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",

Enthalpy Analytical

is authorized to discharge from a facility located at

Enthalpy Analytical
1 Lafayette Road, Unit 6
Hampton, NH 03843-0778

to receiving water named

Taylor River
Piscataqua-Salmon Falls Watershed

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

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

This permit expires at midnight on [DATE].

This permit supersedes the permit issued on June 19th, 2012.

This permit consists of this **cover page**, **Part I**, **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012), 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 wastewater from culturing organisms and conducting bioassays through Outfall Serial Number 002 to the Taylor River. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Units	Effluent Limitations		Monitoring Requirements[1,2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Effluent Flow[6]	gallons/day	Report	7000	Continuous	Meter or Totalizer
Total Suspended Solids (TSS)	mg/L	Report	50	1/Week	Grab
pH[7]	S.U.	6.5 – 8.25		1/Day	Grab
Fecal Coliform[8,9]	# / 100mL %	14 --	Report 10	3/Week	Grab
Enterococci[8]	# / 100mL	35	104	5/Week	Grab
Total Nitrogen[10]	mg/L	--	Report	1/Quarter	Composite
Total Phosphorus	mg/L	--	Report	1/Quarter	Composite
Total Residual Chlorine (when in use)[11]	mg/L	0.75	1.0	2/Day	Grab
Whole Effluent Toxicity (WET) Effluent Parameters[12,13]					
LC_{50}	%	--	≥ 100	1/Year	Composite

Effluent Characteristic	Units	Effluent Limitations		Monitoring Requirements[1,2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Ammonia Nitrogen as N	mg/L	--	Report	1/Year	Composite
Total Recoverable Cadmium	mg/L	--	Report	1/Year	Composite
Total Recoverable Copper	mg/L	--	Report	1/Year	Composite
Total Recoverable Lead	mg/L	--	Report	1/Year	Composite
Total Recoverable Nickel	mg/L	--	Report	1/Year	Composite
Total Recoverable Zinc	mg/L	--	Report	1/Year	Composite
Whole Effluent Toxicity (WET) Receiving Water Characteristic[12,13,14]					
Ammonia Nitrogen as N	mg/L	--	Report	1/Year	Grab
Total Recoverable Cadmium	mg/L	--	Report	1/Year	Grab
Total Recoverable Copper	mg/L	--	Report	1/Year	Grab
Total Recoverable Lead	mg/L	--	Report	1/Year	Grab
Total Recoverable Nickel	mg/L	--	Report	1/Year	Grab
Total Recoverable Zinc	mg/L	--	Report	1/Year	Grab
pH[15]	S.U.	--	Report	1/Year	Grab

Effluent Characteristic	Units	Effluent Limitations		Monitoring Requirements[1,2,3]	
		Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Temperature[15]	°C	--	Report	1/Year	Grab
Salinity	parts per trillion	--	Report	1/Year	Grab

Footnotes:

1. Effluent samples shall yield data representative of the discharge during worst case conditions; e.g., immediately following a culture tank cleaning event or the disposal of bioassay test water. A routine sampling program shall be developed in which samples are taken near the discharge point to the receiving water after treatment by any settling system, prior to co-mingling with any other wastestream (including the discharge from NPDES Permit NH0022985). Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA) and the State. 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 § 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; 2/week and 5/week correspond to discharge events on separate days of a calendar week, either 2 or 5 different days per week, respectively. 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 in 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. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator (NODI) 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 continuously measured using a flow meter or totalizer and reported in gallons per day. For flow, calculate the average monthly flow by dividing total recorded gallons discharged each month by the number of days of discharge in that month. For those months when a discharge does not occur, the Permittee must still submit the DMR with the appropriate NODI Code for each parameter. A written explanation for the NODI Code is also required with the DMR report.

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.).

8. Fecal coliform and *Enterococci* bacteria shall be sampled concurrently. The average monthly values for fecal coliform and *Enterococci* bacteria shall be determined by calculating the geometric mean. All fecal coliform and *Enterococci* bacteria data collected must be submitted with the monthly DMRs. Bacteria monitoring does not need to be done on the six major holidays of each year: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The sampling frequency may be reduced to a minimum of four times per week during weeks that include one of these holidays, but should be noted as a comment on the monthly DMR. When chlorine is in use, monitoring for fecal coliform and *Enterococci* bacteria shall be conducted concurrently with the monitoring for TRC described below.

9. Fecal coliform shall be tested using the 5-tube decimal dilution test. The average monthly value for Fecal Coliform shall be determined by calculating the geometric mean using the daily sample results. In addition, not more than 10 percent of the fecal coliform samples collected shall exceed 43 Most Probable Number (MPN) per 100 mL for a 5-tube decimal dilution test. The percentage of samples that exceed 43 MPN per 100 mL for the 5-tube decimal dilution test in a given month shall be reported as a Daily Maximum value on the monthly DMR.

10. 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.

11. Monitoring and reporting is only required during chlorine use for disinfection. The ML for total residual chlorine (TRC) is defined as 0.02 mg/L. This value is the minimum level for chlorine using EPA approved methods found in Standard Methods for the examination of Water and Wastewater Method 4500 CL-E and G, or EPA Manual of Methods of Analysis of Water and Wastes, Method 330.5 One of these methods must be used to determine total residual chlorine. Monitoring for fecal coliform and *Enterococci* bacteria as described above shall be conducted concurrently with the monitoring for TRC, when chlorine is in use. A "NODI: 9" code should be entered on the monthly DMR if chlorine is not used or discharged.

12. The Permittee shall conduct acute toxicity tests (LC_{50}) once per year during the calendar quarter ending September 30 in accordance with test procedures and protocols specified in **Attachment A** of this permit. LC_{50} is defined in Part II.E. of this permit. The Permittee shall test the mysid shrimp (*Americamysis bahia*) and inland silverside (*Menidia beryllina*) species. The complete report for each toxicity test, including all of the results, shall be submitted as an attachment to the DMR submittal.

