perfluorononanoic acid (PFNA)[22]	---	Report ng/g	1/Quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[22]	---	Report ng/g	1/Quarter	Grab
Perfluorooctanoic acid (PFOA)[22]	---	Report ng/g	1/Quarter	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken from the flow measuring flume located after the treatment lagoons during the discharge of effluent to the Contoocook River. 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 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/Day is defined as the recording of one measurement for each 24-hour period. 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/quarter is defined as the sampling of one discharge event during each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. The 1/year monitoring frequency for WET testing is defined further in the WET testing footnotes below. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. Grab samples for chemical parameters shall be taken after the treatment lagoons during the discharge of effluent and shall be representative of average daily conditions.

6. Effluent flow shall be monitored by a continuous recording flow meter containing a totalizer at the discharge flume of Outfall 001. Flow shall be reported in million gallons per day (MGD).

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

8. Mass-based loadings are to be calculated using the following equation: Load (lbs/day) = Flow (MGD) X concentration (mg/L) X 8.34 (conversion factor). The monthly average effluent loading is calculated by dividing the sum of the daily discharge loadings for the month by the number of sample measurements taken during the month.

9. Upstream Receiving Water is defined as a location representative of ambient receiving water conditions prior to mixing with effluent from the Facility.

10. Total Phosphorus effluent and receiving water sampling shall take place twice during the third calendar quarter (July – October). Samples shall be taken at least two weeks apart.

11. Total Phosphorus analysis must be completed using a test method from 40 CFR Part 136 that achieves an ML of 10 µg/L.

12. Total Nitrogen shall be determined by summing total Kjeldahl nitrogen, nitrite-nitrogen, and nitrate-nitrogen concentrations from samples collected concurrently. For example, by

performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/L of Total Nitrogen.

13. See Part I.C.6 for a Total Recoverable Aluminum compliance schedule and interim monitoring requirements.

14. Total Recoverable Copper reporting can use quarterly Whole Effluent Toxicity data.

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

16. After one year of monitoring, if all samples are non-detect for all PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Condition in Part I.C.4.

17. The Permittee shall conduct acute toxicity tests (LC_{50}) once per year and chronic toxicity tests (C-NOEC) quarterly in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*. 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. Acute toxicity test samples shall be collected during the calendar quarter ending September 30th for each calendar year. Chronic toxicity test samples shall be collected four (4) times per year during each calendar quarter. Toxicity test results shall be submitted with the DMRs, no later than the 15th day of the month following the completed reporting period.

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

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

20. Monitoring and reporting for dissolved organic carbon (DOC) are not required as part of the Whole Effluent Toxicity testing protocols but are additional requirements. The Permittee

may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

21. 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.

22. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for biosolids is available. After one year of monitoring, if all samples are non-detect for all PFAS compounds, using EPA's multi-lab validated method for biosolids, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Condition in Part I.C.4.

Part I.A. continued.

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

3. The discharge shall be free from substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.

4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.

6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.

7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.

8. 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).

C. SPECIAL CONDITIONS

1. pH Modification – State Certification Condition

   The pH range may be modified if the Permittee satisfies conditions set forth in the State's Certification detailed in Part I.E.4 below. Upon notification of an approval by the State, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

2. WET Testing Reduction Request

   The Permittee may request a reduction in toxicity testing requirements after submitting a minimum of eight consecutive WET testing results, all of which must be valid tests and demonstrate compliance with the WET permit limitations. Until written notice is received from EPA indicating that the WET testing requirements have been changed, the Permittee is required to continue the WET testing specified in this permit.

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 and NHDES in accordance with Part I.D.3 and I.D.5 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), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, 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) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (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 currently in this permit.

4. PFAS Monitoring Reduction Request

After one year of monitoring, if all samples are non-detect for all four PFAS compounds, using EPA's multi-lab validated method for wastewater and/or biosolids, the Permittee may request to remove the requirement for PFAS monitoring. Until written notice is received from EPA indicating that the monitoring requirements have been changed, the Permittee is required to continue the monitoring specified in this Permit. *See* Reporting Requirements in Part I.D.3.

5. Additional Intake and Discharge Requirements

a. The Permittee shall not use Contoocook River water for non-contact cooling purposes except when the cooling water is used in a manufacturing process as process water either before or after it is used for cooling.
b. The Permittee shall notify EPA and NHDES prior to circumventing one or more of the treatment lagoons.
c. The Permittee shall maintain a vinyl screen or similar method in the fourth (final) lagoon to prevent "short- circuiting" at all times.

d. The Permittee shall notify the regulatory agencies if any water withdrawal causes the Contoocook River to drop below the 7Q10 flow of 14.6 cubic feet per second (cfs).
e. The Permittee shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of solids, such as those which may be removed from the waste treatment operations and equipment cleaning. At no time shall these solids be discharged to the Contoocook River.
f. The Permittee shall neither utilize chlorophenolic containing biocides nor discharge pentachlorophenol or trichlorophenol. The Permittee shall submit an annual certification that states chlorophenolic-containing biocides are not used at the Facility in accordance with 40 CFR §§ 430.114 and 430.124.
g. The Permittee shall notify the regulatory agencies if any Contoocook River water withdrawal is used for process water.

6. Aluminum Compliance Schedule

The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report the monthly average and daily maximum aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limits of 87 µg/L ("final aluminum effluent limit"). The Permittee shall submit an annual report due January 15th of the first three years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

At a minimum, the Permittee shall include the following:

a. An evaluation of all potentially significant sources of aluminum in the facility's production and treatment processes and alternatives for minimizing these sources.

b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of aluminum.

If during the three-year period after the effective date of the permit, New Hampshire adopts revised aluminum criteria but EPA has not yet approved them, then the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(3), for a further delay in the effective date of the final aluminum effluent limit. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification, pursuant to 40 CFR § 122.62(a)(3), to revise the time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the Facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria. In addition, the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(2), if new information is made available providing a site-specific acid soluble aluminum criteria. The final aluminum effluent limit of 87 µg/L may be modified prior to the end of the three-year compliance schedule.

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) BMP/SWPPP reports and certifications, if required;
      (4) Request to discharge new chemicals or additives;
      (5) Request for pH Effluent Limitation Adjustment;
      (6) Request for change in WET testing or discontinuation of per- and polyfluoroalkyl substances (PFAS) sampling requirements;
      (7) Report on unacceptable dilution water/request for alternative dilution water for WET testing;
      (8) River water withdrawal used for process water;
      (9) Water withdrawal causing river to drop below the 7Q10 notification;
      (10) Annual chlorophenolic-containing biocides certification; and
      (11) Circumventing the treatment lagoons.

   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, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

   b. This information shall be submitted to EPA 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 through I.D.6 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following 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 which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Enforcement and Compliance Assurance Division at:

617-918-1510

c. Verbal reports and verbal notifications shall also be made to the State's Regional NPDES inspector at:

603-271-2985

E. STATE 401 CERTIFICATION CONDITIONS

1. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

2. This NPDES Discharge Permit is issued by EPA under Federal law. Upon final issuance by EPA, the NHDES–WD may adopt this Permit, including all terms and conditions, as a State Permit pursuant to RSA 485-A:13. Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

3. The pH range of 6.5 to 8.5 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.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL
USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

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

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

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

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

2. Test Variability (Test Sensitivity)

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

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

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

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

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

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
NH3-N	Ammonia nitrogen as nitrogen
NO3-N	Nitrate as nitrogen
NO2-N	Nitrite as nitrogen
NO3-NO2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

RESPONSE TO COMMENTS

NPDES Permit # NH0000230
Monadnock Paper Mills, Inc.
Monadnock Paper Mills
Bennington, New Hampshire

The U.S. Environmental Protection Agency's Region 1 (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit to Monadnock Paper Mills, Inc. (the Permittee) for the Monadnock Paper Mills manufacturing facility located in Bennington, New Hampshire (the Facility). This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 et. seq.

In accordance with the provisions of 40 CFR §124.17, this document presents EPA's responses to comments received on the draft NPDES Permit # NH0000230 (the "Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the final permit (the "Final Permit"). From July 22, 2021 through August 20, 2021, EPA solicited public comments on the Draft Permit for the reissuance of a NPDES permit to discharge treated wastewater composed of process water from paper manufacturing, recycled non-contact cooling water overflow, mechanical pump seal water, sand filter backwash water, boiler blowdown, tank and machine wash water, stormwater, laboratory wastewater, and neutralized groundwater from Outfall Serial Number 001 to the Contoocook River.

EPA received comments from Monadnock Paper Mills, Inc., dated August 19, 2021.

Although EPA's decision-making process has benefited from the comments submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warrants EPA exercising its discretion to reopen the public comment period. EPA did, however, make certain changes in response to the public comments EPA received on the Draft Permit, listed in Part I, below. The analyses underlying these changes are explained in the responses to individual comments in Part II, below, and are reflected in the Final Permit. EPA maintains that the Final Permit is a "logical outgrowth" of the Draft Permit that was available for public comment.

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

A copy of the Final Permit may be also obtained by writing or calling Nathan Chien, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-1), Boston, MA 02109-3912; Telephone: (617) 918-1649; Email Chien.Nathan@epa.gov.

I. Summary of Changes to the Final Permit

1. A typographical error in the description of the discharge in Part I.A.1 has been corrected. "process waster" has been replaced with "process water."

2. The total phosphorus monitoring frequency has been reduced in accordance with Response to Comment II.A.1. The permit table, Footnote 9, and Footnote 10 in Part I.A.1. have been updated to reflect this.

3. Special Condition I.C.6 has been expanded to include an allowance for permit modification based on the finding of an appropriate site-specific acid soluble aluminum criteria. See Response to Comment II.A.3. In addition, I.C.6.a has been reworded to address sources from an industrial facility rather than a publicly owned treatment work.

4. The Final Sentence in Special Condition I.C.6 has been corrected; the word "schedule" had been omitted.

5. The PFAS Sludge Footnote 22 has been rewritten to clarify the units (nanograms per gram) and delay the reporting requirement until 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for PFAS in biosolids is available. See Response to Comment I.C.6.

6. Footnote 5 and the permit table in Part I.A.1. have been changed to allow for grab sampling in lieu of compositing. See Response to Comment I.A.9.

7. The monitoring frequency for WET testing has been clarified in Footnote 17. See Response to Comment I.A.11.

II. Responses to Comments

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

A. Comments from Monadnock Paper Mills, Inc., on August 19, 2021.

Comment 1

Permit Page 2 of 14 – Part I.A.1. Effluent Characteristic – Total Phosphorus

Footnotes Page 5 of 14, #9 – Representative sampling for phosphorus

Fact Sheet Pages 25 and 26 of 62 – Monitoring requirement for phosphorus

-The draft permit for Monadnock Paper Mills (MPM) contains increased monitoring requirements for Total Phosphorus monthly for the effluent, and monthly 7 of 12 months of the year (April through October) for the upstream receiving water.
The current effective NPDES permit for MPM has requirements to monitor for total phosphorus two times per year in both the effluent and upstream receiving water. Additionally this monitoring was to coincide with times when 1) annual groundwater well rehabilitation was taking place, and 2) when microorganism augmentation and nutrient addition in the treatment lagoons is occuring, both involving the use of phosphates. The Fact Sheet should note that these events represent episodic additions of phosphates and do not characterize phosphorus concentrations in typical/routine wastewater discharges. Accordingly, MPM does not agree that the recorded values in effluent total phosphorus are increasing.
MPM discontinued the practice of microorganism augmentation and nutrient addition in the treatment lagoons as it was determined to be an unnecessary enhancement to the aeration stabilization process in the lagoons. (MPM has requested that this activity be removed from the draft permit and fact sheet). MPM does currently conduct the annual groundwater well rehabilitation, during the annual mill maintenance outage, typically in July of each year (recorded as December value in Table 8 of the Fact Sheet).
Although EPA has concluded in the 2021 Fact Sheet (page 25) that MPM discharges do not have reasonable potential to cause or contribute to an excursion above the Gold Book value based on monitoring data, the draft permit is requiring monthly monitoring for total phosphorus in the effluent.
Additional monitoring requirements are both a burden on limited resources and costly (contract lab and approved methods) for MPM.
As MPM total phosphorus monitoring requirements and results have been tied to episodic additions of phosphates, MPM having discontinued one of these annual activities, recent monitoring results that do not indicate an increase in phosphorus in typical discharges and EPA's evaluation does not indicate a reasonable potential to cause or contribute to an excursion above the Gold Book value, a monthly monitoring requirement does not appear justified. MPM requests that monitoring frequency remain at twice per year for both effluent and receiving water, perhaps between April and October.

Response to Comment 1

The Comment calls in question EPA's updated monitoring requirements for Total Phosphorus. During permit drafting, EPA concluded that while not the sole cause, discharges from activities such as groundwater well rehabilitation and nutrient addition in the treatment lagoons were partially responsible for the elevated phosphorus concentrations observed in the discharge. The Comment indicates that these activities are not routine and historical monitoring data may not be representative of the phosphorus levels in the effluent given changing nutrient addition practices.

Given the historical monitoring data indicating that Total Phosphorus is not being discharged from the effluent at naturally occurring concentrations (see Table 8 on p. 23 of the Fact Sheet), EPA conducted an analysis to determine if the discharge has reasonable potential to violate State WQS found in Env-Wq 1703.14(b) and (c). There is a degree of uncertainty in conducting such an analysis because the WQS cited above are narrative and do not contain a numeric criterion for quantitative analysis. EPA must interpret the narrative criterion and choose an appropriate numeric criterion based on it. As described in Section 5.1.4.1, the effects-based Gold Book value of 0.1 mg/L was chosen as that numeric criterion – this value is modified to 0.09 mg/L in accordance with the NH WQS assimilative capacity requirement, see Env-WQ 1705.01. EPA did not find reasonable potential for the discharge to cause or contribute to an exceedance of the chosen numeric criterion but given the infrequent total phosphorus monitoring (twice per year) and the sensitivity of the analysis to the opposite finding[1], EPA found increased monitoring was warranted in order to collect more representative data.

Due to the Comment's claim that the historical data may be unrepresentative due to changing practices that would lead to less phosphorus being used and discharged in the effluent, EPA is willing to decrease the monitoring frequency. Again, reasonable potential was not found, and nutrient addition to the treatment lagoons is no longer a treatment practice. Given that the period of concern is the growing season, particularly July through September, when surface waterbodies are most susceptible to excess algal growth, effluent monitoring outside of the growing season will not be required. The Final Permit requires effluent and receiving water monitoring twice per year during the third quarter (July – September). If the Permittee were to start using new practices that lead to increases in discharges of total phosphorus or EPA were to find that new growing season monitoring data indicated reasonable potential to cause or contribute to an excursion above WQS, EPA has basis to modify the permit in accordance with 40 CFR § 122.62(a). Footnote 9 has been modified to account for the discontinued nutrient addition practice.

Given the fact sheet is a supplement to the Draft Permit record and not a final document, EPA does not make changes to the fact sheet but requested clarifications are recorded here as comments.

[1] In other words, a slight increase in the effluent or ambient total phosphorus concentrations used in the reasonable potential analysis could have resulted in the opposite finding – that there was reasonable potential to cause or contribute to an excursion above the chosen numeric criterion.

Comment 2

Permit Page 2 of 14 – Part I.A.1. Effluent Characteristic – Nitrite and Nitrate, Total Kjeldahl, Total Nitrogen

Fact Sheet Pages 26 and 27 of 62 – Monitoring requirement for Total Nitrogen and Ammonia Nitrogen

The draft permit contains new requirements to monitor for Nitrite and Nitrate Nitrogen, Total Kjeldahl Nitrogen (and report Total Nitrogen) in the effluent quarterly for "data collection" to facilitate an analysis of whether the MPM discharge is contributing to downstream impairments. The Fact Sheet states that the only total nitrogen data available for MPM is a single value reported in the MPM re-application. The source of this data was a one-time NHDES sampling of MPM effluent conducted on 10/23/19 as part of a "snap shot" evaluation by the state of total nitrogen contribution by point sources to the Merrimack River basin.
The draft permit also requires MPM to continue to monitor ammonia nitrogen quarterly along with Whole Effluent Toxicity testing, although EPA's analysis concludes MPM does not cause or have a reasonable potential to contribute to excursions above Water Quality Standards. Additional monitoring requirements are both a burden on limited resources and costly (contract lab and approved methods) for MPM.
MPM believes monitoring for nitrite and nitrate nitrogen, total kjeldahl nitrogen and reporting total nitrogen twice per year coupled with continued quarterly monitoring for ammonia nitrogen should be an adequate frequency to allow the EPA and NHDES a better understanding of MPMs' contribution to the loading of nitrogen to the receiving stream and Merrimack River basin.

Response to Comment 2

The Comment requests a reduction in the Total Nitrogen monitoring requirement. As discussed in the Fact Sheet, the TN monitoring requirement was established so EPA could understand the loading of point source discharges to the Merrimack River watershed.

The Facility discharges to the Contoocook River, a tributary to the Merrimack River. After traveling south across the Massachusetts-New Hampshire state line, the Merrimack River flows east towards Salisbury/Newbury where it transitions into an estuarine system, mixing with Atlantic Ocean water. Recent nitrogen data collected as part of a US Army Corps of Engineers and CDM Smith watershed assessment indicated elevated total nitrogen and chlorophyll 'a' levels.[2] In samples with salinity greater than 10 ppt, total nitrogen ranged from 0.442 to 1.67 mg/L while chlorophyll 'a' ranged from 4 to 42 ppt.[3] EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as most of these results are outside the range typically found in healthy estuaries in Massachusetts.[4]

[2] CDM Smith/US Army Corps of Engineers New England District, *Merrimack River Watershed Assessment Study - Phase III Final Monitoring Data Report August 2017*, Appendix C.
[3] Id.
[4] Howes, Brian, et al, *Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report*, Massachusetts Estuaries Project, December 22, 2003.

The densely populated Merrimack River watershed receives point source discharges from 40 POTWs, comprising approximately 15,000 lb/day of total nitrogen.[5] Four of these POTWs discharge to the Contoocook River.[6] EPA estimates that the loads from these facilities range from 26 to 65 lb/day. For comparison, EPA calculated the potential Total Nitrogen load from Monadnock Paper Mill. As the Comment states, NHDES in coordination with the Permittee analyzed a single Total Nitrogen sample of the Facility's effluent in October of 2019, and found a concentration of 3.67 mg/L. Given the average monthly flow limit from the Draft Permit, 1.0 MGD, an equivalent load can be calculated:

3.67 mg/L * 1.0 MGD * 8.34 conversion factor = 30.6 lb/day

This value is similar, albeit on the low-end, of the loads from the other Contoocook River point source discharges. Given the potential significant contribution of Total Nitrogen from Monadnock Paper Mill, EPA finds that monitoring is necessary in order to quantify Total Nitrogen loading and, in the future, may need to potentially implement a total nitrogen control plan to prevent a new nutrient impairment.