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

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

15. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection (i.e., in the field) 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.

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 the Director 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 the Director 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 the Director 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(s) 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. The Permittee shall notify EPA and NHDES within 24-hours upon the occurrence of a water quality induced mortality of greater than 25 percent in any aquatic species under culture at the Facility (excluding larval fish and eggs) during a single mortality event.

2. The Permittee must notify EPA and NHDES-WD when there is a "reportable failure" in (as defined immediately below), or damage to, the structure of an aquatic animal containment system (i.e. culture unit) or its wastewater treatment system that results in an unanticipated material discharge of pollutants to waters of the United States.

   A reportable failure applies to any active culture units and ancillary components (pipes, valves, plumbing fixtures or physical barriers that prevent water, sediment or settled solids from spilling).

3. In the event of a spill of drugs, feed or other products that results in a discharge to waters of the United States, the Permittee must provide an oral report of the spill within 24 hours of its occurrence and a written report within 5 days to EPA and NHDES-WD. The report shall contain the identity and quantity of the material spilled.

4. Effluent Diffuser Maintenance and Inspection

   a. Effluent diffusers shall be maintained when necessary to ensure proper operation. Proper operation means that the plumes from each port will be balanced relative to each other and that they all have unobstructed flow. Maintenance may include dredging in the vicinity of the diffuser, clean out of solids in the diffuser header pipe, removal of debris and repair/replacement of riser ports and pinch valves.

   b. Any necessary maintenance dredging must be performed only after receiving all necessary permits from the NHDES Wetlands Bureau and other appropriate agencies.

   c. To determine if maintenance will be required the Permittee shall have a licensed diver or licensed marine contractor inspect and videotape the operation of the diffuser. The inspections and videotaping shall be performed in accordance with the following schedule.

      (1) Every year if no pinch valves have been installed on the riser ports; or
      (2) Every 2 years if pinch valves have been installed on the riser ports.

   d. The video of the diffuser inspection and a copy of a report summarizing the results of the inspection shall be submitted to EPA and NHDES-WD on a USB drive within 60 days of each inspection. A schedule for cleaning, repairs, or other necessary maintenance shall be included in the report if the inspection indicates that it is necessary. Necessary cleaning, repairs, or other maintenance should be documented with a photo or video taken after the action is completed.

5. Discharges of Chemicals and Additives

   The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA and the State or provided through a subsequent written notification submitted to EPA and the State is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA and the State 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 and the State unless otherwise notified by EPA and/or the State. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA and the State in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

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

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), 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 which demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) will not add any pollutants in concentrations which 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.

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 no later than the 15th day of the month electronically using NetDMR. 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), 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 the EPA WD:

      (1) Transfer of Permit notice;
      (2) Request for changes in sampling location;
      (3) Request to discharge new chemicals or additives;
      (4) Request for pH Effluent Limitation Adjustment;
      (5) Request for change in WET testing requirements; and
      (6) Report on unacceptable dilution water/request for alternative dilution water for WET testing.

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

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

4. Submittal of Reports in Hard Copy Form

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

(1) Prior to December 21, 2020, written notifications required under Part II. Starting on December 21, 2020, 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:

603-271-1493

E. STATE 401 CERTIFICATION CONDITIONS

1. This permit is in the process of receiving water quality certification issued by the Sate under § 401(a) of the CWA and 40 CFR § 124.53. EPA may incorporate all appropriate state water quality certification requirements (if any) into the final permit. Preliminarily, the following requirements have been proposed by NHDES.

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 the EPA under Federal law. Upon final issuance by the 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 Permittee is responsible for immediately notifying the NHDES, Watershed Management Bureau, Shellfish Section of possible high bacteria/virus loading events from its facility. Such events include:

    a. Any lapse or interruption of normal operation of the facility's effluent disinfection system, or other event that results in discharge of effluent that has not undergone full treatment as specified in the facility's NPDES permit application; or
    b. Daily flows in excess of the facility's maximum daily flow of 7,000 gallons per day; or
    c. Daily post-disinfection effluent sample results of greater than 43 fecal coliform counts per 100 milliliters. The Permittee may use any NHDES-approved method for measuring fecal coliform. Notification shall also be made for instances where NPDES-required bacteria sampling is not completed, or where the results of such sampling are invalid.

Notification shall be made using the program's cell phone number (603-568-6741). If Shellfish Program staff are not available to answer the phone, leave a message describing the event and provide your contact information, including the phone number you can be reached at. Then, call the Shellfish Program's pager (603-771-9826) and enter a call back number. Upon initial notification of a possible high bacteria/virus loading event, Shellfish Program staff will determine the most suitable interval for continued notification and updates on an event-by-event basis.

MARINE 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:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

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

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

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

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

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. 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 holding time extension. 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[1] (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

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

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 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. 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 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 is found to be, or suspected to be toxic or unreliable, 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 case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require 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

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, < 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated Artemia naupli while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt ± 10 % by adding dry ocean salts
3. Temperature	20°C ± 1°C or 25°C ± 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

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.2. Use of Reference Toxicity Testing

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

In general, 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 as prescribed below.

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.2.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 IC25s and LC50 values and ≥ two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent[*1] (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine [*2]	x	x	0.02
Total Solids and Suspended Solids	x	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

Superscript:

[*1] These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

[*2] Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) 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
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

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

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

FACT SHEET

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

NPDES PERMIT NUMBER: NH0022055

PUBLIC NOTICE START AND END DATES: December 15, 2020 – January 29, 2021

NAME AND MAILING ADDRESS OF APPLICANT:

Enthalpy Analytical
1 Lafayette Road, Unit 6
Hampton, NH 03843-0778

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Enthalpy Analytical
1 Lafayette Road, Unit 6
Hampton, NH 03843-0778

RECEIVING WATER AND CLASSIFICATION:

Taylor River (Hydrologic Unit Code: 01060003)
Piscataqua-Salmon Falls Watershed
Class B

SIC CODE: 8734 (Laboratory)

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Appendices

1.0 Proposed Action

Enthalpy Analytical (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 Enthalpy Analytical laboratory facilities in Hampton, New Hampshire (the Facility) into the Taylor River.