It should be noted that the monitoring frequency proposed in the Draft Permit is less burdensome than similar monitoring requirements implemented for other permitted discharges in the Merrimack River watershed. POTW permits are being reissued with weekly monitoring requirements during the growing season and monthly requirements for the rest of the year.[7] EPA finds that for this monitoring program, quarterly monitoring is the most infrequent approach that could yield a representative estimate of the annual average nitrogen load from the paper mill. Any less would not capture seasonal variation at this initial data collection stage.

The requirement to monitor total ammonia nitrogen is separate from the nutrient monitoring requirement discussed above. Ammonia is one of the standard toxic pollutants required to be monitored in conjunction with Whole Effluent Toxicity testing (metals and total residual chlorine are similarly required in this way). Additional monitoring, separate from WET testing, can be required when EPA suspects such pollutants are a major control on or cause of toxicity. For Monadnock Paper Mill, this was the case for Total Aluminum and Total Copper. It should be noted that effluent ammonia concentrations have exceeded water quality criteria in the past. No changes have been made to the Total Ammonia Nitrogen monitoring requirement.

Comment 3

Permit Page 2 of 14 – Part I.A.1. Effluent Characteristic – Total Recoverable Aluminum, and Footnote page 6 of 14, #13 and part I.C.6, page 11 of 14 – Aluminum Compliance Schedule

[5] Estimated from discharge monitoring reports.
[6] Henniker WWTP (NH0100102), Peterborough WWTP (NH0100650), Jaffrey WWTP (NH0100595), and Hillsborough WWTP (NH0100111).
[7] See for example permits for: the Penacook WWTP (NH0100331) and City of Haverhill (MA0101621). Available at: https://www.epa.gov/npdes-permits/npdes-water-permit-program-new-england.

Fact Sheet Pages 28 and 29 of 62 – Metals and Aluminum monitoring and 3-year Compliance Schedule

The draft permit contains a new requirement for MPM to monitor Total Recoverable Aluminum, once per month in the effluent and imposes a permit limit of 87 ug/l. In the previous MPM permit renewal in 2015, MPM demonstrated to the satisfaction of EPA and NHDES that the total aluminum standard is low and unrealistic, based on an analysis of acid soluble aluminum in the Contoocook River. This resulted in an EPA determination that MPM discharges did not have reasonable potential to exceed chronic toxicity standards, and therefore a monthly average total aluminum limit of 87 ug/l was removed from the final permit. The current Fact Sheet states that NHDES has determined that the 2015 analysis for evaluating the criteria could no longer be used because there was an insufficient amount of data, and the data was not recent enough.
Due to the potential for NHDES to adopt new aluminum criteria recommendations made by EPA in 2018, EPA has included a schedule of compliance, a 3-year period to achieve compliance, and an option for MPM to apply for a permit modification to amend the permit should the NHDES adopt EPA recommendations as state water quality criteria.
MPM understands and supports NHDES adopting the 2018 EPA Guidance for Total Recoverable Aluminum criteria, within 3 years, however in the interim monthly monitoring for TRA will again represent an added burden and cost to MPM, where it was determined that there was not a reasonable potential or need for monitoring in 2015.
Given the uncertainty of NHDES adopting EPA's aluminum criteria recommendations within the 3 years outlined in the compliance schedule, and the fact that the previous acid soluble analysis in 2015 in the receiving stream successfully demonstrated that the current criterion for total aluminum is low and unrealistic, MPM requests that EPA allow additional acid soluble testing and evaluation be admissible as an alternative. It is apparent that the original total aluminum criteria did not work. In the event that it becomes evident that NHDES is not going to adopt EPA's 2018 recommendations within the 3-year compliance schedule, EPA and NHDES would allow an updated, approved acid soluble evaluation for the purpose of determining reasonable potential to exceed toxicity standards.

Response to Comment 3

The monitoring requirement for total aluminum is partially carried forward from the 2015 Permit where quarterly aluminum monitoring was required as part of Whole Effluent Toxicity testing. While EPA recognizes added monitoring for any parameter can be costly, total aluminum monitoring is particularly necessary and important because of its potential to cause toxic effects in the receiving water. In the 2015 Permit, EPA did not determine that monitoring was unnecessary as the Comment asserts but instead allowed for WET testing results – which contain total aluminum monitoring data as a requirement of the WET protocol – to be used for reporting purposes. However, as the Comment points out, a new effluent limitation and monthly monitoring is now required.

To clarify, in 2015, EPA and NHDES did not determine that the current water quality criterion for aluminum is "low and unrealistic." Instead, EPA and NHDES determined that the four data sets collected in 2014 comparing acid soluble and total recoverable aluminum concentrations in the Contoocook River could be used to derive a site-specific total recoverable aluminum

criterion. For the permit reissuance, the agencies did not have any new data to reassess whether that modified criterion was applicable and so defaulted to the environmentally conservative assumption that the discharge should not exceed a value of 87 µg/L. This decision was foreshadowed by the statement on page 6 of the 2015 Permit Response to Comments document:

> In addition, the Permittee should be aware that more updated acid soluble data may be needed for future reasonable potential analyses.[5]
>
> [5] While the acid-soluble aluminum data presented by the Permittee was sufficient to develop the aluminum criteria for this permit reissuance, EPA notes that for future reissuances EPA may require updated acid-soluble data to confirm that the acid-soluble fraction in the receiving water has not changed substantially. Although acid-soluble aluminum monitoring is not a permit requirement, it may be in the Permittee's best interest to perform such sampling and provide a sufficient data set at the time of the next permit reissuance.

EPA understands the uncertain position the Permittee is in with respect to the new aluminum limit. As stated in the 2015 document, EPA would accept new data demonstrating a site-specific acid soluble aluminum criterion for the Contoocook River at the discharge point. However, such a dataset and determination would be contingent on NHDES approval as it would require an interpretation of New Hampshire Water Quality Standards and deviation from current permitting practices in assessing aluminum reasonable potential. Therefore, prior to initiating any kind of monitoring program, EPA recommends contacting the NHDES Watershed Management Bureau for sampling plan approval. Following such discussions, a permit modification request would need to be submitted to EPA with an accompanying statement from NHDES proposing a site-specific aluminum criterion that could be used to re-assess reasonable potential. EPA has modified the Special Condition language in Part I.C.6. to include the "new information" regulation (40 CFR 122.62(a)(2)) as a basis for permit modification.

In correspondence to EPA, NHDES stated, "It should be noted here that DES is planning to adopt total recoverable aluminum criteria, at which point the revised limit and acid soluble data would be irrelevant. The permittee should be aware of the limited value of this data."

Comment 4

Permit Page 11 of 14 – <u>Part I.C.6. Special Conditions – Aluminum Compliance Schedule</u>

As part of the Aluminum Compliance Schedule in the draft permit there is a new requirement for MPM to submit an annual report due Jan 15th, of the first 3 years of the permit, that includes at a minimum;

- Sources of aluminum and alternatives for minimizing these sources.
- Evaluation of alternate modes of operating at the wastewater treatment plant in order to reduce the effluent levels of aluminum.

An additional report such as this will again represent a burden on MPM resources and could require costly consulting services.

Due to the fact that MPM will likely apply for a permit modification to amend the permit should New Hampshire adopt new criteria for aluminum based on EPA's 2018 aluminum recommendations, and MPM being required to conduct dissolved organic carbon monitoring quarterly in anticipation of New Hampshire's use of the new aluminum criteria, MPM requests that the annual report requirement be waived at least until NHDES either adopts EPA's recommendations or allows an alternate criteria evaluation, and could be revisited should the subsequent reasonable potential analysis deem it necessary.

Response to Comment 4

The Comment requests a reduction in the annual aluminum compliance report requirement. This reporting requirement is consistent with other New Hampshire wastewater treatment plants that have reasonable potential to cause or contribute to an exceedance of Aluminum WQS. See, e.g., permits for the Milford Wastewater Treatment Facility (NH0100471) and the Newport Wastewater Treatment Facility (NH0100200).[8] The primary concern cited by the Comment is cost; however, EPA does not find these annual reports prohibitively costly. Much of the information that would be supplied in such a report is common information that a well-run manufacturing facility and/or treatment plant would already know about their process and plant operations. Since the requirement is not overly prescriptive, the Permittee has wide latitude on the type of report and details needed that would comply with the Special Condition. Therefore, given no new information has been raised that would put in question the regulatory basis for such a report, the Final Permit condition has not been changed.

Comment 5

Permit Page 2 of 14 – Part I.A.1. Effluent Characteristic – PFAS monitoring in effluent (4 compounds)

Footnotes Page 6 of 14, #15 – PFAS – EPA multi-lab validated method

Fact Sheet Pages 30, 31 and 32 of 62 – EPA's "Interim Strategy for PFAS in federally issued NPDESs"

The draft permit contains a new requirement to monitor for four PFAS compounds in the treatment plant effluent quarterly. This new requirement appears to be related the November 2020 EPA "Interim Strategy for Per- and Polyfluoroalkyl Substances in Federally Issued NPDES Permits", that includes phased-in monitoring. The purpose of the PFAS monitoring is explained in the Fact Sheet as to better understand potential sources of PFAS and to inform future permitting decisions. The Fact Sheet suggests that an EPA workgroup's recommendation was to include specific facilities in phased-in monitoring, including "Paper and Packaging Manufacturers" as some are potential point sources of PFAS. MPM acknowledges that current data shows that "some" paper and packaging manufacturers indeed are, typically including those that design and manufacture products that require grease resistance, water repellency or specific

[8] Available at: https://www.epa.gov/npdes-permits/new-hampshire-final-individual-npdes-permits.

food application coatings, etc. Respectfully, the recommendation by the EPA workgroup is a rather "broad-brush" approach.
MPM does not specify use of raw materials that contain PFAS compounds in paper manufacturing, and has a robust raw material approval (RMA) process for new raw materials, to confirm that we do not introduce a new source of PFAS contamination. We do not anticipate the presence of any PFAS compounds in the wastewater effluent (besides the potential for a detection due to the ubiquitous nature of these compounds due ot their extensive use in commerce and society.)
PFAS monitoring requires very comprehensive, delicate and regimented sampling along with expensive testing. In fact, actual wastewater field sampling methodologies have not yet been worked out and analytical test methods have not been finalized as indicated in the fact sheet.[1] MPM requests that EPA confirm in the response, if this is still the case.
We believe a requirement to test the effluent for four PFAS compounds annually, perhaps in a different quarter each year to capture each season, coupled with annual wastewater treatment plant sludge PFAS sampling required by our NHDES issued Sludge Quality Certificate (see comment #6 below), will adequately demonstrate if PFAS compounds are present in our processes or discharge.

Footnote 1: Method 8327 appears to be a finalized method for PFAS in wastewater but we assume it will not be suitable for this application because of high detection limits and its limited acceptance by NHDES, Department of Defense and other stakeholders.

Response to Comment 5

EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. See, e.g., CWA § 308, 402(a)(2) and implementing regulations. As discussed in the Fact Sheet at page 31, the purpose of this monitoring and reporting requirement is "to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis." These permitting decisions may include whether there is reasonable potential to cause or contribute to a violation of the State water quality standards in the next permit reissuance, and if there is, to inform the development of numeric effluent limits or pollutant minimization practices, or some combination.

EPA acknowledges the possibility that PFAS are not being discharged by Monadnock Paper Mill. As such the PFAS monitoring condition allows for an elimination of monitoring if, after one year of monitoring (equivalent to four samples), all samples are non-detect for all PFAS compounds. Due to the dearth of current information on PFAS's presence in wastewater discharges from paper mills, EPA does not find removal of the entire requirement warranted, as is implied and requested by the Comment. The quarterly monitoring frequency is consistent with other wastewater treatment plants with design flows greater than 1.0 MGD.[9]

[9] See, for instance, the draft permits for the Ashland and Allenstown Wastewater Treatment Plants (NH0100005 and NH0101390, respectively). Available at: https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits. For Monadnock, the design flow is being equated to the maximum daily flow limit.

Regarding the availability of an analytical method for quantifying PFAS in wastewater. There currently is no CWA Part 136 approved method for testing PFAS. However, Draft Method 1633 has been promulgated by EPA. See EPA's CWA Analytical Methods for Per- and Polyfluorinated Alkyl Substances (PFAS) webpage, https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas. Given the lack of widespread laboratory availability and its draft status, EPA is not requiring the use of that method at this time. However, in accordance with 40 CFR 122.44(i)(1)(iv)(B) and Footnote 15 in the Final Permit, EPA may notify the Permittee that the analytical method is available and that they should begin monitoring six months after such notification.

Comment 6

Permit Page 4 of 14 – Part I.A.1. Sludge Characteristic – PFAS monitoring in Sludge (4 compounds)

Footnotes Page 7 of 14, #22 – Guidance document

The draft permit contains a new requirement to monitor for four PFAS compounds in Sludge Characteristic quarterly. Additionally, footnote #22 stipulates that sludge sampling shall be representative based on an EPA guidance document (a 100 page guidance document for sludge sampling at POTWs from August 1989), as applicable for a non-POTW.
There is no explanation in the Fact Sheet describing the basis for this new permit condition.
It is currently assumed by MPM that the basis may be related the November 2020 EPA "Interim Strategy for Per and Polyfluoralkyl Substances in Federally Issued NPDES Permits", that includes phased-in monitoring. The purpose of the PFAS monitoring is explained in the Fact Sheet as to better understand potential sources of PFAS and to inform future permitting decisions.
Monadnock Paper Mills was issued and maintains a Sludge Quality Certificate (SQC), #SQC-9707 by NHDES Residuals Management Section of the Wastewater Management Bureau, most recently renewed in January of 2020 (see as an attachment to this comment letter). Among other benefits, this certificate allows MPM to recycle all of our short paper fiber sludge generated from the wastewater treatment plant, including land application in New Hampshire as a Class A biosolids.
Currently, and since 2018 NHDES has required annual monitoring for PFAS compounds in the sludge. Initially for 9 PFAS compounds in 2018, and since 2019 for 24 PFAS compounds.
Because MPM does not intentionally use raw materials that contain PFAS compounds in paper manufacturing, and has a robust raw material approval process for new raw materials, we do not anticipate the presence of any PFAS compounds in the sludge (besides the potential for a detection due to the ubiquitous nature of these compounds due to their extensive use in commerce and society.) However due to requirements in the Sludge Quality Certificate issued by NHDES we are monitoring annually for 24 PFAS compounds to confirm the presence or lack thereof.
PFAS monitoring requires very comprehensive, delicate and regimented sampling along with expensive testing.
Therefore we believe the requirement in this draft permit would be redundant and excessive and request that this requirement be removed from the permit.

Response to Comment 6

The Draft Permit requires quarterly monitoring of PFAS in sludge in conjunction with the effluent monitoring discussed in Response to Comment II.A.6. Currently there is limited understanding of the prevalence of PFAS across different industrial sectors. In addition, due to the dearth of PFAS monitoring data from wastewater treatment plants (publicly and privately owned), the interactions of PFAS in the wastewater treatment process is poorly understood. Of particular importance to the development of industrial effluent standards (i.e., effluent limitation guidelines) is how, if at all, PFAS gets transformed and partitioned to effluent and sludge through the treatment process. CWA § 308(a) grants EPA the authority to impose monitoring requirements (including of sludge) reasonably necessary to carry out the purposes of the Act, which would encompass sludge management, as well as determining the need for, and the development of, effluent limitations:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
> …the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require…"

In this case, sludge monitoring is being required to better "assist" EPA in understanding the fate and transport of PFAS in the papermaking process and potential future development of effluent limitations and/or effluent standards for the papermaking industrial sector.

EPA recognizes that the Facility is required to monitor its sludge for PFAS in accordance with its NHDES-authorized Sludge Quality Certification. Based on data provided by the Permittee as a supplement to these comments, the method of analysis used for their SQC monitoring did not use a CWA-approved test method. As discussed above, EPA is in the process of finalizing EPA Draft Method 1633 which is suited for the analysis of biosolids. When that method is finalized and if it is used for the SQC monitoring, the Permittee may use that data to fulfill the requirements of this NPDES permit.

As the comment points out, Footnote 22 of the Draft Permit provided a link to a manual that is applicable to POTWs and not necessarily paper manufacturing wastewater treatment plants. EPA anticipates that when a CWA Part 136 method is finalized, the method will provide the appropriate guidance for sampling and analysis of PFAS in biosolids. As such, the footnote has

been modified in the Final Permit to remove reference to this document, clarify the units, and note that the same procedure as effluent monitoring is available to remove the sludge PFAS monitoring requirement once EPA has been provided with four samples showing non-detect for all four compounds.

Comment 7

Permit Page 4 of 14 – Part I.A.1. Ambient Characteristic – Dissolved Organic Carbon

Fact Sheet Page 29 of 62 – Dissolved Organic Carbon monitoring requirement

The draft permit contains a new requirement to monitor dissolved organic carbon quarterly in the receiving water. In the Fact Sheet the reason for this is explained as "In anticipation of New Hampshire's use of the new aluminum criteria, receiving water dissolved organic carbon monitoring is required quarterly, so that EPA has sufficient data to calculate corresponding criteria values."
Additional monitoring requirements are both a resource burden and costly for MPM.
In the event that New Hampshire does not adopt the new aluminum criteria, based on EPA's 2018 guidance, MPM requests that this requirement be removed from the permit.

Response to Comment 7

NHDES has indicated to EPA that a new aluminum criterion is likely to be adopted by the State in the coming years. However, EPA agrees that if a new aluminum criterion were not adopted, Dissolved Organic Carbon (DOC) would not be needed to assess compliance with State WQS. If new information were to arise indicating that NHDES was no longer planning to adopt the new criterion, then the Permittee could submit a permit modification request in accordance with 40 CFR § 122.62 to remove the monitoring requirement.

Comment 8

Permit Page 4 of 14 – Part I.A.1. Ambient Characteristic – pH and Temperature monitoring on receiving water during Toxicity

Footnotes Page 7 of 14, #21 – River pH and Temperature monitoring requirement during WET sampling

The draft permit contains new requirements to monitor and report temperature and pH of the receiving water quarterly at the time of collection, independent from any pH and temperature measurements required by WET testing protocols.
There is no explanation in the Fact Sheet describing the basis for these new permit conditions.
Additional monitoring requirements are both a resource burden and costly for MPM.
There is plenty of temperature and pH data documented for the Contoocook River through New Hampshire's VRAP program and other sources.
MPM requests removal of these new requirements from the permit.

Response to Comment 8

Water quality criteria for total ammonia nitrogen are pH and temperature dependent. See NH WQS, Env-Wq 1703.25. The pH and temperature taken by the laboratory of the ambient grab sample will not necessarily represent the pH and temperature conditions of the Contoocook River at the time the sample was taken. Therefore, EPA is requiring that an independent sample of river water pH and temperature be taken at the same time the ambient WET grab sample is taken. EPA does not find this requirement to be burdensome on the Permittee as these are standard field sampling parameters and they require minimal equipment to measure appropriately. EPA has broad authority under the CWA and NPDES regulations to prescribe the collection of data and reporting requirements in NPDES Permits. See, CWA § 308.