The permit currently in effect at the Facility was issued on June 19th, 2012 with an effective date of September 1st, 2012 and expired on August 31st, 2017 (the 2012 Permit). The 2012 Permit was initially issued to EnviroSystems, Inc. who was subsequently bought by Enthalpy Analytical on October 21st, 2017. Prior to the purchase, EnviroSystems, Inc. filed an application for permit reissuance with EPA dated January 30, 2017, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on March 23rd, 2017, the Facility's 2012 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). A notice of transfer letter from Enthalpy Analytical was received by EPA on May 19, 2020. The letter stated that the effective date of the transfer was September 30, 2017. EPA confirmed receipt of the transfer letter on May 20, 2020 and updated the ownership status for the NPDES Permit. In lieu of a site visit, EPA and the State held a conference call with the Permittee on May 4, 2020.

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 adopt 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.

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 in the New Hampshire Code of Administrative Rules, Surface Water Quality Regulations, Chapter Env-Wq 1700 *et seq*. *See also generally*,

N.H. Rev. Stat. Title L, Water Management and Protection, Chapter 485-A, Water Pollution and Waste Disposal.

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 exiting 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 the EPA 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 establish1ed 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.

2.4.2 Reporting Requirements

[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).

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 the EPA 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 2012 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The Facility is located along the southern bank of the Taylor River in a commercial business park off Lafayette Road in Hampton, New Hampshire. A location map is shown in Figure 1. The Facility provides a range of aquatic and terrestrial toxicological testing as well as analytical chemistry services. Tests conducted include: acute assays with daphnids, fathead minnows, trout,

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

sheepshead minnows, mysid shrimp and algae. Chronic exposure assays are tested with the same species plus sea urchins and macro algae. The Permittee cultures some of the test species used in its testing programs and also maintains facilities for acclimation and holding of test species purchased from outside sources. Discharges include culture flow through water, and wastewater from both static and flow-through exposure bioassays. Culture water is supplied from the Taylor River.

The Facility's laboratory and offices are enclosed in a central building on the southern end of the business park. Discharge and intake lines are routed from that central building across the parking lot into the Taylor River. The discharge line extends out to the center of the river across the riverbed and is equipped with a multiport diffuser. The Permittee shares the discharge and intake lines with an adjacent business, Aquatic Research Organisms (ARO); both facilities were previously owned by Millipore of New Hampshire prior to the 2012 Permit, but now have their own NPDES discharge permits (ARO's discharge is covered under NPDES No. NH0022985). A site plan is provided in Figure 2.

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based effluent limitation guidelines (ELGs) for the Laboratory (SIC 8734) classification in 40 CFR Subchapter N Parts 405 through 471. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. 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.

3.2 Location and Type of Discharge

Outfall 002 is located at approximately Latitude 42° 55' 26" Longitude -70° 51' 05" in the center of the channel, along the streambed of Taylor River. The outfall is equipped with a multiport diffuser and discharges culture water from both the Facility and ARO. The Permittee has requested authorization to continue the discharge of culture flow through water and wastewater from bioassays through Outfall 002 into the Taylor River.

Process water used by the Facility includes seawater from the Taylor River. Seawater is withdrawn through an intake line in the Taylor River, typically no more than 5000 gallons per day (shared by ARO and the Facility). This seawater is stored either in the main laboratory building or in a storage tank shared by ARO and the Facility. As needed, seawater is filtered by sand filters and used in flow through bioassays and culture water for toxicology tests.

When finished using, process water is gravity fed down to the bottom floor of the lab where it mixes in a sump/trench system that pumps water to the wastewater treatment circuit (a schematic of water treatment is provided in Figure 3). Water passes through 2 bag filters of 25- and 5-micron pore size then flows through a series of ultraviolet sterilization units. The wastewater cycle will repeat until the desired level of treatment is achieved. Treated wastewater is then

directed out of the treatment loop outside the building where it combines with ARO effluent before discharging through Outfall 002 into the Taylor River. Sampling is conducted at the end of the treatment loop, after UV sterilization but before diversion to outfall 002.

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 April 2015 through March 2020, is provided in Appendix A of this Fact Sheet. Additional whole effluent toxicity test data from 2013 and 2014 is also included in Appendix A.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 002 to Taylor River (Assessment Unit ID NHEST600031003-02, which consists of 0.0472 square miles in Hampton, New Hampshire. Taylor River is part of the Piscataqua-Salmon Falls Watershed. Taylor River originates at the Taylor River Reservoir and discharges into the Hampton River and then onto Hampton Harbor.

Taylor River is classified as a Class B, warm water fishery by the State of New Hampshire. According to New Hampshire's WQSs (RSA 485-A:8, II), "*The waters of this classification shall be considered as being acceptable for fishing, swimming, and other recreational purposes and, after adequate treatment, for use as water supplies.*" In addition, New Hampshire WQSs at Env-Wq 1703.01(c) specifies that "*All surface waters shall provide, wherever attainable, for the protection and propagation of fish, shellfish and wildlife, and for recreation in and on the surface waters.*"

Taylor River is listed in the *New Hampshire 2018 Section 303(d) Surface Water Quality List* as Category 5-M, meaning the water is impaired or threatened for one or more designated uses by a pollutant(s), and requires a TMDL; however, the impairment is marginal[5]. To date no TMDL has been developed for this segment for any of the listed impairments. The status of each designated use and the cause of impairments is listed in Table 1.

Table 1: Summary of Designated Uses and Listing Status

Designated Use	Status	Impairment
Aquatic Life	No Data	--
Drinking Water After Adequate Treatment	Full Support	--
Fish Consumption	Not Supporting	Mercury, PCBs
Shellfish Consumption	Not Supporting	Dioxin, Fecal Coliform, Mercury, PCBs
Primary Contact Recreation	No Data	--
Secondary Contact Recreation	No Data	--
Wildlife	No Data	--

[5] *New Hampshire 2018 Section 303(d) Surface Water Quality List.* State of New Hampshire Department of Environmental Services, Concord; NH August, 2019.

According to the *New Hampshire 2018 Section 305(b) Assessment Summary Report for the Taylor River* (Assessment Unit ID NHEST600031003-02)[6], this water body segment is impaired for fish consumption and shellfish consumption with Mercury, PCBs, Dioxin, and Fecal Coliform the sources of the impairments (Table 1). Drinking Water After Adequate Treatment is fully supported. The other designated uses have not been assessed.

4.2 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[7] The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs require that for tidal waters like the Taylor River, the low flow condition shall be equivalent to the conditions that result in a dilution that is exceeded 99% of the time, see Env-Wq 1705.02. NHDES's marine dilution policy interprets this low flow scenario as the seventh lowest spring and neap tides for the year which corresponds to the 1% low tide.

In 1997, during development of a previous permit for the Facility, NHDES calculated the dilution allowance using CORMIX for the Permittee's multiport diffuser outfall. A combined flow of 19,000 gallons per day was used to represent the maximum daily flow from both facilities using Outfall 002 and, similarly, a combined flow of 14,000 gallons per day was used to represent monthly average flow. The CORMIX model predicted that the worst case acute and chronic dilutions occurred 15 minutes after the spring low tide. From these modelling results, NHDES determined that the dilution allowance for maximum daily flow is 97.9:1 and monthly average flow is 100:1. Upon review of the previous modelling results, the Facility's effluent data, and an analysis of the sensitivity of the reasonable potential modeling results discussed later to a range of different dilution allowances, NHDES's determination of 97.9:1 maximum daily and 100:1 monthly average dilution allowances has remained the same in this Draft Permit issuance.

The dilution allowance considered in this Fact Sheet is contingent on the proper operation and maintenance of the Facility's multiport diffuser. The failure of these mechanical structures could change the results of the reasonable potential calculations that determine if effluent limitations are necessary, in turn leading to violations of state WQSs. Accordingly, the Draft Permit continues the condition that requires periodic inspections and regular maintenance of the diffuser pursuant to 40 CFR § 122.41(e), "*Proper operation and maintenance.*"

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.

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[6] Assessment Reports can be found through NHDES Surface Water Quality Assessment Viewers at https://www.des.nh.gov/organization/divisions/water/wmb/swqa/index.htm.
[7] EPA Permit Writer's Manual, Section 6.2.4

EPA notes that the State of New Hampshire adopted new criteria into their WQSs in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, the Draft Permit is being proposed with effluent limits derived to meet the new criteria in anticipation of a state certification to do so. These criteria have been applied as effluent limitations for fecal coliform, *Enterococci*, and total residual chlorine. Additionally, the updated criteria have been referenced in EPA's reasonable potential analysis discussed below.

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 data are included in Appendix A. EPA's Reasonable Potential Analysis is included in Appendix B and results are discussed in the applicable sections below.

5.1.1 Effluent Flow

From April 2015 through March 2020 monthly average effluent flow has ranged from 380 to 5,134 gallons per day and daily maximum effluent flow has ranged from 1,164 to 10,626 gallons per day (Appendix A). The Facility's 2012 permit limits the discharge to a daily maximum flow limit of 7,000 gallons per day. This flow limit was exceeded four times with values of: 7,565, 10,274, 10,626 and 7,237 gallons per day. The causes of these exceedances included unscheduled increases in bioassay testing demand (3 of the exceedances) and an accidental release of tap water in 2020.

As described in the Fact Sheet to the 2012 Draft Permit, the original intention of the daily maximum effluent flow limitation was to constrain both daily maximum and monthly average flow to less than 7,000 gallons per day to ensure that water quality in the receiving water was met. These limits were applied based on historical facility use and were used in calculations of available dilution that take into account the combined flow from the Permittee's facility and ARO. EPA has found no substantive reason to change the maximum daily flow limit given the historical data and so the Draft Permit maintains this limit.

5.1.2 Total Suspended Solids

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). 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.

The 2012 Permit included a maximum daily TSS limitation of 50 mg/L, with TSS measurements collected once per week. This maximum daily limit was established using BPJ pursuant to CWA § 402(a)(1) and was aimed at protecting the Taylor River from TSS concentrations that could form objectionable benthic deposits in the vicinity of the discharge.

From April 2015 through March 2020, daily maximum total suspended solids (TSS) concentrations have ranged from below detection limits to 210 mg/L (Appendix A). Of 60 reported maximum daily values during this time frame, there were 6 exceedances of the permit's 50 mg/l TSS limit of 75, 56, 100, 54, 170, and 210 mg/L. Treatment for solids at the site consists of a settling box set up prior to discharge. The Permittee indicated that exceedances were likely due to improper operating procedures related to replacing bag filters; specifically, inadequate flushing of the filters before collecting a representative sample of effluent.

The daily maximum TSS limit has been continued in the Draft Permit in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1). Performance data from the Facility indicate that this limit is routinely achievable and no material or substantial changes in operations at the Facility have occurred since this limit was imposed. TSS measurements continue to be required to take place during cleaning or "worst-case" conditions.

5.1.3 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.