Comment 9

Permit Page 2 of 14 – Part I.A.1. Effluent Characteristic – Sample Type

Footnote Page 5 of 14, #5 – 24 hour composites collected proportionally to flow

The draft permit contains a new requirement for MPM to collect "Composite" samples for all effluent monitoring, with the exception of effluent pH. Further footnote #5 stipulates that the composites be collected proportional to flow.
There is no explanation in the Fact Sheet describing the basis for this new permit condition. All past MPM permits (including the current permit) have required grab samples for all effluent monitoring.
We assume that the basis may have to do with providing "a more representative sample" for the monitoring. MPM's aeration stabilization process lagoons are operated in series. The four lagoon ponds represent a total of approximately 8.4 million gallons. Based on maximum daily and average monthly permitted flow limits this represents 6 to 8 days detention time. The actual flows are approximately half of the permitted flow resulting in much longer detention time. Effluent quality and flow level does not vary hourly as in some treatment plants, however slowly over days. Intentionally effluent samples are collected mid-week and reflect typical mill production conditions. A grab sample taken from the effluent is indeed representative of a 24 hour condition as changes to lagoon influent flow and characteristics are averaged in the large ponds.
Collecting multiple grab samples (at least eight) of each consecutive 24-hour sampling day of many necessary sampling days/year required in the permit is unrealistic due to staffing levels. To purchase a refrigerated effluent composite sampler capable of flow proportioning would be expensive ($6,000 - $8,000 per unit). Set up, programming, calibration and maintenance year round is time consuming. Even expensive well maintained sampling units are subject to malfunction, power outages, flow blockage that can result in inadequate volume or no sample. It is uncertain at this time if a composite sampler can be used for PFAS testing without potential for sample contamination by containers, tubing, strainers, etc. Successfully facilitating and verifying dependable flow proportioned composite samples would be an added burden and costly, without a tangible advantage in terms of achieving a representative sample. Depending on final permit monitoring requirements and methods, MPM may also require more than 1 sampling unit to satisfy sampling volume requirements.

As the treatment plant design and operation result in once daily samples being representative of daily conditions we believe the enhanced requirement to composite sample is unnecessary and a burdensome requirement. We request that sample type remain as grab samples for effluent monitoring requirements.

Response to Comment 9

The Comment is correct in that EPA's intention in requiring composite sampling was to ensure that samples are representative of average daily conditions. However, given the information provided here and EPA's determinations in prior permitting actions that grab sampling is appropriate for this specific lagoon system, EPA finds that grab sampling remains appropriate for collecting a representative sample. This does not preclude EPA from modifying this determination during future permitting actions. As a result, the Final Permit has converted the sampling type requirements from composite back to a grab.

Comment 10

Fact Sheet Page 20 of 62 – Alternate pH range

The draft permit will maintain the alternate pH range of 6.5 to 8.5 for the effluent. However to maintain this pH range during the next permit issuance NHDES is requiring a new alternative pH limit study.

Publically available sources, such as New Hampshire's Volunteer River Assessment Program (VRAP) data, document and demonstrate that the Contoocook River in the vicinity of Monadnock Paper Mills is chronically on the low end for Water Quality Standards for pH, typically between 6.0 and 7.0. On page 18 of 62 of the Fact Sheet the segment of the receiving water that encompasses MPM's discharge is listed as being on the New Hampshire 2018 303(d) list of impaired waters as violating water quality standards for low pH, requiring a TMDL. In 2016/2017 MPM did an alternative pH limit study and successfully demonstrated that increasing the upper effluent pH limit from 8.0 to 8.5 would not cause violations of the state's WQS's. Given that it is well documented that the Contoocook River is chronically and consistently low in pH, it is apparent that a slightly higher alternate pH limit for MPM's discharge of 8.5, rather than 8.0 is highly unlikely to cause a violation of New Hampshire's WQS's.
MPM requests that the requirement to conduct an additional alternative pH limit study be removed from the permit.

Response to Comment 10

The Permit does not contain any requirement to conduct an alternative pH limit study. This study was mentioned in the fact sheet to make the Permittee aware of NHDES procedures regarding maintaining alternate pH limitations in renewed NPDES permits. It is recommended that the Permittee work with NHDES prior to permit expiration to provide information necessary to ensure that that need is met. Alternatively, the NPDES pH limitations would return to the WQS-levels, 6.5 – 8.0 S.U.

Comment 11

Footnote Page 6 of 14, #17 – Conduct acute and chronic toxicity testing

Footnote #17 states "The Permittee shall conduct acute toxicity tests (LC50) and chronic toxicity tests (C-NOEC) 1/year in accordance with test procedures and protocols specified in **Attachment A and B** of this permit." This frequency is in conflict with the quarterly frequency for C-NOEC testing listed in the Effluent Limitations and Monitoring Requirements table in Part I.A.1. Please clarify and modify table or footnote.

Response to Comment 11

EPA has corrected the footnote to make it consistent with the permit limit table and fact sheet justification (see Section 5.1.8, p. 32-33). Chronic WET tests are required quarterly, and acute WET tests are required annually.

Comment 12

Additional Fact Sheet clarifications for accuracy
Please remove wording with ~~strikethrough~~, and add wording in **bold.

Fact Sheet Page 12 of 62

Please modify the Fact Sheet as follows:

…and coated papers from purchased pulp including technical/specialty papers, premium printing and packaging papers for a number of different (~~vendors~~) **customers.** The Facility manufactures over 200 distinct paper grades through operation of two paper machines. The Facility also operates (~~a two~~) **one** paper coating machine for production of specialty products. The location of the Facility can be seen in Figure 1.
The Facility produces paper products for (~~four~~) **multiple** distinct product lines that use similar paper production mechanisms and generate similar wastewaters. Products are shipped offsite after paper production and all wastewater produced through the paper making process is transported to the wastewater treatment system before discharging through Outfall 001 to the Contoocook River.

Fact Sheet Page 14 of 62

Please modify the Fact Sheet as follows:

The majority of the wastewater generated at the Facility consists of (~~treated filter backwash water~~) **process water from the paper machines (that is not recycled), wash-up water from the coater and sandfilter backwash water.** Generally, (~~two rapid filter backwashes~~) **six sandfilter backwashes are conducted each day.** (~~Each of the six filters operate for approximately 72 hours before backwashing is performed~~). Each backwash episode requires about (~~135,000~~) **6,000** gallons of filtered water, on average. Filtered water, rather than (~~finished~~) **raw** water, is typically used to backwash filters. The Facility also conducts periodic maintenance

activities which may include cleaning and flushing of filters and other facility (~~appurtenances~~) **screening devices** or other testing and maintenance, including repairs and construction.

Fact Sheet Page 15 of 62

Please modify the Fact Sheet as follows:

All the wastewater streams, except for (~~neutralized groundwater well rehabilitation wastewater~~) **well rehabilitation neutralized groundwater** flow past two bar racks into a 13,000-gallon wet well (i.e., sump) which also receives stormwater un-impacted by industrial activity from four of twenty-eight roof drains. All other stormwater generated on site is covered by the Facility's Multi-Sector General Permit (MSGP Permit ID ~~NHR05BU27~~ **NHR053105**). ~~If necessary, the wastewater is neutralized with sodium hydroxide.~~ The wastewater is then pumped from the wet well to a clarifier. During transfer of the wastewater from the wet well to the clarifier, two polymers (a cationic coagulant and an anionic ~~coagulant~~ **flocculant**) are added to enhance the settling of suspended short paper fibers. After settling, the short paper fibers are pumped to a dewatering press. The filtrate from the press is returned to the wastewater treatment system via the wet well, and the solids are recycled offsite. After treatment in the clarifier, the wastewater sequentially flows through four lagoons, the middle two of which are aerated for secondary treatment. ~~Bacteria and nutrient rich packing media are only added to the lagoon treatment system during the spring and summer months.~~ Sludge is continuously dredged from the lagoons during the day using a sediment control system called a "sludge sled**"**. The sludge is directed back to the primary treatment system to be removed in the clarifier. After leaving the lagoons, the treated wastewater discharges to the Contoocook River through Outfall 001.

Response to Comment 12

EPA acknowledges that the cited language in the fact sheet, much of it carried forward from the previous permit, was outdated or inaccurate. Since the fact sheet is part of the Draft Permit record and not a final document, the fact sheet is not corrected and re-noticed with the Final Permit issuance. Instead, the corrections made by the Comment are noted here in this response to comments document that accompanies the Final Permit.

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"),

Monadnock Paper Mills, Inc.

is authorized to discharge from a facility located at

117 Antrim Road
Bennington, New Hampshire 03442

to receiving water named

Contoocook River (Hydrologic Code: 01070003)

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

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

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

This Permit supersedes the Permit issued on September 18, 2015.

This Permit consists of this **cover page**, **Part I**, **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013) and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated wastewater composed of process waster from paper manufacturing, recycled non-contact cooling water overflow, mechanical pump seal water, sand filter backwash water, boiler blowdown, tank and machine wash water, stormwater, laboratory wastewater, and neutralized groundwater through **Outfall Serial Number 001** to the Contoocook 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]	1.0 MGD	1.3 MGD	Continuous	Meter
pH[7]	6.5 - 8.5 S.U.		1/Day	Grab
5-day Biochemical Oxygen Demand (December – March)[8]	400 lbs/day	500 lbs/day	1/Week	Composite
5-day Biochemical Oxygen Demand (April – November)[8]	300 lbs/day	400 lbs/day	1/Week	Composite
Total Suspended Solids (TSS)[8]	300 lbs/day	400 lbs/day	1/Week	Composite
Total Phosphorus[9,10,11] Effluent Upstream Receiving Water	 --- ---	 Report µg/L Report µg/L	 1/Month 1/Month	 Composite Grab
Nitrite and Nitrate Nitrogen	---	Report mg/L	1/Quarter	Composite
Total Kjeldahl Nitrogen	---	Report mg/L	1/Quarter	Composite
Total Nitrogen[8,12]	---	Report mg/L Report lbs/day	1/Quarter	Composite
Total Recoverable Aluminum[13]	87 µg/L	---	1/Month	Composite
Total Recoverable Copper[14]	---	14.5 µg/L	1/Quarter	Composite
Perfluorohexanesulfonic acid (PFHxS)[15,16]	---	Report ng/L	1/Quarter	Composite
Perfluorononanoic acid (PFNA)[15,16]	---	Report ng/L	1/Quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[15,16]	---	Report ng/L	1/Quarter	Composite
Perfluorooctanoic acid (PFOA)[15,16]	---	Report ng/L	1/Quarter	Composite

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Whole Effluent Toxicity (WET) Testing[17,18]				
LC_{50}	---	≥ 100 %	1/Year	Composite
C-NOEC	---	≥ 10.4 %	1/Quarter	Composite
Hardness	---	Report mg/L	1/Quarter	Composite
Total Residual Chlorine	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Composite
Total Recoverable Aluminum	---	Report µg/L	1/Quarter	Composite
Total Recoverable Cadmium	---	Report µg/L	1/Quarter	Composite
Total Recoverable Copper	---	Report µg/L	1/Quarter	Composite
Total Recoverable Nickel	---	Report µg/L	1/Quarter	Composite
Total Recoverable Lead	---	Report µg/L	1/Quarter	Composite
Total Recoverable Zinc	---	Report µg/L	1/Quarter	Composite

Ambient Characteristic[19]	Reporting Requirements		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Hardness	---	Report mg/L	1/Quarter	Grab
Total Residual Chlorine	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Organic Carbon	---	Report mg/L	1/Quarter	Grab
Total Recoverable Aluminum	---	Report mg/L	1/Quarter	Grab
Total Recoverable Cadmium	---	Report mg/L	1/Quarter	Grab
Total Recoverable Copper	---	Report mg/L	1/Quarter	Grab
Total Recoverable Nickel	---	Report mg/L	1/Quarter	Grab

Total Recoverable Lead	---	Report mg/L	1/Quarter	Grab
Total Recoverable Zinc	---	Report mg/L	1/Quarter	Grab
Dissolved Organic Carbon[20]	---	Report mg/L	1/Quarter	Grab
pH[21]	---	Report S.U.	1/Quarter	Grab
Temperature[21]	---	Report °C	1/Quarter	Grab

Sludge Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Perfluorohexanesulfonic acid (PFHxS)[22]	---	Report ng/L	1/Quarter	Grab/Composite
Perfluorononanoic acid (PFNA)[22]	---	Report ng/L	1/Quarter	Grab/Composite
Perfluorooctanesulfonic acid (PFOS)[22]	---	Report ng/L	1/Quarter	Grab/Composite
Perfluorooctanoic acid (PFOA)[22]	---	Report ng/L	1/Quarter	Grab/Composite

Footnotes:

1. Effluent samples shall yield data representative of the discharge. A routine sampling program shall be developed in which samples are taken from the flow measuring flume located after the treatment lagoons during the discharge of effluent to the Contoocook River. 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 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/Day is defined as the recording of one measurement for each 24-hour period. 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/quarter is defined as the sampling of one discharge event during each calendar quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. The 1/year monitoring frequency for WET testing is defined further in the WET testing footnotes below. 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 monitored by a continuous recording flow meter containing a totalizer at the discharge flume of Outfall 001. Flow shall be reported in million gallons per day (MGD).

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

8. Mass-based loadings are to be calculated using the following equation: Load (lbs/day) = Flow (MGD) X concentration (mg/L) X 8.34 (conversion factor). The monthly average effluent loading is calculated by dividing the sum of the daily discharge loadings for the month by the number of sample measurements taken during the month.

9. Sampling for Total Phosphorus in the effluent during any given monitoring period must be representative of monthly average conditions and include times when groundwater well rehabilitation effluent and nutrient addition from the treatment lagoons will be discharged. Upstream Receiving Water is defined as a location representative of ambient receiving water conditions prior to mixing with effluent from the Facility.

10. Total Phosphorus effluent sampling shall take place year-round, while receiving water sampling is only required from April 1st through October 31st.

11. Total Phosphorus analysis must be completed using a test method from 40 CFR Part 136 that achieves an ML of 10 µg/L.

12. Total Nitrogen shall be determined by summing total Kjeldahl nitrogen, nitrite-nitrogen, and nitrate-nitrogen concentrations from samples collected concurrently. For example, by performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/L of Total Nitrogen.

13. See Part I.C.6 for a Total Recoverable Aluminum compliance schedule and interim monitoring requirements.

14. Total Recoverable Copper reporting can use quarterly Whole Effluent Toxicity data.

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

16. After one year of monitoring, if all samples are non-detect for all PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. *See* Special Condition in Part I.C.4.

17. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) 1/year in accordance with test procedures and protocols specified in **Attachment A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*. 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. Acute toxicity test samples shall be collected during the calendar quarter ending September 30th for each calendar year. Chronic toxicity test samples shall be collected four (4) times per year during each calendar quarter. Toxicity test results shall be submitted with the DMRs, no later than the 15th day of the month following the completed reporting period.

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

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

Minimum levels and test methods are specified in **Attachment A and B**, Part VI. CHEMICAL ANALYSIS.

20. Monitoring and reporting for dissolved organic carbon (DOC) are not required as part of the Whole Effluent Toxicity testing protocols but are additional requirements. The Permittee may analyze the WET samples for DOC or may collect separate samples for DOC concurrently with WET sampling.

21. 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.

22. Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf, as applicable for a non-POTW.

Part I.A. continued.

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

3. The discharge shall be free from substances in kind or quantity that settle to form harmful benthic deposits; float as foam, debris, scum or other visible substances; produce odor, color, taste or turbidity that is not naturally occurring and would render the surface water unsuitable for its designated uses; result in the dominance of nuisance species; or interfere with recreational activities.

4. Tainting substances shall not be present in the discharge in concentrations that individually or in combination are detectable by taste and odor tests performed on the edible portions of aquatic organisms.

5. The discharge shall not result in toxic substances or chemical constituents in concentrations or combinations in the receiving water that injure or are inimical to plants, animals, humans or aquatic life; or persist in the environment or accumulate in aquatic organisms to levels that result in harmful concentrations in edible portions of fish, shellfish, other aquatic life, or wildlife that might consume aquatic life.

6. The discharge shall not result in benthic deposits that have a detrimental impact on the benthic community. The discharge shall not result in oil and grease, color, slicks, odors, or surface floating solids that would impair any existing or designated uses in the receiving water.

7. The discharge shall not result in an exceedance of the naturally occurring turbidity in the receiving water by more than 10 NTUs.

8. 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).

C. SPECIAL CONDITIONS

1. pH Modification – State Certification Condition

   The pH range may be modified if the Permittee satisfies conditions set forth in the State's Certification detailed in Part I.E.4 below. Upon notification of an approval by the State, EPA will review and, if acceptable, will submit written notice to the Permittee of the permit change. The modified pH range will not be in effect until the Permittee receives written notice from EPA.

2. WET Testing Reduction Request

   The Permittee may request a reduction in toxicity testing requirements after submitting a minimum of eight consecutive WET testing results, all of which must be valid tests and demonstrate compliance with the WET permit limitations. Until written notice is received from EPA indicating that the WET testing requirements have been changed, the Permittee is required to continue the WET testing specified in this permit.

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 and NHDES in accordance with Part I.D.3 and I.D.5 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), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, 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) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (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 currently in this permit.

4. PFAS Monitoring Reduction Request

After one year of monitoring, if all samples are non-detect for all four PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring. Until written notice is received from EPA indicating that the monitoring requirements have been changed, the Permittee is required to continue the monitoring specified in this Permit. *See* Reporting Requirements in Part I.D.3.

5. Additional Intake and Discharge Requirements

a. The Permittee shall not use Contoocook River water for non-contact cooling purposes except when the cooling water is used in a manufacturing process as process water either before or after it is used for cooling.
b. The Permittee shall notify EPA and NHDES prior to circumventing one or more of the treatment lagoons.
c. The Permittee shall maintain a vinyl screen or similar method in the fourth (final) lagoon to prevent "short- circuiting" at all times.

d. The Permittee shall notify the regulatory agencies if any water withdrawal causes the Contoocook River to drop below the 7Q10 flow of 14.6 cubic feet per second (cfs).
e. The Permittee shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of solids, such as those which may be removed from the waste treatment operations and equipment cleaning. At no time shall these solids be discharged to the Contoocook River.
f. The Permittee shall neither utilize chlorophenolic containing biocides nor discharge pentachlorophenol or trichlorophenol. The Permittee shall submit an annual certification that states chlorophenolic-containing biocides are not used at the Facility in accordance with 40 CFR §§ 430.114 and 430.124.
g. The Permittee shall notify the regulatory agencies if any Contoocook River water withdrawal is used for process water.

6. Aluminum Compliance Schedule

The effluent limit for total aluminum shall be subject to a schedule of compliance whereby the limit takes effect three years after the effective date of the permit. For the period starting on the effective date of this permit and ending three (3) years after the effective date, the Permittee shall report the monthly average and daily maximum aluminum concentration on the monthly DMR. After this initial three (3) year period, the Permittee shall comply with the monthly average total aluminum limits of 87 µg/L ("final aluminum effluent limit"). The Permittee shall submit an annual report due January 15th of the first three years of the permit that will detail its progress towards meeting the final aluminum effluent limit.

At a minimum, the Permittee shall include the following:

a. An evaluation of all potentially significant sources of aluminum in the sewer system and alternatives for minimizing these sources.

b. An evaluation of alternative modes of operation at the wastewater treatment facility in order to reduce the effluent levels of aluminum.

If during the three-year period after the effective date of the permit, New Hampshire adopts revised aluminum criteria but EPA has not yet approved them, then the Permittee may request a permit modification, pursuant to 40 CFR § 122.62(a)(3), for a further delay in the effective date of the final aluminum effluent limit. If new criteria are approved by EPA before the effective date of the final aluminum effluent limit, the Permittee may apply for a permit modification, pursuant to 40 CFR § 122.62(a)(3), to revise the time to meet the final aluminum effluent limit and/or for revisions to the permit based on whether there is reasonable potential for the Facility's aluminum discharge to cause or contribute to a violation of the newly approved aluminum criteria. The final aluminum effluent limit of 87 µg/L may be modified prior to the end of the three-year compliance

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) BMP/SWPPP reports and certifications, if required;
      (4) Request to discharge new chemicals or additives;
      (5) Request for pH Effluent Limitation Adjustment;
      (6) Request for change in WET testing or discontinuation of per- and polyfluoroalkyl substances (PFAS) sampling requirements;
      (7) Report on unacceptable dilution water/request for alternative dilution water for WET testing;
      (8) River water withdrawal used for process water;
      (9) Water withdrawal causing river to drop below the 7Q10 notification;
      (10) Annual chlorophenolic-containing biocides certification; and
      (11) Circumventing the treatment lagoons.

   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, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

   b. This information shall be submitted to EPA 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 through I.D.6 shall also be submitted to the New Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following 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 which require reporting within 24 hours (e.g., Part II.B.4.c. (2), Part II.B.5.c. (3), and Part II.D.1.e.).

b. Verbal reports and verbal notifications shall be made to EPA's Enforcement and Compliance Assurance Division at:

617-918-1510

c. Verbal reports and verbal notifications shall also be made to the State's Regional NPDES inspector at:

603-271-2985

E. STATE 401 CERTIFICATION CONDITIONS

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

2. The Permittee shall not at any time, either alone or in conjunction with any person or persons, cause directly or indirectly the discharge of waste into the said receiving water unless it has been treated in such a manner as will not lower the legislated water quality classification or interfere with the uses assigned to said water by the New Hampshire Legislature (RSA 485-A:12).

3. This NPDES Discharge Permit is issued by EPA under Federal law. Upon final issuance by EPA, the NHDES–WD may adopt this Permit, including all terms and conditions, as a State Permit pursuant to RSA 485-A:13. Each Agency shall have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

4. The pH range of 6.5 to 8.5 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.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL
USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

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

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

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

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

2. Test Variability (Test Sensitivity)

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

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

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

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

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

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

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

(1) Criminal Penalties

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

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

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

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

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

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

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

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

d. *Prohibition of bypass.*

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

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

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

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

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

5. Upset

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

improper operation.

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

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

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

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

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

e. *Twenty-four hour reporting.*

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

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

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

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

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

Agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Municipality

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Upset see B.5.a. above.

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

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

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

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

2. Commonly Used Abbreviations

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

kg/day	Kilograms per day
lbs/day	Pounds per day
mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH3-N	Ammonia nitrogen as nitrogen
NO3-N	Nitrate as nitrogen
NO2-N	Nitrite as nitrogen
NO3-NO2	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: NH0000230

PUBLIC NOTICE START AND END DATES: July 22, 2021 – August 20, 2021

NAME AND MAILING ADDRESS OF APPLICANT:

Monadnock Paper Mills, Inc
117 Antrim Road
Bennington, New Hampshire 03442

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Monadnock Paper Mills, Inc
117 Antrim Road
Bennington, New Hampshire 03442

RECEIVING WATER AND CLASSIFICATION:

Contoocook River (Hydrologic Code: 01070003)
Merrimack River Watershed
Class B

SIC CODE: 2621 (Paper Mills)

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1.0 Proposed Action

Monadnock Paper Mills, Inc (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Monadnock Paper Mill (the Facility) into the Contoocook River.

The permit currently in effect was issued on September 18, 2015 with an effective date of December 1, 2015 and expired on November 30, 2020 (2015 Permit). The Permittee filed an application for permit reissuance with EPA dated June 2, 2020, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on July 21, 2020 the Facility's 2015 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d).

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 the New Hampshire Department of Environmental Services (NHDES) to "consider" a federal NPDES permit to be a State surface water discharge permit. As such, all the terms and conditions of the permit may, therefore, be incorporated into and constitute a discharge permit issued by NHDES.

2.0 Statutory and Regulatory Authority

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

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301 and 304(b); 40 CFR §§ 122, 125, and 131.

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402 to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 CFR § 125 Subpart A.

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates New Source Performance Standards (NSPS) under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29. Section 402(p) of the CWA, 33 U.S.C. § 1342(p) requires stormwater discharges associated with industrial activity to be authorized by a NPDES permit. *See also* 40 CFR § 122.26(a)(1)(ii).

In general, ELGs for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989. *See* 40 CFR § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 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 §§ 131.10-12. 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 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.

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to 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 basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

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

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

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

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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

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

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

2.2.4 Reasonable Potential

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

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

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate the State WQSs, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to final permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

2.3 Effluent Flow Requirements

Generally, EPA uses effluent flow 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 EPA's reasonable potential

and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should the effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced and the calculated effluent limitations 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 reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on effluent flow 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). A condition on the discharge designed to ensure the validity of EPA's WQBELs and reasonable potential calculations that account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§402 and 301 and the implementing regulations, as WQBELs are designed to assure compliance with applicable water quality regulations, including antidegradation requirements. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, the effluent flow limit is a permit condition that relates to the Permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[2] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or
- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high 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] Fed. Reg. 49,001 (Aug. 19, 2014).
[3] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), 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).

2.4.2 Reporting Requirements

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

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[4]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit such as for providing written notifications required under the Part II Standard Conditions.

2.5 Standard Conditions

The Standard Conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include less stringent limitations or conditions than those contained in a previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(*l*). Anti-backsliding provisions apply to effluent limits based on technology, water quality, and/or State certification requirements.

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

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

Monadnock Paper Mills, Inc, is a non-integrated paper mill and therefore does not produce its own pulp but instead sources pulp from outside retailers. The Facility produces a variety of base

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

and coated papers from purchased pulp including technical/specialty papers, premium printing and packaging papers for a number of different vendors. The Facility manufactures over 200 distinct paper grades through operation of two paper machines. The Facility also operates a two-paper coating machine for production of specialty products. The location of the Facility can be seen in Figure 1.

The Facility produces paper products for four distinct product lines that use similar paper production mechanisms and generate similar wastewaters. Products are shipped offsite after paper production and all wastewater produced through the paper making process is transported to the wastewater treatment system before discharging through Outfall 001 to the Contoocook River.

The Facility consists of the main paper mill manufacturing building, the river water intake for process water withdrawals, a water wheel tailrace where water from power generation is returned to the Contoocook River, and the wastewater treatment system. The wastewater treatment system consists of a wet well, clarifier, on site sludge storage, and a series of four aeration lagoons. A site plan outlining these areas is shown in Figure 2.

3.1.1 Effluent Limitation Guidelines

EPA has promulgated technology based ELGs for the Pulp, Paper and Paperboard industry (40 CFR Part 430). For this industry the ELGs are divided into 12 different subparts based on the process used and the products made. Based on the most recent production information provided in the Permittee's 2020 application, the applicable Subparts for the Facility are Subpart K (Fine and Lightweight Papers from Purchased Pulp) and Subpart L (Tissue, Filter, Non-Woven and Paperboard from Purchased Pulp). While both subparts are applicable, the Permittee has indicated they use about 20% of their total production to produce papers qualifying under Subpart K and 80% for papers under Subpart L. In addition, the Permittee has indicated that they use over 4% cotton fiber and so are categorized as a cotton fiber furnish mill under Subpart K and also qualify under the paperboard subdivision in Subpart L. The following tables show applicable BPT under these subparts as defined in 40 CFR §§ 430.112 and 430.122.

Table 1. Subpart K BPT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp – cotton fiber furnish subdivision

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Daily Maximum	Monthly Average	
BOD5	17.4	9.1	5.1
TSS	24.3	13.1	7.2
pH	Within the range of 5.0 to 9.0 at all times		

Table 2. Subpart L BPT effluent limitations for non-integrated mills where paperboard is produced from purchased pulp

Pollutant or pollutant property	Kg/kkg (or pounds per 1,000 lb) of product		
	Continuous dischargers		Non-continuous dischargers (annual average)
	Daily Maximum	Monthly Average	
BOD5	6.5	3.6	2.0
TSS	5.8	2.8	1.6
pH	Within the range of 5.0 to 9.0 at all times		

As defined in 40 CFR §§ 430.113 and 430.123, BCT for these subparts is equivalent to BPT. In addition to conventional pollutants, facilities in these subparts that use chlorophenolic-containing biocides are subject to BAT effluent limitations or must certify that they are not using such biocides. The following BAT effluent limitations apply to this subcategory:

Table 3. Subpart K BAT effluent limitations for non-integrated mills where fine paper is produced from purchased pulp – cotton fiber furnish subdivision

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0051	(0.029)(42.3)/y
Trichlorophenol	0.0018	(0.010)(42.3)/y

Note: y = wastewater discharged in thousand gallons per ton of product

Table 4. Subpart L BAT effluent limitations for non-integrated mills where paperboard is produced from purchased pulp

Pollutant or pollutant property	Maximum for any 1 day	
	Kg/kkg (or pounds per 1,000 lb) of product	Milligrams/liter
Pentachlorophenol	0.0016	(0.029)(12.9)/y
Trichlorophenol	0.00054	(0.010)(12.9)/y

Note: y = wastewater discharged in thousand gallons per ton of product

The 2015 Permit and Draft Permit require the Permittee to annually certify that they do not use these chlorophenolic-containing biocides.

An extended discussion of these ELGs is provided below in the respective effluent limitations and special conditions sections in Section 5.

In addition, 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. The NPDES regulations in 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1) 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 class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

3.1.2 Measure of Production

In accordance with 40 CFR § 122.45(b)(2), EPA based the calculation of effluent limitations applicable under the ELGs for BPT in 40 CFR §§ 430.12 and 430.122 upon a reasonable measure of actual production of the Facility. EPA determined that the measure of production appropriate for this Facility is the average pounds of product produced per day. The Permittee indicated the average measure of production on their re-application for NPDES coverage. The permittee noted an average production in the range of 105 to 110 tons/day. The 110 tons/day average measure of production has been used for the evaluation of applicable effluent limits; however, as discussed below in the BOD5 and TSS subsections, no new production-based effluent limitations have been established.

3.2 Location and Type of Discharge

3.2.1 Outfall 001

Outfall 001 is located at Latitude 43° 00’ 40.71”, Longitude -71° 55’ 35.27” at the northern end of the aeration lagoons. Water flows from Outfall 001 northward into the Contoocook River. The discharge from Outfall 001 consists of treated wastewater including:

- Process water from paper manufacturing;
- Recycled non-contact cooling water overflow;
- Mechanical pump seal water;
- Sand filter backwash water;
- Boiler blowdown;
- Tank and machine wash water;
- Stormwater;
- Research and development laboratory wastewater; and
- Neutralized groundwater well rehabilitation wastewater.

Discharges of wastewater from Outfall 001 are limited to those necessary for regular operation, which may include routine maintenance, repairs, testing or construction.

There is also a process testing laboratory, where primarily pH and turbidity tests are performed, but the sinks in this area are directed to the sanitary sewer system.

The majority of the wastewater generated at the Facility consists of treated filter backwash water. Generally, two rapid filter backwashes are conducted each day. Each of the six filters operate for approximately 72 hours before backwashing is performed. Each backwash episode requires about 135,000 gallons of filtered water, on average. Filtered water, rather than finished water, is typically used to backwash filters. The Facility also conducts periodic maintenance activities which may include cleaning and flushing of filters and other Facility appurtenances or other testing and maintenance, including repairs and construction.

All the wastewater streams, except for neutralized groundwater well rehabilitation wastewater, flow past two bar racks into a 13,000-gallon wet well (i.e., sump) which also receives stormwater unimpacted by industrial activity from four of twenty-eight roof drains. All other stormwater generated on site is covered by the Facility's Multi-Sector General Permit (MSGP Permit ID NHR05BU27). If necessary, the wastewater is neutralized with sodium hydroxide. The wastewater is then pumped from the wet well to a clarifier. During transfer of the wastewater from the wet well to the clarifier, two polymers (a cationic coagulant and an anionic coagulant) are added to enhance the settling of suspended short paper fibers. After settling, the short paper fibers are pumped to a dewatering press. The filtrate from the press is returned to the wastewater treatment system via the wet well, and the solids are recycled offsite. After treatment in the clarifier, the wastewater sequentially flows through four lagoons, the middle two of which are aerated for secondary treatment. Bacteria and nutrient rich packing media are only added to the lagoon treatment system during the spring and summer months. Sludge is continuously dredged from the lagoons during the day using a sediment control system called a "sludge sled."[5] The sludge is directed back to the primary treatment system to be removed in the clarifier. After leaving the lagoons, the treated wastewater discharges to the Contoocook River through Outfall 001.

In addition, the Facility is capable of circumventing up to two of the treatment lagoons. Therefore, the Draft Permit includes a provision that requires the Permittee to notify EPA and NHDES prior to any such circumvention. Furthermore, a vinyl screen is set up in the fourth (final) lagoon to prevent "short- circuiting"[6]. The Draft Permit requires that this system is maintained and that the Permittee notify EPA if short-circuiting occurs. See Draft Permit Part I.C.5.

The Mill's process water is predominately obtained from its one gravel-packed groundwater well, but during emergencies it can also be taken from the Contoocook River [7] Each year, Monadnock Paper Mill rehabilitates the groundwater well. The rehabilitation, or redevelopment, involves chemically treating the well with a series of three different solutions. The process takes approximately seven days to complete. The wastewater generated from this process, which formerly discharged through a separate outfall labelled Outfall 002, is now directed to the treatment lagoons and discharged along with the other process wastewater through Outfall 001.

The first stage of the groundwater well rehabilitation involves adding a chemical mixture of hydrochloric acid and QC-21 (an acidic Layne Christensen priority solution). This mixture is used to break down well screen clogging mineral deposits (iron and manganese). The mixture is

[5] Monadnock Saves $1.5 Million with 'Sludge Sled', https://www.environmentalleader.com/2014/03/monadnock-saves-1-5-million-with-sludge-sled/

[6] "Short-circuiting" can happen when wastewater enters the lagoon and travels in a straight path to the outfall location. In this configuration, residence time is much reduced and the lagoon consists of areas where there is no movement of wastewater (i.e., dead space(s)).

[7] If the groundwater well is not operating for an extended period of time, Monadnock could use river water as process water. This has not been done for the past 7-8 years and is unlikely to occur in the future because the lower quality river water is unsuitable for the production of certain grades of paper. Furthermore, town water could also be used for process water. The Draft Permit requires Monadnock Paper Mills to inform the regulatory agencies if any Contoocook River water withdrawal is used for process water.

injected into the well where the solution mixes with the well clogging mineral deposits for 6 to 12 hours. It is then mechanically surged and backwashed into and out of the well screen for 4 hours. The resulting wastewater is pumped into a portable sedimentation/neutralization tank that is set up specifically for this process. Hydrated lime or light soda ash is added to neutralize any remaining acid and the wastewater is then transferred to the first lagoon.

The second treatment step, which is optional, injects sodium hexametaphosphate into the well. Sodium hexametaphosphate is a sequestering agent, which facilitates the removal of fine sands, silt and clay from the subsurface media adjacent to the well screen. The solution is pumped to the previously mentioned sedimentation/neutralization tank. Sodium hexametaphosphate does not require any special neutralization and therefore is routed to the first lagoon.

The final treatment consists of injecting chlorine (sodium or calcium hypochlorite) in the well to inhibit biological growth. The solution is allowed to react in the well for 6 to 12 hours. It is then mechanically surged and backwashed into and out of the well screen for 4 hours. The solution is then pumped into the sedimentation/neutralization tank where residual chlorine is neutralized using sodium metabisulfite. The waste product is again transferred to the first treatment lagoon.

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 2016 to December 2020, is provided in Appendix A of this Fact Sheet.

3.2.2 Fire Pump Testing

Contoocook River water (or town water) is used in the Mill's fire suppression system piping. Contrary to previous permitting actions, it was determined in the 2015 Permit that the discharge of fire pump testing water is not covered by the Facility's MSGP as an "allowable non-stormwater discharge." The Mill's insurance company requires periodic testing of the fire suppression system to ensure the pump can produce and sustain the required flow. A weekly test involves drawing Contoocook River water from the penstock that leads to the Mill's water wheel, circulating that water through the fire suppression piping and then discharging it back into the river at the Mill's water wheel tailrace. The weekly test uses an average of 1000 gallons per minute (gpm); with a maximum water use of 1,800 gpm and takes approximately 10 minutes. The fire pump has sealed pillow block bearings, which are set about 4" from the pump. The gap is filled with synthetic packing to prevent water from contacting the bearings when the pump is turned on. The setup of this pump precludes the discharge of any lubricants with the fire pump water. Since river water is simply cycled through the fire suppression piping, with no chemicals or solutions added, EPA considers that this discharge does not qualify as a discharge of pollutants under the CWA and therefore does not require a NPDES permit.[8] The annual fire pump test required by the facility's insurance company usually takes place during May. Flow rate and pressure is checked by running river water through the system but unlike the weekly test

[8] Los Angeles County Flood Control District v. Natural Resources Defense Council, Inc., et al., certiorari to the United States Court of Appeals for the Ninth Circuit, No. 11-460, January 8, 2013 at http://caselaw.lp.findlaw.com/scripts/getcase.pl?court=US&vol=000&invol=11-460

water that is discharged back to the river, the annual test water is directed to the lawn adjacent to the building.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Contoocook River flows for 71 miles from Poole Pond in Rindge, New Hampshire, north to Penacook, where it empties into the Merrimack River. Encompassing a drainage basin of 766 square miles. The segment of the Contoocook River that receives the Facility's discharge, NHRIV700030108-15, begins just downstream of the Antrim Wastewater Treatment Facility and ends at the Monadnock Paper Mill Facility, a distance of 2.23 miles.

The Contoocook River is classified as a Class B water by the State of New Hampshire. According to New Hampshire's WQS (RSA 485-A:8):

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

The following designated uses are assigned to Class B waters: fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies. The status of each designated use is presented in Table 5.