From April 2015 through March 2020 (Appendix A), pH has ranged from 6.81 to 9.05 S.U, with three permit exceedances of 9.00, 8.31, and 9.05. The 2012 Permit requires a pH range of 6.5 to 8.25 S.U. when the Facility is discharging, monitored daily by grab sample. The pH limitations were originally based on the State WQSs at RSA 485-A:8 II, which require that "The pH for said (Class B) waters shall be 6.5 to 8.0 except when due to natural causes," and were subsequently adjusted prior to the 2012 Permit, given a NHDES-approved demonstration by the Permittee that the proposed limit modification was sufficiently stringent to meet the State's Class B WQS in the receiving water. The Permittee conducted a new pH study during the summer of 2020 which was approved by NHDES in a letter dated September 2, 2020. Therefore, the Draft Permit continues pH effluent limitations of 6.5-8.25 S.U. which have been shown to still achieve Class B WQSs in the Taylor River.

5.1.4 Bacteria

Fecal coliform, E. coli, and enterococci bacteria, are indicators of contamination from sewage and/or the feces of warm-blooded wildlife (mammals and birds). Bacteria can survive in freshwater and saltwater environments and can impact water quality. As described above, the Taylor River is impaired for shellfish consumption due to the presence of fecal coliform.

State WQSs at NH. RSA 485-A:8,V. include *Enterococci* bacteria limits for discharges to tidal waters utilized for swimming purposes." The recommended criteria for *Enterococci* bacteria specifies that the water should contain "… not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 35 enterococci per 100 milliliters, or 104 enterococci per 100 milliliters in any one sample, unless naturally occuring."

In addition, for facilities which discharge into tidal waters used for growing or taking of shellfish for human consumption, New Hampshire State statute RSA 485-A:8,V specifies that the bacteria standard shall be "…as recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration." The Shellfish Program Manual – also referred to as the *National Shellfish Sanitation Program, Guide for the Control of Molluscan Shellfish*, 2017 Revision[8] – requires that the geometric mean fecal coliform most probable number (MPN) not exceed 14 per 100 mL. Additionally, not more than 10 percent of the samples should exceed either an MPN of 43 per 100 mL for a 5-tube decimal dilution test; or an MPN of 49 per 100 mL for a 3-tube decimal dilution test; or an MPN of 28 per 100 mL for a 12-tube single dilution test; or 31 colony forming units (CFU) per 100 mL for a MF (mTEC) test.

From April 2015 through March 2020, measurements of *Enterococci* ranged from no detections to 2207 per 100 mL, with the geometric monthly average as high as 94 per 100 mL. During that same time period daily maximum fecal coliform bacteria counts were as high as 2420 per 100 mL with the maximum of the monthly average counts equal to 9.1 per 100 mL. There were no exceedances of the fecal coliform monthly average limit of 14 per 100 mL and there were no *Enterococci* limits in the 2012 Permit. There were 2 months when the NSSP "no more than 10% of monthly samples shall exceed 43 MPN/100 mL" limitation from the 2012 permit was exceeded, with 13.6 and 14.3% of samples exceeding the limit.

Consistent with state WQSs and the high bacteria concentrations observed in the Facility's effluent, the Draft Permit includes *Enterococci* and fecal coliform limits. Since the Taylor River is designated for swimming, *Enterococci* limits have been included in the Draft Permit. These WQBELs are a daily maximum limit of 104 #/100 mL and a monthly average (geometric mean) concentration of 35 #/100 mL. The monitoring frequency for *Enterococci* has been increased to five times per week to ensure adequate samples are available to calculate monthly averages. For fecal coliform, the Draft Permit also retains the average monthly geometric mean limit of 14 colonies per 100 mL as a WQBEL based on the Shellfish Program Manual. In addition, EPA has decided to implement the National Shellfish Program percent exceedance requirement using the 5-tube decimal dilution test and the corresponding limit of not more than 10 percent of samples in a given month shall exceed 43 MPN per 100 mL. The 5-tube decimal dilution test was chosen because it is the only EPA approved test method under 40 CFR § 136.3.

5.1.5 Nutrients: Total Nitrogen and Total Phosphorus

[8] *National Shellfish Sanitation Program (NSSP) Guide for the Control of Molluscan Shellfish,* 2017 Revision. U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration. Available at https://www.fda.gov/food/federalstate-food-programs/national-shellfish-sanitation-program-nssp.

Nitrogen and phosphorus are essential nutrients for plant growth. However, elevated concentrations of either 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. Along with solids, nutrients like nitrogen and phosphorus are likely to be the primary pollutants added to a Facility's effluent when discharging aquatic animal culture water. Animal waste products, excess feed, and mortalities can all contribute to nutrient discharges.

While the Facility has historically not been required to monitor for nutrients in its discharge, the Draft Permit establishes nutrient monitoring requirements to characterize the magnitude of these parameters in the Facility's effluent as well as the potential of the Facility's effluent to violate WQSs. Specifically, Env-Wq 1703.14(a) states, "Class B waters shall contain no phosphorus or nitrogen in such concentrations that would impair any existing or designated uses, unless naturally occuring." Therefore, the Draft Permit contains quarterly monitoring requirements for both Total Nitrogen and Total Phosphorus. 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.

5.1.6 Total Residual Chlorine

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

The Facility utilizes an ultraviolet (UV) disinfection system for all of its process water and effluent. Any water discharged from the Facility passes through three separate UV disinfection units. However, in the event the UV units are not operational, the Facility may chlorinate their process water as an alternative disinfection method. Therefore, previous permits for the Facility have imposed effluent limitations for total residual chlorine (TRC) of 0.75 mg/L (monthly average) and 1.0 mg/L (daily maximum) to be monitored twice per day when chlorine is in use. The monthly average value of 0.75 mg/L was established as a WQBEL and based on the chronic marine WQS for chlorine and the monthly average dilution factor of 100.