Table 5: Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Severe Impairment
Aesthetics	Not Assessed
Primary Contact Recreation	Support
Secondary Contact Recreation	Support
Fish Consumption	Poor Impairment

Segment NHRIV700030108-15 of the Contoocook River is on the New Hampshire 2018 303(d) list of impaired waters.[9] This segment has been identified as violating water quality standards for Aquatic Life (Dissolved Oxygen and pH) and requires a TMDL. A fish consumption advisory has been issued for this water segment, with the major pollutant of concern being mercury in fish tissue. The source of the impairment for this segment is listed as Industrial and Municipal Point Source Discharges.

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 B 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.[10] 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, permit limits for all human health criteria for carcinogens shall be developed based on the long-term harmonic mean flow, which is the number of daily flow measurements divided by the sum of the reciprocals of the daily flows. Permit limits for all aquatic life criteria and human health criteria for non-carcinogens shall be based on the 7Q10 flow.

New Hampshire Department of Environmental Services (NHDES) calculated the 7Q10 flow for the Contoocook River based on data from the United States Geological Survey (USGS) low-flow frequency statistics for the nearest USGS gauging station to the Facility along the Contoocook River (station number 01082000 at Peterborough, NH[11]) for an 18-year period of record, and an empirical equation developed by Dingman.[12] The resulting 7Q10 value determined by NHDES using the Dingman Equation was 14.6 cfs (9.43 MGD).

Using the above-calculated 7Q10 (Q_s), the dilution factor (DF) was calculated using the permitted daily maximum flow ($Q_{d)}$ as follows:

$$DF = 0.9 * Q_S / Q_D$$

Where:

Q_S = 7Q10 flow of Contoocook River just downstream of outfall=9.47 MGD

[9] Available at https://www.epa.gov/tmdl/new-hampshires-2018-303d-list-report-and-related-documents.
[10] EPA Permit Writer's Manual, Section 6.2.4
[11] USGS StreamStats National Data Collection Station Report for Station 01082000: http://streamstatsags.cr.usgs.gov/gagepages/html/01082000.htm
[12] 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.

Q_D = design flow of Monadnock Paper Mill
For acute criteria, the daily maximum flow limitation was used.
For chronic criteria, the monthly average flow limitation was used.
0.9 = factor to reserve 10% of the receiving water assimilative capacity

Therefore:

DF_{acute} = 0.9 * 9.43 / 1.3 = **6.53**
$DF_{chronic}$ = 0.9 * 9.43 / 1.0 = **8.49**

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

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which 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 and B. EPA's Reasonable Potential Analysis is included in Appendix C and results are discussed in the applicable sections below.

5.1.1 Effluent Flow

From April 1, 2016 through March 31, 2021 monthly average effluent flow has ranged from 0.029 MGD to 0.45 MGD and daily maximum effluent flow has ranged from 0.39 MGD to 0.81 MGD (Appendix A). The Facility's 2015 Permit includes a maximum daily flow limit of 1.3 MGD and an average monthly flow limit of 1 MGD. Under normal operating conditions, and as indicated by monitoring data and information provided by the Permittee, the flow limitations are consistently able to be met. Therefore, the Draft Permit maintains current effluent limitation for average monthly and maximum daily flow as well as continuous monitoring for flow using a recorder 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. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

The 2015 Permit continued the established pH range of 6.5 to 8.0 S.U., based on State WQS at RSA 485-A:8 II. In 2017, the Permittee requested an alternative pH limit range of 6.5 to 8.5 S.U. to NHDES. The request was supported by a study conducted by the Permittee of the effects of their Facility's pH when mixed with the Contoocook River, demonstrating that discharges at the alternative pH range would not cause violations of State WQSs. NHDES approved the increase in the upper pH range to 8.5 S.U., concluding that the naturally occurring receiving water pH is not significantly altered by the Permittee's discharge, and the 2015 Permit was modified in May 2017.

From April 2016 through March 2021, pH has ranged from 6.79 to 8.25 S.U. with no exceedances of the modified p H range (Appendix A). For this permit reissuance, NHDES has once again approved the alternate pH range. However, to maintain this pH range during the next permit issuance, the Permittee will have to conduct a new alternative pH limit study, ideally by the permit reapplication deadline. The Draft Permit continues the modified pH limit of 6.5 to 8.5 S.U. monitored daily by grab sample.

5.1.3 Biochemical Oxygen Demand and Total Suspended Solids

5.1.3.1 Pollutant Background

Biochemical oxygen demand (BOD), measures the amount of oxygen consumed by microorganisms in decomposing organic matter in water. BOD also measures the chemical oxidation of inorganic matter (i.e., the extraction of oxygen from water via chemical reaction). The rate of oxygen consumption in a waterbody is affected by several variables: temperature, pH, the presence of microorganisms, and the type of organic and inorganic material. BOD directly affects the amount of dissolved oxygen in rivers and streams. The greater the BOD, the more rapidly oxygen is depleted in the stream. Depletion of the in-stream oxygen levels cause aquatic organisms to become stressed, suffocate, and die.

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). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

5.1.3.2 Permitting History

The first NPDES permit containing 5-day BOD (BOD5) and TSS limits for the Monadnock Paper Mill was issued on July 13, 1973. The permit contained "tiered" technology-based limits; the first tier contained TBELs based on the ELGs and the second tier contained more stringent TBELs developed using EPA's BPJ authority. Subsequently, in the late 1970's the New Hampshire Water Supply and Pollution Control Commission (the predecessor of NHDES) composed a report assessing the BPJ-based limits with respect to WQSs and concluded that,

> [l]oad allocation results for Monadnock Paper Mills indicate that discharging at NPDES Operating Day Composite Quantity Limitations for BOD does not violate State Water Quality Standards. However, under low-flow conditions, this limit consumes a significant portion of the assimilative capacity of the Contoocook River. During winter months, when the Contoocook River experiences high flowrates and lower river water temperatures, the discharge from Monadnock Paper Mills of BOD loadings up to 500 pound per day would not jeopardize the integrity of the in-stream dissolved oxygen level for New Hampshire Class 'B' waters.[13]

During the subsequent permit cycles (1988, 1993, 2000, and 2007), the BOD5 and TSS levels were adjusted based on increased production levels and were divided into summer and winter limits to account for seasonal temperature differences. Due to the dissolved oxygen impairments in the Contoocook River outlined in NHDES's 2012 CWA Section 303(d) Surface Water Quality List, the 2015 Permit reassessed the report's finding that the TBELs meet WQSs. The conclusion from that reassessment was that loadings of both pollutants were significantly below the permitted TBELs and therefore more stringent limits were not required to meet WQSs.[14] Without new information such as a dissolved oxygen TMDL for the Contoocook River, EPA continues to hold that conclusion for this Draft Permit. Therefore, the following sections discuss the limits in relation to ELGs.

5.1.3.3 BOD5 Limitations

Table 6 shows the applicable BPT limits from the ELGs discussed in section 3.1.1 above as well as the 2015 Permit limits for BOD5. The current limits are significantly more stringent than what would be required from ELGs. From April 1, 2016 through March 31, 2021, the maximum BOD5 value from monitoring during both the winter and summer months was 212.34 lb/day, which is well below both the monthly average and daily maximum limits. Since the Facility has shown the ability to meet the current limits and in accordance with anti-backsliding regulations at 40 CFR 122.44(l), the Draft Permit has carried forward the monthly average and daily maximum BOD5 limits for Outfall 001, monitored weekly by grab sample.

Table 6. Comparison of Applicable BPT for BOD5 from ELGs and the 2015 Permit Limits

	Production Data (tons/day)	**Monthly Average**			**Daily Maximum**	
		ELG Factor (lb/1000 lbs)	Limit (lbs/day)		ELG Factor (lb/1000 lbs)	Limit (lbs/day)
Subpart K	22	9.1	400.4		17.4	765.6
Subpart L	88	3.6	633.6		6.5	1,144
Total	110	------	1,034		------	1909.6

[13] New Hampshire Water Supply and Pollution Control Commission, *Water Quality Study & Load Allocation Contoocook River, Bennington to West Henniker*, Staff Report No. 98. December 1978. See p. VII-1.
[14] An extended discussion of this permitting history is outlined in the 2015 Permit's fact sheet, section 5.1.2. Available at, https://www3.epa.gov/region1/npdes/permits/2015/finalnh0000230permit.pdf.

2015 Permit	Dec. 1 – Mar. 31	------	400		------	500
	Apr. 1 – Nov. 30	------	300		------	400

5.1.3.4 TSS Limitations

Table 7 shows the applicable BPT limits from the ELGs discussed in section 3.1.1 above as well as the 2015 Permit limits for TSS. The current limits are significantly more stringent than what would be required from ELGs. From April 1, 2016 through March 31, 2021, the maximum TSS value was 120.1 lb/day, which is well below both the monthly average and daily maximum limits. Since the Facility has shown the ability to meet the current limits and in accordance with anti-backsliding regulations at 40 CFR 122.44(l), the Draft Permit has carried forward the monthly average and daily maximum TSS limits for Outfall 001, monitored weekly by grab sample.

Table 7. Comparison of Applicable BPT for TSS from ELGs and the 2015 Permit Limits

	Production Data (tons/day)	**Monthly Average**		**Daily Maximum**	
		ELG Factor (lb/1000 lbs)	Limit	ELG Factor (lb/1000 lbs)	Limit
Subpart K	22	13.1	576.4	24.3	1,069
Subpart L	88	2.8	492.8	5.8	1,021
Total	110	------	1,069	------	2,090
2015 Permit		------	300	------	400

5.1.4 Nutrients

5.1.4.1 Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by: 1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter; 2) causing an unpleasant appearance and odor; 3) interfering with navigation and recreation; 4) reducing water clarity; 5) reducing the quality and availability of suitable habitat for aquatic life; 6) producing toxic cyanobacteria during certain algal blooms.

Wastewaters discharged from paper mills are generally nutrient deficient and treatment operators often have to add nutrients such as ammonia and phosphate to ensure adequate operation of biological treatment systems.[15] Depending on bacteria levels, the Permittee sometimes does add phosphoric acid to the aeration lagoons, particularly during the spring and summer months. In addition, sodium hexametaphosphate is used in the groundwater rehabilitation process, and so is discharged through the treatment system. Due to the presence of these phosphorus containing materials, the 2015 Permit included bi-annual monitoring for total phosphorus in the effluent and the upstream receiving water. The monitoring data from this requirement is summarized in Table 8 below and shows a clear increase in effluent TP relative to receiving water concentrations.

Table 8. Total Phosphorus (TP) Monitoring in the Effluent and Receiving Water

Monitoring Period End Date	Effluent TP (mg/L)	Receiving Water TP (mg/L)
6/30/2016	0.31	0.02
12/31/2016	0.39	< 0.01
6/30/2017	0.3	0.02
12/31/2017	0.22	0.01
6/30/2018	0.15	0.017
12/31/2018	0.31	0.019
6/30/2019	0.17	0.016
12/31/2019	0.22	0.02
6/30/2020	0.7	0.061
12/31/2020	0.59	0.054

The New Hampshire Surface Water Quality Regulations contain a narrative criterion, which limits phosphorus to the level that will not impair a water body's designated use. Specifically, Env-Wq 1703.14(b) and (c) state that,

> Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occurring.
>
> Existing discharges containing either phosphorus or nitrogen which encourage cultural eutrophication shall be treated to remove phosphorus or nitrogen to ensure attainment and maintenance of water quality standards.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information

[15] See p. 271 of EPA's October 1982 *Final Development Document for Effluent Limitations Guidelines and Standards for the Pulp, Paper, and Paperboard and the Builders' Paper and Board Mills Point Source Categories*, EPA 440/1-82/025.

reasonably available when developing the draft permit and does not generally delay permit issuance pending collection of new data or development of new models. This approach is also consistent with the requirement for NPDES permits to be revisited and reissued at regular intervals, with permit terms not to exceed five years.

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

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

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

The Gold Book recommended value of 0.1 mg/L is coterminous with the range of published, peer-review values presented in a more recent EPA technical guidance manual, Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002], Chapter 7 Table 4 (a simplified version of this table is shown as Table 9 below), which contains recommended threshold ambient concentrations (all more stringent than 0.1 mg/L) drawn from the scientific literature that are sufficiently stringent to control periphyton and plankton (two types of aquatic plant growth associated with eutrophication). This guidance indicates that

instream phosphorus concentrations between 0.01 mg/L and 0.09 mg/L will be sufficient to control periphyton growth and concentrations between 0.035 mg/L and 0.070 mg/L will be sufficient to control plankton.

Table 9. Recommended Nutrient Levels to Prevent Eutrophic Impairment [modified from EPA-822-B-00-002]

PERIPHYTON Maximum			
TP (µg/L)	**Chlorophyll a (µg/L)**	**Impairment Risk**	**Source**
38-90	100-200	nuisance growth	Dodds et al. 1997
75	200	eutrophy	Dodds et al. 1998
20	150	nuisance growth	Clark Fork River Tri-State Council, MT
20	---	*Cladophora* nuisance growth	Chetelat et al. 1999
10-20	---	*Cladophora* nuisance growth	Stevenson unpubl. Data
PERIPHYTON Maximum			
TP (µg/L)	**Chlorophyll a (µg/L)**	**Impairment Risk**	**Source**
42	8	eutrophy	Van Nieuwenhuyse and Jones 1996
70	15	chlorophyll action level	OAR 2000
35	8	eutrophy	OECD 1992 (for lakes)

The published, peer-reviewed phosphorus targets are thus 0.1 mg/L or below, irrespective of the methodological approach employed. In addition to opting for the less stringent of the available approaches (i.e., effects-based as opposed to reference-based), EPA has chosen to apply the upper end of the range of all available published nutrient thresholds. However, as the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. EPA is not aware of any site-specific factors relevant to the receiving water that would result in it being unusually more or less susceptible to phosphorus loading.

For this segment of the Contoocook River, the Gold Book value of 0.1 mg/L (100 µg/L) would apply downstream of the discharge; accounting for New Hampshire's 10% assimilative capacity requirement, the relevant value is 90 µg/L. EPA conducted a quantitative analysis to determine if effluent phosphorus concentrations have a reasonable potential to cause or contribute to exceedances of the State WQS for phosphorus, using the Gold Book value as a substitute for an official numeric criterion (Appendix C). Based on this analysis, EPA finds that discharges from the Facility do not have reasonable potential to cause or contribute to an excursion above the Gold Book value.

While EPA did not find reasonable potential during this permit reissuance, EPA finds monitoring for total phosphorus is still merited for several reasons. For one, the projected upper-bound of effluent concentrations calculated in the RPA from the Facility's historical monitoring data was

equal to 680 µg/L,[16] with a corresponding downstream value equal to 83 µg/L. Both these values exceed the median of the observed ambient sample concentrations (20 µg/L). Furthermore, the Contoocook River is impaired due to dissolved oxygen concentration and saturation, both of which could be caused by excess nutrient load.

The Draft Permit contains modified monitoring requirements from the Facility's existing permit. Monthly effluent monitoring for total phosphorus is required year round. In addition, the Facility shall monitor the receiving water upstream of the effluent outfall every month during the growing season (April 1 – October 31). Together, this data will allow EPA to evaluate whether the Facility has reasonable potential to violate the State narrative WQS during the most sensitive time frame. EPA has the authority to include such monitoring requirements under CWA §§ 308(a) and 402(a)(2) and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i), and 122.48.

5.1.4.2 Nitrogen

Nitrogen is an essential nutrient for plant growth. However, elevated concentrations of nitrogen can result in eutrophication, where nutrient concentrations lead to excessive plant and algal growth. Respiration and decomposition of plants and algae under eutrophic conditions reduce dissolved oxygen in the water and can create poor habitat for aquatic organisms. Total Nitrogen is the sum of Total Kjeldahl Nitrogen (TKN) (ammonium, organic and reduced nitrogen) and nitrate-nitrite. It is derived by individually monitoring for organic nitrogen compounds, ammonia, nitrate, and nitrite and adding the components together. The only Total Nitrogen data available for the Facility is a single sample from their re-application which reported a value of 3.67 mg/L.[17]

The Facility discharges to the Contoocook River, which is part of the Merrimack River watershed. The Merrimack River is a large and densely populated watershed including 40 POTW discharges in Massachusetts and New Hampshire. EPA estimates that approximately 15,000 lb/day of nitrogen is discharged by POTWs into the freshwater portion of the watershed and another 2,000 lb/day into the marine portion. Effluent data collected in the estuarine portions of the watershed indicate elevated levels of total nitrogen and chlorophyll-a.[18] EPA is concerned about the impacts that these nitrogen levels may be having on aquatic life in the estuary as the monitoring data shows levels outside the range typically found in healthy estuaries. However, more data is necessary to determine whether there is reasonable potential for nitrogen discharges from the Facility to cause or contribute to a violation of the Massachusetts narrative nutrient criteria in the Merrimack River estuary, particularly data that characterizes aquatic life designated uses that may be affected in this area so that the narrative criteria can be interpreted numerically. In the meantime, EPA finds that quantifying the load of total nitrogen from this

[16] This value represents the 95th percentile of phosphrous concentrations assuming the data fits a lognormal distribution based on the sample dataset.
[17] For context, the reference condition for Total Nitrogen from the Ecoregional Nutrient Criteria Report for Ecoregion VIII is 0.38 mg/L.
[18] For an extended discussion, see Section 5.1.9.1 and Appendix E of the Hillsborough Wastewater Control Facility Permit's fact sheet (NH0100111) and Section 5.1.9.1 of the Penacook Wastewater Treatment Facility Permit's fact sheet (NH0100331). Available at, https://www.epa.gov/npdes-permits/new-hampshire-final-individual-npdes-permits.

Facility and others in the Merrimack River watershed is an important first step to understanding the loading of nitrogen from point sources and their potential impact on the estuary.

The Draft Permit establishes a quarterly monitoring and reporting requirement for Total Nitrogen (sum of nitrate, nitrite and total Kjeldahl nitrogen) in the effluent with the intended purpose of data collection to allow for a more comprehensive analysis of whether the Facility is contributing to downstream impairments.

5.1.5 Total Ammonia Nitrogen

Ammonia (NH_3) is the unionized form of ammonia nitrogen. Elevated levels of ammonia can be toxic to aquatic life. Temperature and pH affect the toxicity of ammonia to aquatic life. The toxicity of ammonia increases as temperature increases and ammonia concentration and toxicity increase as pH increases. Ammonia can affect fish growth, gill condition, organ weights and hematocrit, and can result in excessive plant and algal growth, which can cause eutrophication. Ammonia can also affect dissolved oxygen through nitrification, in which oxygen is consumed as ammonia is oxidized. Low oxygen levels can then, in turn, increase ammonia by inhibiting nitrification. Total ammonia-nitrogen concentrations in surface waters tends to be lower during summer than during winter due to uptake by plants and decreased ammonia solubility at higher temperatures.

The 2015 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent and ambient ammonia concentrations on a quarterly basis as part of the Whole Effluent Toxicity (WET) testing. From April 1, 2016 through March 31, 2021, quarterly ammonia effluent samples ranged from 0.32 mg/L to 7.3 mg/L (Appendix A). Ambient data, taken upstream of the Facility outfall in the Contoocook River, is presented in Appendix B and found no detections of ammonia above laboratory minimum levels in the receiving water. EPA completed an analysis to determine if the Facility's discharge causes, or has a reasonable potential to cause, or contribute to an excursion above State WQSs using the criteria found in Env-Wq 1703.21 *Water Quality Criteria for Toxic Substances*.

The freshwater ammonia criteria in the NH WQS (see Env-Wq 1703.21, 1703.25 and 1703.26) are dependent on pH and temperature and the acute criterion is also dependent on whether Salmonids are present in the receiving water. To determine the applicable ammonia criteria, EPA assumed a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix B, which indicates that the median pH is 6.74 S.U. Additionally, salmonids (such as trout) are present in the Contoocook River. The acute and chronic criteria for ammonia and the associated reasonable potential analysis are shown in Appendix C.

The results of EPA's analysis indicate discharges of ammonia during both cold and warm weather months do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not include effluent limitations for ammonia. Regardless, quarterly monitoring continues to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below.

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.[19] Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction and behavior of an organism.

The Permittee has obtained quarterly 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 (Appendix A). The Permittee also obtained average monthly and daily maximum copper data collected twice monthly (Appendix A). For Outfall 001, from April 1, 2016 through March 31, 2021, total recoverable cadmium was not detected above laboratory minimum levels. However, total recoverable aluminum, copper, lead, nickel and zinc were detected in the discharge. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using the criteria found in Env-Wq 1703.21 *Water Quality Criteria for Toxic Substances*. The acute and chronic criteria for metals and the associated reasonable potential analysis are as shown in Appendix C.

The results of EPA's analysis indicate discharges of cadmium, lead, nickel, and zinc do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not include effluent limitations for these metals. Regardless, quarterly monitoring for these metals continues to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below.

However, the results of the analysis in Appendix C did indicate that discharges of aluminum cause, or have a reasonable potential to cause, or contribute to an excursion above WQS based on the chronic aquatic life criteria. As a result, the Draft Permit has included a monthly average effluent limitation. Since the median upstream receiving water aluminum sample concentration (90 µg/L) was higher than the chronic criterion (87 µg/L), the Contoocook River has no more assimilative capacity for aluminum and the resulting effluent limitation is set at the chronic criterion.

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

It should be noted that a similar conclusion was made that there was reasonable potential for aluminum discharges to cause or contribute to an excursion above WQS in the 2015 Draft Permit. However, during the public notice period, the Permittee raised a comment on the appropriateness of the aluminum criteria. In NH WQS, aluminum criteria are expressed as acid-soluble values, see Env-Wq 1703.22(s). As part of the 2015 Permit's public notice, the Permittee submitted additional data on the fraction of acid-soluble to total recoverable aluminum in the Contoocook River.[20] Using the median value from that dataset (0.62), representing the fraction of acid-soluble to total recoverable aluminum, EPA calculated corresponding total recoverable Facility-specific criteria for aluminum by taking the acid-soluble criteria and dividing by 0.62 and multiplying by 0.9 to allow for assimilative capacity as required under Env-Wq 1705.01. The corresponding total recoverable aluminum acute and chronic criteria are 1,090 and 126 µg/L, respectively. Using these modified criteria in 2015, EPA found that there was no longer reasonable potential and removed the limit in the Final 2015 Permit. EPA and NHDES discussed continuing to use these modified criteria for this Draft Permit. In correspondence sent to EPA on July 13 and 15, 2021, NHDES informed EPA that these criteria could no longer be used because (1) there was an insufficient amount of data used previously and (2) the data was not recent enough. Therefore, for this analysis, aluminum criteria will assume a 1:1 ratio of acid soluble to total aluminum.

The Draft Permit includes a 3-year compliance schedule to meet the 87 µg/L aluminum limit in anticipation of an expected revision to the New Hampshire freshwater aluminum criteria. EPA finalized new aluminum criteria recommendations in December 2018 which are dependent on pH, dissolved organic carbon and hardness and which may be higher than New Hampshire's current criteria. Although New Hampshire is considering adopting EPA's 2018 aluminum criteria recommendations as state water quality criteria, it has not yet done so. EPA has therefore determined that it is appropriate to include a schedule of compliance, pursuant to 40 CFR §122.47, in the Draft Permit which provides the permittee with a 3-year period to achieve compliance with the final aluminum effluent limit. Additionally, the Permittee may apply for a permit modification to allow additional time for compliance if New Hampshire has adopted new aluminum criteria but has not yet submitted the criteria to EPA for review or EPA has not yet acted on the new criteria. If new aluminum criteria are adopted by New Hampshire and approved by EPA, and before the final aluminum effluent limit goes into effect, the Permittee may apply for a permit modification to amend the permit based on the new criteria. If warranted by the new criteria and a reasonable potential analysis, EPA may relax or remove the effluent limit to the extent consistent with anti-degradation requirements. Such relaxation or removal would not trigger anti-backsliding requirements as those requirements do not apply to effluent limits which have yet to take effect pursuant to a schedule of compliance. See American Iron and Steel Institute v. EPA, 115 F.3d 979, 993 n.6 (D.C. Cir. 1997) ("EPA interprets §402 to allow later relaxation of [an effluent limit] so long as the limit has yet to become effective."]. In anticipation of New Hampshire's use of the new aluminum criteria, receiving water dissolved organic carbon monitoring is required quarterly so that EPA has sufficient data to calculate corresponding criteria values.

[20] See Comment 2 and EPA's Response in the 2015 Response to Comments document available at https://www3.epa.gov/region1/npdes/permits/2015/finalnh0000230permit.pdf.

Since copper has an existing WQBEL, EPA notes that the reasonable potential 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 copper continues to be discharged from the Facility, EPA has determined that continuation of the limit is necessary pursuant to antibacksliding requirements. 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 copper, the mass balance calculation in Appendix C 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. EPA has found that the existing copper limit continues to be protective of WQSs and a more stringent limit is not required. Based on the Permittee's compliance with the copper limit, monitoring has been reduced from monthly to quarterly. Quarterly monitoring can take place in conjunction with Whole Effluent Toxicity Testing which already requires copper monitoring.

5.1.7 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[21] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

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

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

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

[21] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/pfas/epas-pfas-action-plan.

as the challenged regulations. The statutory MCLs and AGQSs became effective on July 23, 2020.

On November 22, 2020, EPA issued an "*Interim Strategy for Per- and Polyfluoroalkyl Substances in Federally Issued National Pollutant Discharge Elimination System Permits*." This guidance memo sets out the EPA workgroup's recommendation for including phased-in monitoring and best management practices (as appropriate), when PFAS compounds are expected to be present in point source wastewater discharges. Facilities that have been identified as potential point sources of PFAS include:

- Platers/Metal Finishers
- Paper and Packaging Manufacturers
- Tanneries and Leather/Fabric/Carpet Treaters
- Manufacturers of parts with Polytetrafluroethlylene (PTFE) (i.e.teflon-type coatings and bearings)
- Landfill Leachate
- Centralized Waste Treatment Facilities
- Contaminated Sites
- Fire Fighting Training Facilities
- Airports

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the Facility conduct quarterly effluent sampling for PFAS chemicals, six months after appropriate, multi-lab validated test methods are made available by EPA to the public. This monitoring requirement includes the following PFAS chemicals:

Perfluorohexanesulfonic acid (PFHxS)
Perfluorononanoic acid (PFNA)
Perfluorooctanesulfonic acid (PFOS)
Perfluorooctanoic acid (PFOA)

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

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

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

Since an EPA method for sampling and analyzing PFAS in wastewater is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule that delays the effective date of this requirement until six months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website. For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. EPA will notify the Permittee when this method is available. This approach is consistent with 40 CFR § 122.44(i)(1)(iv)(B), which states that "[i]n the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters." After one year of monitoring, if all samples are non-detect for all PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring.

5.1.8 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 Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement 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))."

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}.

The 2015 Permit includes WET testing for chronic and acute effects to the Daphnid (*Ceriodaphnia dubia*) and the Fathead Minnow (*Pimephales promelas*) with a corresponding LC_{50} of ≥100% and C-NOEC of ≥ 10.4%. Chronic effects testing was required quarterly, while acute testing was required annually. From April 1, 2016 through March 31, 2021, there were no violations of the LC_{50} WQBEL for either species (Appendix A). For chronic effects, there was one violation of the C-NOEC WQBEL for the Daphnid a value less than 6.25% during the third quarter of 2018. The Permittee was not able to determine the cause of the violation. There were no violations of the C-NOEC WQBEL for the Fathead Minnow.

EPA notes that the reasonable potential 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 for WET. Given that the permit already contains WQBELs based on the prior analysis and toxic compounds such as metals continue to be discharged from the Facility, EPA has determined that there is still reasonable potential for the discharge to cause or contribute to an excursion of WQS. Therefore, the WQBELs 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).

EPA has found that the existing LC_{50} WQBEL continues to be protective of WQSs and a more stringent limit is not required, nor is one possible. Based on the Permittee's compliance with the limit and due to a WET test reduction request, EPA is eliminating the requirement to test for the less sensitive WET test species which has been determined to be the Fathead Minnow. Yearly acute effects testing continues to be required for the Daphnid.

For chronic effects and based on the Facility's updated dilution factor ($DF_{chronic}$ = 8.52), EPA finds that the C-NOEC WQBEL continues to be protective of WQSs and a more stringent limit is not required. Based on the sensitivity differences between the species to the Facility's effluent and the historical compliance with the C-NOEC for the Fathead Minnow, EPA is eliminating the requirement to test for the less sensitive test species. Quarterly chronic effects testing continues to be required for the Daphnid.

In accordance with 40 CFR § 122.44(d), the Draft Permit continues the effluent limits from the 2015 Permit. Toxicity testing must be performed in accordance with EPA Region 1's test procedures and protocols specified in **Attachment A,** *Freshwater Acute Toxicity Test Procedure and Protocol* (February 2011), **and Attachment B,** *Freshwater Chronic Toxicity Test Procedure and Protocol* (March 2013) of the Draft Permit.

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.

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 Site Specific Low Flow Condition

The Federal Energy Regulatory Commission (FERC) operating license for the three dams (Powder Mill, Monadnock, and Pierce) operated by Monadnock Paper Mills requires their combined discharge be maintained at… “a continuous minimum flow of 13 cfs or inflow to the developments, whichever is less.” The existing permit requires Monadnock Paper Mills to inform the regulatory agencies if any Contoocook River water withdrawal caused the river to drop below the 7Q10 flow of 16.5 cfs.

The Facility now exclusively uses only the Mills’ well water for its process water because the well water’s quality can be more readily controlled by the mill for manufacturing its specialty paper. However, the Facility maintains the ability to use river water during emergencies. Further, water is drawn for use in the facility’s fire suppression system. Therefore, the Draft Permit

includes the requirement to notify the regulatory agencies if any water withdrawal causes the river to drop below the 7Q10 flow of 16.5 cfs.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

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

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

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this segment of the Contoocook River. In this case, the Facility's outfall and action area does not overlap with protected species under the jurisdiction of NOAA Fisheries, including coastal waters where protected marine species are found, or with river segments where protected sturgeon are present. There are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Facility's discharge(s).[22] Therefore, ESA consultation with NOAA Fisheries is not required for this federal action.

For protected species under the jurisdiction of the USFWS, two listed threatened species, the northern long-eared bat (*Myotis septentrionalis*) and the small whorled pogonia (*Isotria medeoloides*), were identified as potentially occurring in the action area of the Facility's discharge(s)[23]. According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the Contoocook River and the Bennington, New Hampshire area

[22] See NOAA Fisheries at https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html
[23] See USFWS at https://ecos.fws.gov/ipac/

overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Monadnock Paper Mill NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated June 16, 2021, that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO).[24] The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Monadnock Paper Mill NPDES permitting action under ESA Section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS for this species.

The small whorled pogonia is a member of the orchid family and grows in older hardwood stands primarily, but sometimes in softwoods. It prefers acidic soils and often is found on slopes near small streams. Habitat loss from urban expansion is the primary cause of its threatened status. The action area of the proposed discharge from the Monadnock Paper Mill to the Contoocook River does not overlap with the habitat of the small whorled pogonia. This federal action will have no direct or indirect effects on this non-aquatic vegetation. Therefore, the proposed permit action is deemed to have no impact on this listed species and ESA consultation with USFWS is not required for this species.

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

No additional ESA consultation is required as a result of this permitting action. However, initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

6.2 Essential Fish Habitat

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

[24] USFWS Event Code: 05E1NE00-2021-E-11576, June 16, 2021.

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 Merrimack River and its tributaries, including the Contoocook River in the vicinity of Bennington, New Hampshire, are designated essential fish habitat (EFH) for Atlantic salmon (*Salmo salar*). According to the New Hampshire Fish and Game Department (NHFGD), stocking of salmon fry in the Contoocook is limited to the reach between the towns of Hillsborough and Henniker. Bennington is approximately eight miles upstream from Hillsborough, and NHFGD currently has no plans to stock this stretch of the Contoocook. EPA has determined that actions regulated by the Draft Permit may adversely affect this designated EFH. The Draft Permit has been conditioned in such a way as to be protective of EFH for the following reasons:

- This permit action is a reissuance of an existing NPDES permit (i.e., no new source of pollutants);
- The Facility withdraws water from the Contoocook River 1) for the facility's fire suppression system (once a week for 10 minutes, using 10,000 gallons of river water); and 2) in an emergency situation which precludes use of the well water. The Draft Permit prohibits the use of river water for non-contact cooling purposes. This limited amount of water withdrawal, conducted intermittently, minimizes the opportunity for the entrainment of any life stages of EFH species or prey and therefore minimizes any reduction in quality and/or quantity of EFH, either directly or indirectly;
- The Draft Permit is designed so that all discharges meet state water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combinations of pollutants in toxic amounts;
- The Draft Permit prohibits the use of chlorophenolic containing biocides; requires yearly certification that chlorophenolic-containing biocides are not used; and continues the requirement of prohibiting the discharge of pentachlorophenol or trichlorophenol;
- The Draft Permit contains the same limits for BOD5, TSS, pH, Total Copper, and Whole Effluent Toxicity as the current permit;
- The Draft Permit requires additional nutrient monitoring requirements to determine if the Facility is contributing to dissolved oxygen impairments through nutrient discharges;
- The Draft Permit requires that the vinyl screen set up in the fourth (final) lagoon to prevent "short- circuiting" is maintained; and
- The Draft Permit requires that the Permittee inform the regulatory agencies if any Contoocook River water withdrawal is used for process water and if any water withdrawal causes the river to drop below the 7Q10 flow.

EPA believes that the conditions and limitations contained in the Draft Permit adequately protects the 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:

Nathan Chien
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1649
Email: Chien.Nathan@epa.gov

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

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

8.0 Administrative Record

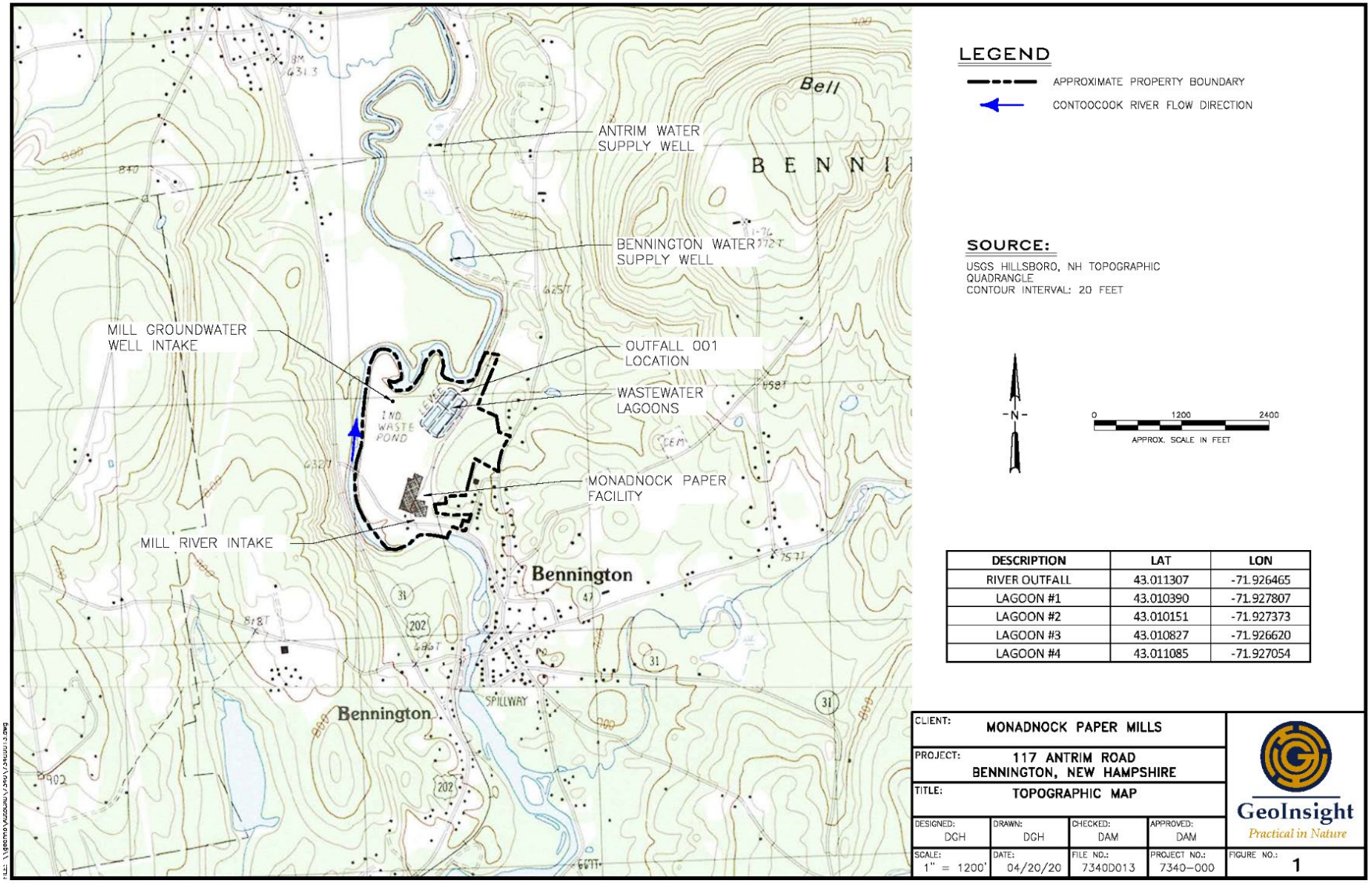
The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from Nathan Chien, EPA

Region 1, 5 Post Office Square, Suite-100 (06-1), Boston, MA 02109-3912, or via email to Chien.Nathan@epa.gov.