At the time the limits were established, there was no recommended acute WQS for chlorine, so the maximum daily limitation of 1.0 mg/l was established using Best Professional Judgement (BPJ) under the authority granted in Section 402(a)(1) of the CWA and 40 CFR § 125.3. The current marine acute WQS for chlorine in New Hampshire is 13 µg/l. *See* Env-Wq 1700.21, Table 1703-1. Adjusting the WQS based on the Facility's daily maximum dilution factor (97.9) leads to a corresponding WQBEL of 1.37 mg/l. Since the BPJ limit (1.0 mg/l) is more stringent than the updated WQBEL (1.37 mg/l), the Draft Permit maintains the BPJ limit. Anti-backsliding prohibits the use of less stringent limitations than those contained in a previous permit. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l).

Over the last 10 years, chlorine has not been used at the Facility and therefore no monitoring data has been submitted for TRC. The Draft Permit has continued the limitations described above including a monitoring frequency of twice per day when chlorine is in use, during the period chlorine is discharged (accounting for chlorine's travel time through the treatment system).

5.1.7 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism, and persistence of the pollutants in the discharge do not cause toxicity, even when the individual pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the 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))."

The 2012 Permit continued an LC_{50} (acute) WET testing limitation of >=100% and monitoring requirements from previous permit issuances. These limitations were included due to the discharge of effluents that could contain toxic chemicals. The 2012 Permit issuance relaxed the frequency of monitoring requirements from quarterly to yearly due to a history of compliance with the permit limitation (100% of 21 WET test resulted reported no toxicity). Since Permit issuance in 2012, the Facility has reported 7 WET test results of LC_{50} >= 100% for both mysid shrimp and inland silverside. These results along with the significant dilution afforded to the effluent have convinced EPA that more stringent limitations or monitoring requirements are not necessary. Therefore, EPA maintains the existing WET testing requirements, consistent with anti-backsliding regulations.

5.1.7.1 Additional WET Parameters

WET tests provide a way to assess both the toxicity of the effluent as a whole and the toxicity of individual pollutants. The 2012 Permit required the Permittee to report Total Ammonia Nitrogen as N and Total Recoverable metals (cadmium, chromium, copper, lead, nickel, and zinc) in conjunction with its toxicity test results. Using these reported values, EPA conducted a reasonable potential analysis to determine if the Facility's effluent has a reasonable potential to cause or contribute to an exceedance of the applicable water quality criteria for the analytes above. The details and results of that analysis are included in Appendix B.

From the reasonable potential analysis, EPA has concluded that the Facility's effluent does not have reasonable potential to cause an excursion of water quality criteria for toxic metals or ammonia nitrogen. The Draft Permit has maintained the reporting requirements for these metals (excluding chromium) and ammonia nitrogen. Chromium reporting has been removed due to its corresponding removal from EPA's WET Testing Protocol and the lack of detections in the historical DMR data. Lastly, receiving water (i.e., diluent) reporting requirements have been added to the Draft Permit. The inclusion of diluent reporting requirements will allow for a more accurate characterization of the combined toxic effect of the effluent with the receiving water.

5.2 Special Conditions

5.2.1 Water Quality Induced Mortality

The 2012 Permit included a condition to notify EPA and the State if a water-quality induced mortality of greater than 25 percent of cultured species were to occur. Since the Facility uses toxic chemicals, such as formaldehyde, and has measured high bacteria loadings in their discharge, EPA finds that this notification requirement is necessary to protect water quality standards, particularly the downstream designated uses for primary and secondary contact recreation. EPA is authorized to include additional monitoring requirements and other special conditions under CWA §§ 402(a)(2) and 308(a).

5.2.2 Reportable Failure

The 2012 Permit included a condition to notify EPA and the State if a reportable failure to an aquatic animal containment system were to occur. This condition falls under Operation and Maintenance of Pollution Controls in the Draft Permit's Standard Conditions, see Draft Permit Part II.B., as well as Reporting Requirements in Part II.D.e. The Draft Permit has carried this condition forward.

5.2.3 Spill Notification

The 2012 Permit included a condition to notify EPA and the State if their were a spill of drugs, feed or other products resulting in a discharge to waters of the United States. This condition falls under Operation and Maintenance of Pollution Controls in the Draft Permit's Standard Conditions, see Draft Permit Part II.B., as well as Reporting Requirements in Part II.D.e. The Draft Permit has carried this condition forward.

5.2.4 Effluent Diffuser Maintenance and Inspection

The Draft Permit has set effluent limitations and monitoring requirements using dilution factors that assume the outfall diffuser is operating as designed. A broken diffuser that is not diluting effluent to the degree assumed in dilution factor calculations could lead to violations of WQSs. Therefore, the Draft Permit continues the requirement from the 2012 Permit to inspect and maintain the effluent diffuser.

5.2.5 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 and the State. No chemicals and additives were disclosed to EPA.

However, EPA recognizes that chemicals and additives in use at a Facility may change during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the discharge of a new chemical or additive; allows EPA and the State to review 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 and the State:

- Product name, chemical formula, 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 and average), 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 which demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations which 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 and the State unless otherwise notified by EPA or the State.

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 to and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and any habitat of such species that has been designated as critical under the ESA (i.e., “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 Enthalpy Analytical's discharge of pollutants. The Draft Permit is intended to replace the 2012 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from the Facility, EPA determines potential impacts to federally listed species, and initiates consultation with the Services, when required under § 7(a)(2) of the ESA.

The discharge, identified as Outfall 002, is located at approximately Latitude 42° 55' 26" Longitude -70° 51' 05" in the center of the channel, along the streambed of the Taylor River. The discharge is comprised of culture water and cleaning water from both Enthalpy Analytical and Aquatic Research Organisms, Inc., a separate business.

The Taylor River (Assessment Unit ID NHEST600031003-02, is approximately 0.0472 square miles in Hampton, New Hampshire, and is part of the Piscataqua-Salmon Falls Watershed. The river originates at the Taylor River Reservoir and discharges into the Hampton River and then into Hampton Harbor. At this point, the tidal waters of Hampton Harbor flow to the Gulf of Maine.

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.

For protected species under jurisdiction of the USFWS, one threatened mammal, the northern long-eared bat (*Myotis septentrionalis*) and two listed shore bird species have been documented in the general area of the discharge around Hampton Harbor. The birds are the piping plover (*Charadrius melodus*) and the rufa red knot (*Calidris canutus rufa*), both listed as threatened[9].

According to the USFWS, the threatened northern long-eared bat occurs statewide and is found in "winter – mines and caves; summer – wide variety of forested habitats". This species is not aquatic, so the Facility discharge will have no direct effect on this mammal. Further, the permit action is also expected to have no indirect effect on the species because it is not expected to impact insects, the primary prey of the northern long-eared bat. Therefore, the proposed permit action is deemed to have no impact on this listed species.[10] Consultation with USFWS under Section 7 of the ESA is not required.

The piping plover is found along coastal sand and gravel beaches in the northeast from March to August. They eat mainly insects, marine worms, and crustaceans. The population is threatened

[9] See §7 resources for USFWS at https://ecos.fws.gov/ipac/.
[10] See USFWS Information for Planning and Construction Database for more information: https://ecos.fws.gov/ipac/location/index

from habitat loss and degradation due to coastal development and stabilization, as well as predation and human disturbance.

The rufus red knot can be seen along the coast of New Hampshire in the spring and fall, as it migrates from summer breeding grounds on the tundra of the Canadian arctic to wintering sites in South America and the southern US. This bird is one of the longest-distance migrants in the animal kingdom. It feed on invertebrates, especially small clams, mussels, and snails, but also crustaceans, marine worms, and horseshoe crab. Pressures on the species include coastal development and overharvest of the horseshoe crab.

As described previously, the Enthalpy Analytical outfall is located in the Taylor River. The river at this point meanders approximately 2 miles through a tidally influenced marsh area before it reaches the Hampton River. The Hampton River flows another 1.5 miles before reaching Hampton Harbor. At this point, the tidal waters of Hampton Harbor meet the Gulf of Maine. The outfall pipe is approximately 3.5 miles from the expected shoreline habitat of the piping plover and rufus red knot. In addition, the marsh outfall experiences a high dilution (97.9:1) at the point of discharge and, since it is perpetually submerged, does not come in contact with the sandy shore intertidal fish, worms and crustaceans that these birds feed on. Based on this assessment, EPA has determined that these USFWS federally protected shorebird species, as well as their prey, are not present in the action area. Therefore, consultation with USFWS under Section 7 of the ESA is not required.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in coastal New Hampshire and Massachusetts waters. Various life stages of protected fish and sea turtles may possibly be found approximately one mile downstream from the outfall in this tidally influenced inlet. These species include Atlantic sturgeon (*Acipenser oxyrinchus*) adult and subadult life stages, shortnose sturgeon (*Acipenser brevirostrom*) adults and protected sea turtles including adult and juvenile life stages of leatherback sea turtles (*Dermochelys coriacea*), loggerhead sea turtles (*Caretta caretta*), Kemp's ridley sea turtles (*Lepidochelys kempii*) and green sea turtles (*Chelonia mydas*) .[11]

EPA conducted more focused analysis regarding the presence or absence of these protected species in the action area. Based on this analysis, the Taylor River and the Hampton River are not identified as habitat for the two sturgeon species and four sea turtle species.[12] This information, coupled with the characteristics of the outfall (e.g. 3.5 miles upstream from potential habitat, a multiport diffuser positioned in the center of the channel and a calculated dilution factor of 97.9:1) supports EPA's determination that the Facility's discharge is not expected to negatively impact the coastal protected species. Based on the normal distribution of these species, it is unlikely that any of the NOAA Fisheries listed species identified in New Hampshire coastal waters would be expected to be present in the vicinity of the action area. Therefore, consultation with NOAA Fisheries under Section 7 of the ESA is not required.

[11] See NOAA: ESA Section 7 Mapper for more information: https://www.fisheries.noaa.gov/resource/map/greater-atlantic-region-esa-section-7-mapper
[12] https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater#species-tables

At the beginning of the public comment period, EPA notified 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.

Initiation of consultation is required and shall be requested by the EPA or by 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". 16 U.S.C. § 1855(b).

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

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 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.

Based on a review of the relevant essential fish habitat information provided by NOAA Fisheries, EPA has determined that the Taylor River and Hampton River at Latitude 42º 55' 50" N, Longitude 71º 8' 22", W is covered by the following EFH designation.[13] This designation identifies 15 federally managed species. The EFH species and life stages are listed in Table 2.

Table 1: EFH Species and life stages in the vicinity of Enthalpy Analytical.

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Wolffish	ALL
Winter Flounder	Eggs, Juvenile, Larvae/Adult
Little Skate	Juvenile, Adult

[13] NOAA EFH Mapper available at http://www.habitat.noaa.gov/protection/efh/efhmapper/

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Herring	Juvenile, Adult, Larvae
Atlantic Cod	Larvae, Eggs
Pollock	Juvenile, Eggs, Larvae
Red Hake	Adult, Eggs/Larvae/Juvenile
Windowpane Flounder	Adult, Larvae, Eggs, Juvenile
White Hake	Adult, Eggs, Juvenile
Northern Shortfin Squid	Adult
Longfin Inshore Squid	Juvenile, Adult
Atlantic Mackerel	Eggs, Larvae, Juvenile
Bluefish	Adult, Juvenile
Atlantic Butterfish	Adult
Spiny Dogfish	Sub-Adult Female, Adult Male, Adult Female

6.2.1 EPA's Finding of all Potential Impacts to EFH Species

- The culture water discharged from the Facility is associated with species selected for their sensitivity to toxicity.

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;

- Acute toxicity tests will be conducted once a year to ensure that the discharge does not present toxicity problems;

- Total suspended solids, total residual chlorine, fecal coliform, *Enterococci* bacteria and pH are regulated by the Draft Permit to meet water quality standards;

- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;

- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life; and

- The Draft Permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within Enthalpy Analytical's Draft Permit adequately protects all aquatic life, including those species with designated EFH 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 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 and sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

6.3 The Coastal Zone Management Act

The Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 et seq., and its implementing regulations (15 CFR Part 930) require a determination that any federally licensed or permitted activity affecting the coastal zone with an approved Coastal Zone Management Program (CZMP) is consistent with the enforceable policies of the CZMP. EPA is prohibited from issuing a NPDES permit for any activity affecting any land or water use or natural resource of the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification or the Secretary of Commerce overrides the State's nonconcurrence.

In New Hampshire, the New Hampshire Coastal Program (NHCP) – 222 International Drive, Suite 175, Portsmouth, NH 03801 – is responsible for issuing federal consistency decisions. The Permittee has submitted the required federal consistency certification and necessary data and information to the NHCP. The Permittee and the NCP agreed to stay the 6-month CZMA federal consistency review timeline until either a final decision on permit renewal is made or the stay expires on March 8, 2021. EPA expects the NHCP will find the discharge consistent with the CZMA and its enforceable policies.

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 and the State Agency 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, the 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, the 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.

December 15, 2020

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

Figures

Figure 1: Location Map

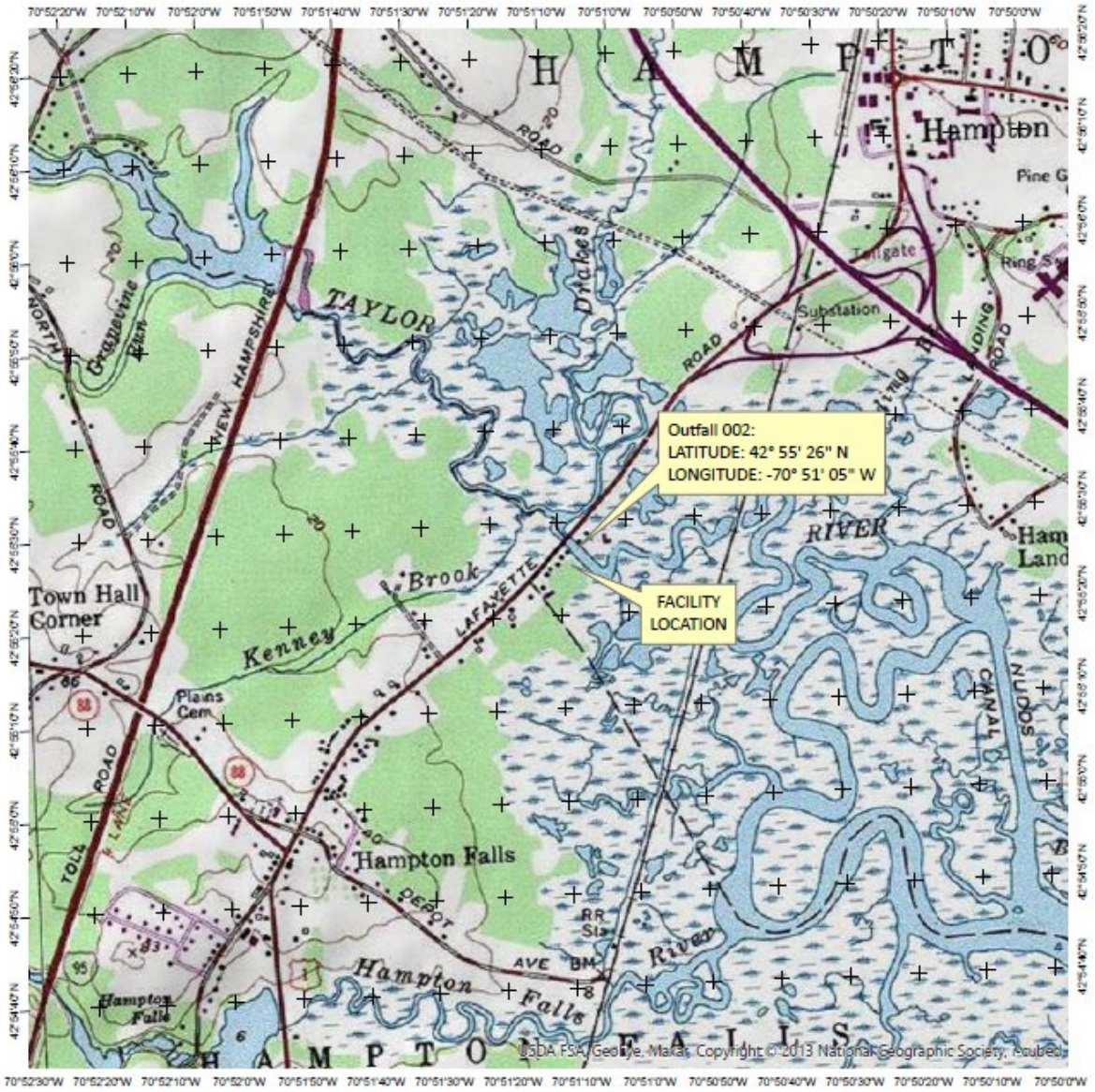


FIGURE 1
Site Location Map

Hampton, NH

Scale 1:17,476
0 360 720 Meters
0 720 1,440 2,160 Feet

Regulated Facilities: EPA

EPA
4/13/2020

Figure 2: Site Plan