July 22, 2021

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

Figure 1: Location Map



DESCRIPTION	LAT	LON
RIVER OUTFALL	43.011307	-71.926465
LAGOON #1	43.010390	-71.927807
LAGOON #2	43.010151	-71.927373
LAGOON #3	43.010827	-71.926620
LAGOON #4	43.011085	-71.927054

CLIENT: MONADNOCK PAPER MILLS				
PROJECT: 117 ANTRIM ROAD BENNINGTON, NEW HAMPSHIRE				
TITLE: TOPOGRAPHIC MAP				
DESIGNED: DGH	DRAWN: DGH	CHECKED: DAM	APPROVED: DAM	GeoInsight Practical in Nature
SCALE: 1" = 1200'	DATE: 04/20/20	FILE NO.: 7340D013	PROJECT NO.: 7340-000	FIGURE NO.: 1

Figure 2: Site Plan

Figure 3: Schematic of Water Flow

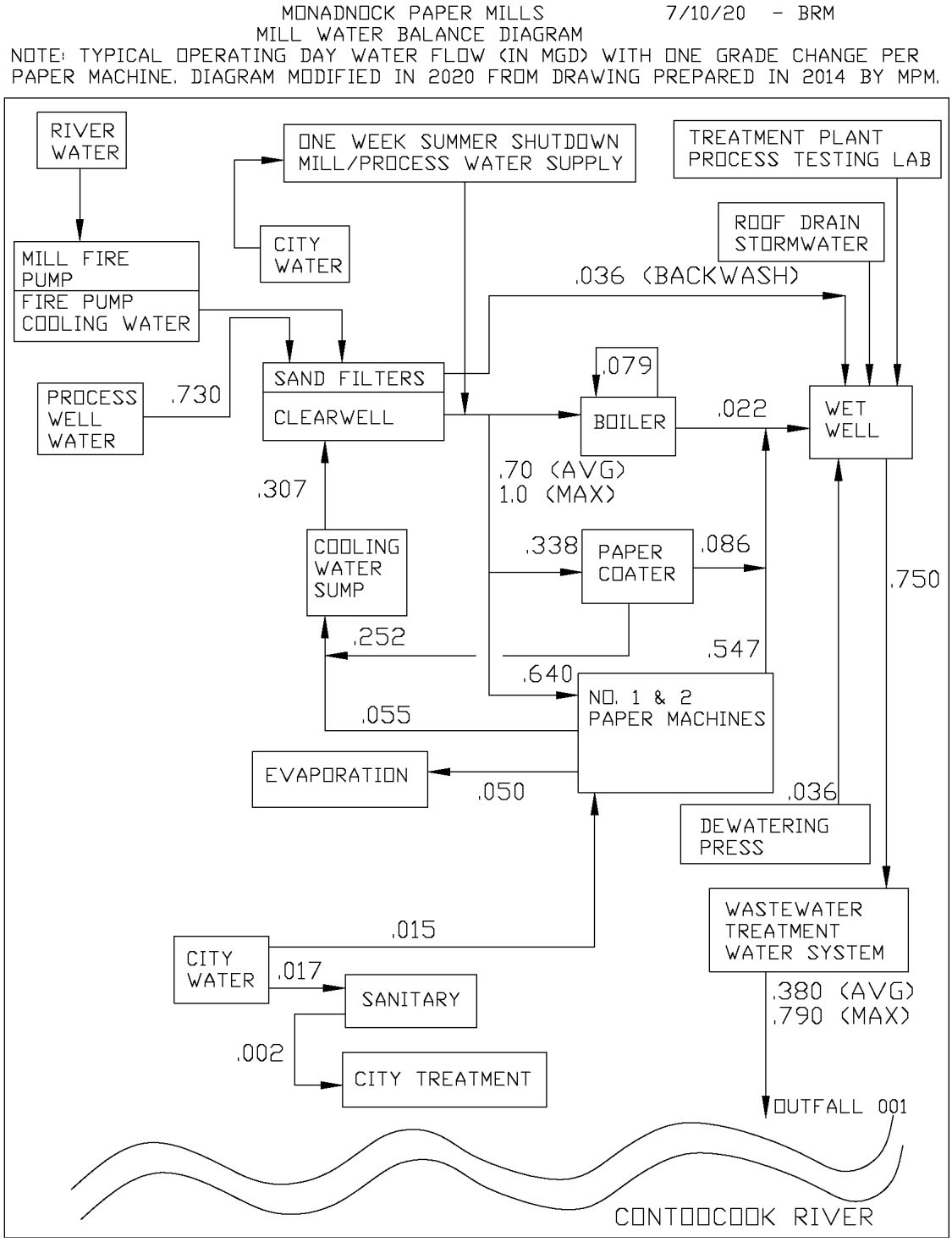
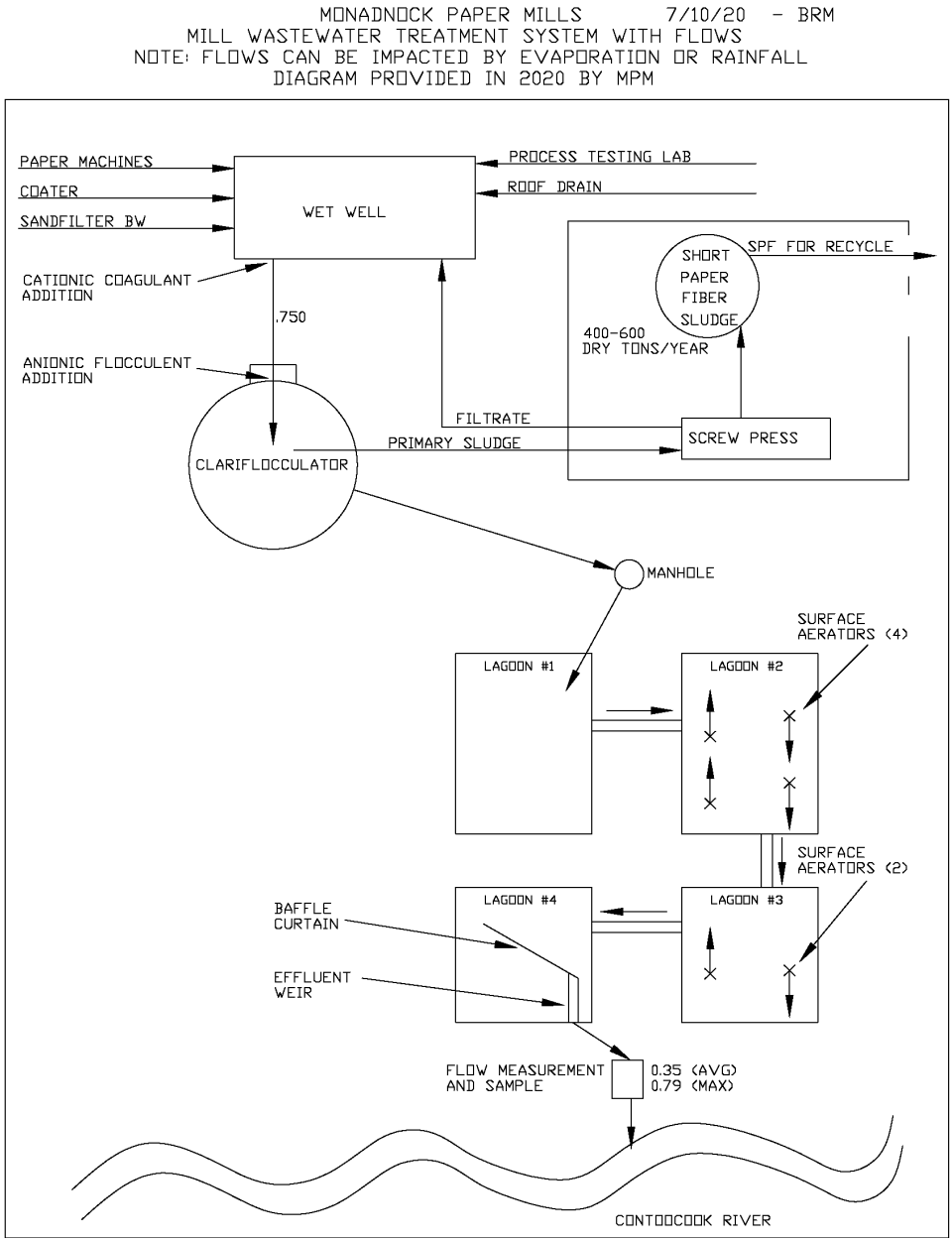


Figure 4: Schematic of Wastewater Treatment System



Appendix A: Discharge Monitoring Data

Monadnock Paper Mill Outfall Serial Number 001 Monthly Effluent Testing – Part 1								
Parameter	**Flow**	**Flow**	**BOD5**	**BOD5**	**BOD5**	**BOD5**	**TSS**	**TSS**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Daily Max**
Units	**MGD**	**MGD**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**
Effluent Limit	**1**	**1.3**	**300**	**400**	**400**	**500**	**300**	**400**
Minimum	**0.029**	**0.39**	**14.7**	**27.81**	**19.85**	**34.19**	**16.93**	**19.18**
Maximum	**0.45**	**0.81**	**71.77**	**127.89**	**137.61**	**212.34**	**73.64**	**120.1**
Median	**0.29**	**0.61**	**27.24**	**58.8**	**41.37**	**83.825**	**34.25**	**56.335**
No. of Violations	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Monitoring Period End Date								
4/30/2016	0.23	0.39	22.95		26		27.62	35.78
5/31/2016	0.32	0.64	33.44		46.54		60.21	98.25
6/30/2016	0.32	0.64	23.29		37.36		32.28	53.38
7/31/2016	0.25	0.65	29.54		42.78		33.75	58.71
8/31/2016	0.31	0.66	22.77		33.03		48.25	75.31
9/30/2016	0.25	0.49	25.95		40.03		32.39	40.03
10/31/2016	0.27	0.47	24.79		30.77		25.52	31.36
11/30/2016	0.25	0.54	14.7		19.85		27.23	37.03
12/31/2016	0.22	0.48		42.39		88.07	34.75	52.04
1/31/2017	0.25	0.39		62.45		81.73	46.18	64.22
2/28/2017	0.28	0.48		67.47		80.06	57.25	95.41
3/31/2017	0.3	0.47		27.81		34.19	29.12	56.71
4/30/2017	0.28	0.45	26.17		33.03		47.68	70.06

Monadnock Paper Mill **Outfall Serial Number 001** **Monthly Effluent Testing – Part 1**								
Parameter	**Flow**	**Flow**	**BOD5**	**BOD5**	**BOD5**	**BOD5**	**TSS**	**TSS**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Daily Max**
Units	**MGD**	**MGD**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**
5/31/2017	0.34	0.64	29.54		47.54		47.52	104.58
6/30/2017	0.36	0.46	20.32		23.02		16.93	19.18
7/31/2017	0.2	0.57	22.89		47.54		22.06	47.54
8/31/2017	0.32	0.62	22.22		31.02		26.89	51.71
9/30/2017	0.39	0.81	30.97		41.37		46.66	81.06
10/31/2017	0.28	0.59	26.77		39.36		26.5	34.44
11/30/2017	0.029	0.61	31		60.1		44.8	85.1
12/31/2017	0.25	0.61		54.22		98	42.77	74
1/31/2018	0.28	0.54		72.31		99.08	29.69	45.04
2/28/2018	0.35	0.6		83.73		100.08	62.65	90.07
3/31/2018	0.29	0.58		51.57		67.55	37.62	54.71
4/30/2018	0.28	0.6	44.54		70.06		61.42	120.1
5/31/2018	0.38	0.65	36.61		54.04		25.39	40.7
6/30/2018	0.36	0.63	34.01		47		25.33	31
7/31/2018	0.18	0.77	18.41		51.37		29.02	89.91
8/31/2018	0.45	0.69	30.97		52.29		32.49	42.78
9/30/2018	0.29	0.67	27.88		32		31.4	37
10/31/2018	0.24	0.55	20.14		27.52		20.91	36.7
11/30/2018	0.26	0.47	20.58		23.52		17.35	20.43
12/31/2018	0.23	0.59		37.3		59.05	24.23	44.29
1/31/2019	0.34	0.65		85.85		140.95	57.56	86.74
2/28/2019	0.36	0.62		87		123.6	61.6	98.3
3/31/2019	0.28	0.56		62.9		84	60.42	103
4/30/2019	0.36	0.66	71.77		137.61		51.04	78.81

Monadnock Paper Mill **Outfall Serial Number 001** **Monthly Effluent Testing – Part 1**								
Parameter	**Flow**	**Flow**	**BOD5**	**BOD5**	**BOD5**	**BOD5**	**TSS**	**TSS**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Daily Max**
Units	**MGD**	**MGD**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**	**lb/d**
5/31/2019	0.31	0.66	37.15		62.05		24.84	49.54
6/30/2019	0.41	0.69	46.02		83.82		31.69	50.29
7/31/2019	0.28	0.61	25.69		49.61		31.53	63.97
8/31/2019	0.33	0.65	31.74		41.37		40.93	56.88
9/30/2019	0.29	0.65	31		37.95		48.68	65.05
10/31/2019	0.42	0.73	51.06		85.23		60.88	72.39
11/30/2019	0.41	0.75	42.37		55.96		52.96	66.05
12/31/2019	0.32	0.66		48.73		78.81	33.19	68.3
1/31/2020	0.39	0.65		63.27		86.74	55.26	92.16
2/29/2020	0.35	0.65		51		70.47	35.54	48.79
3/31/2020	0.39	0.67		127.89		212.34	73.64	100.58
4/30/2020	0.33	0.64	38.68		58.71		59.31	114.42
5/31/2020	0.27	0.58	24.85		48.37		30.88	53.21
6/30/2020	0.31	0.59	29.48		39.78		37.93	49.21
7/31/2020	0.23	0.61	18.92		35.61		31.99	55.96
8/31/2020	0.23	0.43	19.6		22.18		38.76	46.29
9/30/2020	0.26	0.66	27.46		57.8		37.22	68.3
10/31/2020	0.3	0.61	27.02		39.36		33.11	63.97
11/30/2020	0.26	0.62	20.27		35.61		21.16	40.7
12/31/2020	0.24	0.56		32.68		66.64	26.97	54.88
1/31/2021	0.38	0.59		68.43		95.08	51.35	63.05
2/28/2021	0.32	0.57		55.15		66.55	39.39	47.54
3/31/2021	0.29	0.59		50.73		83.65	31.25	44.29

Monadnock Paper Mill Outfall Serial Number 001 Monthly Effluent Testing – Part 2					
Parameter	**pH**	**pH**	**pH**	**Copper**	**Copper**
	Minimum	**Maximum**	**Maximum**	**Monthly Avg**	**Daily Max**
Units	**SU**	**SU**	**SU**	**ug/L**	**ug/L**
Effluent Limit	**6.5**	**8**	**8.5**	**Report**	**14.5**
Minimum	**6.79**	**7.63**	**7.44**	**0.52**	**0.54**
Maximum	**7.7**	**8.15**	**8.25**	**2.05**	**2.7**
Median	**7.35**	**7.74**	**7.71**	**0.93**	**1.1**
No. of Violations	**0**	**1**	**0**	**N/A**	**0**
Monitoring Period End Date					
4/30/2016	7.49	7.85		1.1	1.2
5/31/2016	7.2	7.787		1.55	1.8
6/30/2016	7.21	7.8		0.9	1
7/31/2016	7.4	7.78		1.15	1.2
8/31/2016	7.41	7.68		0.85	0.9
9/30/2016	7.3	7.66		1.1	1.1
10/31/2016	7.09	7.74		1.35	1.8
11/30/2016	7.02	7.7		1.25	1.3
12/31/2016	6.86	7.7		1.35	1.6
1/31/2017	7.22	7.63		2.05	2.6
2/28/2017	7.49	7.73		0.6	0.6
3/31/2017	6.94	7.82		0.85	0.9
4/30/2017	6.98	**8.15**		0.9	1
5/31/2017	7.07		7.71	0.9	0.9

Monadnock Paper Mill **Outfall Serial Number 001** **Monthly Effluent Testing – Part 2**					
Parameter	**pH**	**pH**	**pH**	**Copper**	**Copper**
	Minimum	**Maximum**	**Maximum**	**Monthly Avg**	**Daily Max**
Units	**SU**	**SU**	**SU**	**ug/L**	**ug/L**
6/30/2017	7.4		7.61	1.3	2.1
7/31/2017	7.3		7.62	0.85	0.9
8/31/2017	7.47		7.67	0.8	1.1
9/30/2017	7.46		7.77	1.1	1.4
10/31/2017	7.45		7.7	0.85	0.9
11/30/2017	7.2		7.73	1.5	2.7
12/31/2017	7		7.77	0.95	1.2
1/31/2018	7.07		7.71	0.95	1.2
2/28/2018	7.5		7.68	0.65	0.8
3/31/2018	7.5		7.72	0.6	0.7
4/30/2018	6.79		8.05	0.8	0.9
5/31/2018	7.5		7.78	0.65	0.8
6/30/2018	7.5		7.77	0.8	1.1
7/31/2018	7.39		7.71	1.2	1.2
8/31/2018	7.35		7.57	1	1.1
9/30/2018	7.42		7.62	1.45	1.6
10/31/2018	7.42		7.8	0.8	0.8
11/30/2018	7.7		7.79	0.95	1
12/31/2018	7.68		7.83	1.2	1.5
1/31/2019	7.63		7.82	0.9	1.1
2/28/2019	7.42		7.81	1.4	2
3/31/2019	7.52		7.77	1.05	1.1
4/30/2019	7.04		7.88	0.95	1.2
5/31/2019	7.44		7.72	0.75	0.8

Monadnock Paper Mill **Outfall Serial Number 001** **Monthly Effluent Testing – Part 2**					
Parameter	**pH**	**pH**	**pH**	**Copper**	**Copper**
	Minimum	**Maximum**	**Maximum**	**Monthly Avg**	**Daily Max**
Units	**SU**	**SU**	**SU**	**ug/L**	**ug/L**
6/30/2019	7.1		7.76	0.9	1.2
7/31/2019	7.27		7.6	1.6	2.2
8/31/2019	7.35		7.56	1.22	1.7
9/30/2019	7.27		7.66	1	1
10/31/2019	7.01		7.44	1.05	1.5
11/30/2019	6.9		7.52	1.1	1.2
12/31/2019	7.27		7.52	0.76	0.8
1/31/2020	7.2		7.44	0.74	0.87
2/29/2020	7.3		7.62	0.56	0.61
3/31/2020	7.4		7.58	0.89	0.98
4/30/2020	7.3		7.85	0.71	0.77
5/31/2020	7.33		8.25	0.67	0.71
6/30/2020	7.31		7.82	0.81	0.86
7/31/2020	7.39		7.88	0.94	1.1
8/31/2020	7.3		7.6	0.92	0.93
9/30/2020	7.35		7.57	1.02	1.2
10/31/2020	7.44		7.7	1.23	1.6
11/30/2020	7.4		7.73	0.76	0.89
12/31/2020	7.44		7.8	0.96	0.97
1/31/2021	7.47		7.73	0.66	0.73
2/28/2021	7.39		7.55	0.63	0.76
3/31/2021	7.42		7.69	0.52	0.54

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Nutrient Monitoring	
Parameter	**Total Phosphorus**
	Daily Max
Units	**mg/L**
Effluent Limit	**Report**
Minimum	**0.15**
Maximum	**0.7**
Median	**0.305**
No. of Violations	**N/A**
Monitoring Period End Date	
6/30/2016	0.31
12/31/2016	0.39
6/30/2017	0.3
12/31/2017	0.22
6/30/2018	0.15
12/31/2018	0.31
6/30/2019	0.17
12/31/2019	0.22
6/30/2020	0.7
12/31/2020	0.59

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 1				
Parameter	**LC50 Acute Ceriodaphnia**	**LC50 Acute Pimephales**	**C-NOEC Chronic Ceriodaphnia**	**Noel Statre 7Day Chronic Pimephales**
	Monthly Avg Min	**Monthly Avg Min**	**Monthly Avg Min**	**Monthly Avg Min**
Units	**%**	**%**	**%**	**%**
Effluent Limit	**100**	**100**	**10.4**	**10.4**

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 1				
Parameter	**LC50 Acute Ceriodaphnia**	**LC50 Acute Pimephales**	**C-NOEC Chronic Ceriodaphnia**	**Noel Statre 7Day Chronic Pimephales**
	Monthly Avg Min	**Monthly Avg Min**	**Monthly Avg Min**	**Monthly Avg Min**
Units	**%**	**%**	**%**	**%**
Minimum	**100**	**100**	**0**	**50**
Maximum	**100**	**100**	**100**	**100**
Median	**100**	**100**	**100**	**100**
No. of Violations	**0**	**0**	**1**	**0**
Monitoring Period End Date				
6/30/2016			100	100
9/30/2016	100	100	100	100
12/31/2016			100	100
3/31/2017			100	100
6/30/2017			50	100
9/30/2017	100	100	100	100
12/31/2017			100	100
3/31/2018			50	100
6/30/2018			< 6.25	100
9/30/2018	100	100	100	100
12/31/2018			50	100
3/31/2019			25	100
6/30/2019			100	100
9/30/2019	100	100	100	100

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 1				
Parameter	**LC50 Acute Ceriodaphnia**	**LC50 Acute Pimephales**	**C-NOEC Chronic Ceriodaphnia**	**Noel Statre 7Day Chronic Pimephales**
	Monthly Avg Min	**Monthly Avg Min**	**Monthly Avg Min**	**Monthly Avg Min**
Units	**%**	**%**	**%**	**%**
12/31/2019			100	100
3/31/2020			100	100
6/30/2020			100	100
9/30/2020	100	100	100	100
12/31/2020			100	100
3/31/2021			100	50

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 3								
Parameter	**TRC**	**Ammonia**	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**
	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**	**0.32**	**0.043**	**No Data**	**0**	**0**	**0**	**0**
Maximum	**0**	**7.3**	**0.24**	**No Data**	**0.0017**	**0.0003**	**0.0043**	**0.011**
Median	**Non-Detect**	**0.925**	**0.135**	**No Data**	**0.0009**	**Non-Detect**	**0.00195**	**0.0051**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 3								
Parameter	**TRC**	**Ammonia**	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**
	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**
Monitoring Period End Date								
6/30/2016	< .02	7.3	0.17	< .0005	< .002	< .0005	0.002	0.011
9/30/2016	< .02	1.2	0.2	< .0005	0.0008	< .0005	0.002	0.006
12/31/2016	< .02	2.2	0.16	< .0001	0.0014	0.0003	0.0018	0.0066
3/31/2017	< .02	2.7	0.13	< .0001	0.0015	< .0002	0.0015	0.0043
6/30/2017	< .02	3.2	0.24	< .0001	0.0006	0.0003	0.0017	0.0052
9/30/2017	< .02	0.5	0.14	< .0001	0.0009	< .0002	0.0032	0.0061
12/31/2017	< .02	0.89	0.077	< .0001	0.0008	< .0002	0.0014	0.0045
3/31/2018	< .02	1.9	0.095	< .0001	0.0012	0.0003	0.0017	0.0056
6/30/2018	< .02	0.87	0.2	< .0003	0.0015	< .0003	0.0019	0.0032
9/30/2018	0	0.43	0.15	< .0003	0.0008	< .0003	0.0028	0.0039
12/31/2018	< .02	2.3	0.072	< .0001	0.0011	< .0002	0.0013	0.0059
3/31/2019	< .02	0.51	0.072	< .0003	0.0009	< .0003	0.0025	0.0045
6/30/2019	< .02	2.9	0.088	< .0003	0.0008	< .0003	0.0028	0.0049
9/30/2019	< .02	0.69	0.17	< .0003	0.0013	< .0003	0.0034	0.0067
12/31/2019	< .02	0.5	0.073	< .0003	0.0016	< .0003	0.0018	0.0095
3/31/2020	< .02	0.32	0.043	< .0003	0.0006	< .0003	0.0043	0.0091
6/30/2020	< .02	4.4	0.16	< .0001	0.0007	< .0002	0.0033	0.0038
9/30/2020	< .02	0.96	0.19	< .0001	0.0013	0.0002	0.0031	0.005
12/31/2020	< .02	0.33	0.097	< .0001	0.0017	< .0002	0.0019	0.005
3/31/2021	< .02	0.8	0.065	< .001	< .01	< .005	< .01	< .01

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 3							
Parameter	**Total Solids**	**TDS**	**pH**	**Hardness**	**Alkalinity**	**TOC**	**Specific Conductance**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**mg/L**	**SU**	**mg/L**	**mg/L**	**mg/L**	**umho/cm**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**390**	**260**	**7.13**	**130**	**140**	**9.9**	**516**
Maximum	**750**	**510**	**7.66**	**190**	**230**	**33.1**	**738**
Median	**450**	**430**	**7.455**	**170**	**190**	**17.85**	**663**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date							
6/30/2016	530	460	7.5	140	160	17	738
9/30/2016	430	420	7.49	160	220	12	640
12/31/2016	550	510	7.13	190	190	17	737
3/31/2017	400	480	7.28	130	170	20	687
6/30/2017	540	260	7.43	170	180	19	691
9/30/2017	470	380	7.5	150	190	13	657
12/31/2017	430	410	7.32	130	150	13	648
3/31/2018	530	440	7.33	160	230	33.1	709
6/30/2018	440	440	7.45	170	200	19.1	667
9/30/2018	390	370	7.46	160	160	9.9	516
12/31/2018	440	480	7.66	160	200	15	683
3/31/2019	750	490	7.55	190	220	31.2	706
6/30/2019	480	440	7.55	170	190	16.6	690
9/30/2019	440	420	7.63	180	190	12	659
12/31/2019	460	460	7.37	170	170	19.5	649

Monadnock Paper Mill Outfall Serial Number 001 Quarterly Whole Effluent Toxicity Testing – Part 3							
Parameter	**Total Solids**	**TDS**	**pH**	**Hardness**	**Alkalinity**	**TOC**	**Specific Conductance**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**mg/L**	**SU**	**mg/L**	**mg/L**	**mg/L**	**umho/cm**
3/31/2020	460	430	7.41	190	190	23.3	659
6/30/2020	440	430	7.31	150	140	18.7	647
9/30/2020	420	420	7.44	170	170	19.5	643
12/31/2020	400	430	7.58	180	190	15.1	653
3/31/2021	490	430	7.52	170	170	23	684

Notes:

MGD = million gallons per day
lb/day = pounds per day
SU = standard units
mg/L = milligrams per liter
ug/L = micrograms per liter
NODI: M = no data indicator: cause is laboratory error
deg F = degree fahrenheit
ton/d = tons per day
0 or "<" = parameter not detected
NA = not applicable
Exceedance

Appendix B: Ambient Data

Monadnock Paper Mill Receiving Water Quarterly Nutrient Monitoring	
Parameter	**Total Phosphorus**
	Daily Max
Units	**mg/L**
Effluent Limit	**Report**
Minimum	**0**
Maximum	**0.061**
Median	**0.0195**
No. of Violations	**N/A**
Monitoring Period End Date	
6/30/2016	0.02
12/31/2016	< .01
6/30/2017	0.02
12/31/2017	0.01
6/30/2018	0.017
12/31/2018	0.019
6/30/2019	0.016
12/31/2019	0.02
6/30/2020	0.061
12/31/2020	0.054

Monadnock Paper Mill Receiving Water Quarterly Whole Effluent Toxicity Testing									
Parameter	**pH**	**Ammonia**	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**	**Hardness**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**SU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**6.24**	**No Data**	**0.048**	**0**	**0**	**0**	**0**	**0.003**	**7.4**
Maximum	**7.33**	**No Data**	**0.29**	**0.0001**	**0.0044**	**0.0007**	**0.0016**	**0.039**	**17**
Median	**6.735**	**No Data**	**0.09**	**Non-Detect**	**0.0012**	**0.0004**	**Non-Detect**	**0.00825**	**11**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date									
6/30/2016	7.3	< .1	0.068	< .0005	< .002	< .0005	< .002	0.003	11
9/30/2016	7.26	< .1	0.048	< .0005	< .0005	< .0005	< .002	0.004	14
12/31/2016	7.2	< .1	0.08	< .0001	0.0021	0.0005	< .001	0.0086	17
3/31/2017	7.33	< .1	0.084	< .0001	0.0033	0.0002	< .001	0.01	11
6/30/2017	6.95	< .1	0.12	< .0001	0.0012	0.0005	< .001	0.0078	11
9/30/2017	7.01	< .1	0.063	< .0001	0.0009	0.0006	< .001	0.0062	13
12/31/2017	6.47	< .1	0.11	< .0001	0.001	0.0004	< .001	0.0078	9.6
3/31/2018	6.76	< .1	0.11	< .0001	0.0009	0.0003	< .001	0.009	8
6/30/2018	6.69	< .1	0.094	< .0003	0.0013	0.0003	< .001	0.0079	9.4
9/30/2018	6.24	< .1	0.29	< .0003	0.0025	0.0007	< .001	0.011	9
12/31/2018	6.65	< .1	0.15	< .0001	0.0012	0.0004	< .001	0.0098	7.4
3/31/2019	6.35	< .1	0.072	< .0003	0.0009	< .0003	< .001	0.017	10
6/30/2019	6.78	< .1	0.089	< .0001	0.0013	0.0004	< .0005	0.0056	9.5
9/30/2019	7.07	< .1	0.059	< .0001	0.0009	0.0006	< .001	0.006	13

Monadnock Paper Mill Receiving Water Quarterly Whole Effluent Toxicity Testing									
Parameter	**pH**	**Ammonia**	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**	**Hardness**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**SU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
12/31/2019	6.51	< .1	0.091	< .0003	0.0012	< .0003	< .001	0.0086	15
3/31/2020	6.47	< .1	0.093	0.0001	0.0044	0.0005	< .001	0.039	12
6/30/2020	6.48	< .1	0.092	< .0001	0.0008	0.0003	< .001	0.0052	9.8
9/30/2020	6.92	< .1	0.056	< .0001	0.0014	0.0006	0.0016	0.0077	14
12/31/2020	6.71	< .1	0.079	< .0001	0.0013	0.0004	< .001	0.0092	15
3/31/2021	6.31	< .5	0.12	< .001	< .01	< .005	< .01	0.02	9.2

Notes:

MGD = million gallons per day
lb/day = pounds per day
SU = standard units
mg/L = milligrams per liter
ug/L = micrograms per liter
NODI: M = no data indicator: cause is laboratory error
deg F = degree fahrenheit
ton/d = tons per day
0 or "<" = parameter not detected
NA = not applicable
Exceedance

Appendix C: Reasonable Potential Analysis and Setting Water Quality Based Effluent Limitations

Methodology

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 the *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 minimum levels). EPA used this methodology to calculate the 95th percentile.

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:

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

Where:

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

Solving for the receiving water concentration downstream of the discharge (C_d) yields:

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

[1] USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

As required by Env-Wq 1705.01, 10% of the assimilative capacity of the receiving water is reserved by using a multiplying factor of 0.9 in this calculation. When the downstream concentration exceeds the applicable criterion multiplied by 0.9, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 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. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the applicable criterion as the downstream concentration. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria for toxic pollutants are found in Env-Wq 1703.24.

Freshwater aquatic life criteria for cadmium, copper, lead, nickel, and zinc are established in terms of dissolved metals and are converted to total recoverable using published conversion factors. Additionally, the criteria for cadmium, copper, lead, nickel and zinc are hardness dependent. The downstream hardness value calculated using the mixing equation above and the median effluent and ambient hardness values was 30 mg/L. Since this downstream hardness is above 25 mg/L, it was used to determine the total recoverable metals criteria. *See* Env-Wq 1703.22(f).

In NH WQS, aluminum criteria are expressed as acid-soluble values, see Env-Wq 1703.22(s). As part of the 2015 Permit's public notice, the Permittee submitted additional data on the fraction of acid-soluble to total recoverable aluminum in the Contoocook River.[2] Using the median value from that dataset (0.62), representing the fraction of acid-soluble to total recoverable aluminum, EPA calculated corresponding total recoverable Facility-specific criteria for aluminum by taking the acid-soluble criteria and dividing by 0.62 and multiplying by 0.9 to allow for assimilative capacity as required under Env-Wq 1705.01. The corresponding total recoverable aluminum acute and chronic criteria are 1,090 and 126 µg/L, respectively. EPA and NHDES discussed continuing to use these modified criteria for this Draft Permit. In correspondence sent to EPA on July 13 and 15, 2021, NHDES informed EPA that these criteria could no longer be used because (1) there was an insufficient amount of data used previously and (2) the data was not recent enough. Therefore, for this analysis, aluminum criteria will assume a 1:1 ratio of acid soluble to total aluminum.

Ammonia criteria are calculated based on the temperature and pH of the receiving water. A temperature of 25°C was assumed for calculating warm weather criteria and a temperature of 5°C for cold weather criteria. A receiving water pH of 6.74 S.U. was calculated based on the median of the pH data from quarterly WET tests.

[2] See Comment 2 and EPA's Response in the 2015 Response to Comments document available at https://www3.epa.gov/region1/npdes/permits/2015/finalnh0000230permit.pdf.

As discussed in the phosphorus section above, there are no State numeric criteria for phosphorus. EPA uses the effects-based Gold Book threshold as a general target applicable in free-flowing streams; accounting for New Hampshire's 10% assimilative capacity requirement, the relevant value is 90 µg/L. This is one of multiple lines of evidence EPA uses in assessing whether there is reasonable potential for phosphorus.

All criteria are multiplied by 0.9 to account for the assimilative capacity in the receiving water. *See* Env-Wq 1705.01. The applicable criteria are summarized in the table below.

Summary of Applicable Criteria

Parameter	Applicable Criteria		Applicable Criteria * 0.9	
	Acute Criteria (CMC)	Chronic Criteria (CCC)	Acute Criteria (CMC)	Chronic Criteria (CCC)
Units	**µg/L (unless noted)**			
Aluminum	750	87	675	78
Cadmium	0.59	0.30	0.53	0.27
Copper	4.53	3.35	4.08	3.02
Lead	17.8	0.69	16.0	0.62
Nickel	170	18.9	153	17.0
Zinc	43.4	43.4	39.1	39.1
Phosphorus	--	100	--	90
Ammonia (Warm)	13.3 mg/L	1.47 mg/L	12.0 mg/L	1.33 mg/L
Ammonia (Cold)	29.2 mg/L	4.72 mg/L	26.3 mg/L	4.25 mg/L

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the upstream 7Q10 flow to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration (C) exceeds the applicable criterion multiplied by 0.9, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The results are summarized in the table below.

Summary of Reasonable Potential Results

Parameter	Units	Ambient Concentration[1]	Effluent Concentration[2]	Downstream Acute Concentration[3]	Downstream Chronic Concentration[3]	Acute Criterion[4]	Chronic Criterion[4]	Acute Reasonable Potential[5]	Chronic Reasonable Potential[5]
Aluminum	µg/L	90.00	256.1	110.1	105.9	675	78	N	**Y**
Cadmium	µg/L	0.0	0.0	0.0	0.0	0.53	0.27	N	N
Copper	µg/L	1.20	1.96	2.8	1.3	4.08	3.02	N	N
Lead	µg/L	0.40	0.3	0.4	0.4	16.0	0.62	N	N
Nickel	µg/L	0.0	3.8	0.5	0.4	153	17.0	N	N
Zinc	µg/L	8.25	9.3	8.4	8.4	39.1	39.1	N	N
Phosphorus	µg/L	19.5	680	--	82.6	--	90	--	N
Ammonia (Warm)	mg/L	0.0	7.28	0.88	0.70	12.0 mg/L	1.33 mg/L	N	N
Ammonia (Cold)	mg/L	0.0	3.65	0.44	0.35	26.3 mg/L	4.25 mg/L	N	N

[1] Median upstream values calculated using monitoring data for the receiving water immediately upstream of the Facility's discharge reported by the Facility (see Appendix B).
[2] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).
[3] Values represent downstream, mixed concentration
[4] Acute and Chronic Criteria were multiplied by 0.9 based on NH State Water Quality Guidelines
[5] "Y" is indicated if downstream concentration exceeds the criterion. "N" is indicated if downstream concentration does not exceed the criterion.

Based on this analysis, aluminum has reasonable potential to cause or contribute to an excursion above water quality standards based on the chronic aquatic life water quality criteria. No other parameters had reasonable potential to cause or contribute to an excursion above water quality standards.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY-REGION 1 (EPA)
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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; NHDES PUBLIC NOTICE OF EPA REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT; AND NHDES PUBLIC NOTICE OF ISSUANCE OF A STATE SURFACE WATER PERMIT UNDER NH RSA 485-A:13, I(a).

PUBLIC NOTICE PERIOD: **July 22, 2021 – August 20, 2021**

PERMIT NUMBER: **NH0000230**

PUBLIC NOTICE NUMBER: **NH-006-21**

NAME AND MAILING ADDRESS OF APPLICANT:

Monadnock Paper Mills, Inc
117 Antrim Road
Bennington, New Hampshire 03442

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Monadnock Paper Mills, Inc
117 Antrim Road
Bennington, New Hampshire 03442

RECEIVING WATER AND CLASSIFICATION:

Contoocook River (Class B)

PREPARATION OF THE DRAFT PERMIT, EPA REQUEST FOR CWA § 401 CERTIFICATION, AND PROPOSED ISSUANCE OF A STATE SURFACE WATER PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Monadnock Paper Mill facility which discharges treated papermaking process water. The effluent limits and permit conditions imposed have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at Env-Wq 1700 et seq. NHDES cooperated with EPA in the development of the Draft NPDES Permit. NHDES plans to adopt EPA's permit under Chapter 485-A of the New Hampshire Statutes (NH RSA 485-A:13, I(a)).

In addition, EPA has requested that NHDES grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent than those in the Draft Permit that NHDES finds necessary to meet these requirements. In addition, NHDES may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/new-hampshire-draft-individual-npdes-permits or by contacting:

Nathan Chien
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1649
Chien.Nathan@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by August 20, 2021, which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification and/or NHDES proposed issuance of a State Surface Water Permit, should be submitted to the EPA contact at the address or email address listed above. Upon the close of the public comment period, EPA will make all comments available to NHDES.

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

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and 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

ACTING DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES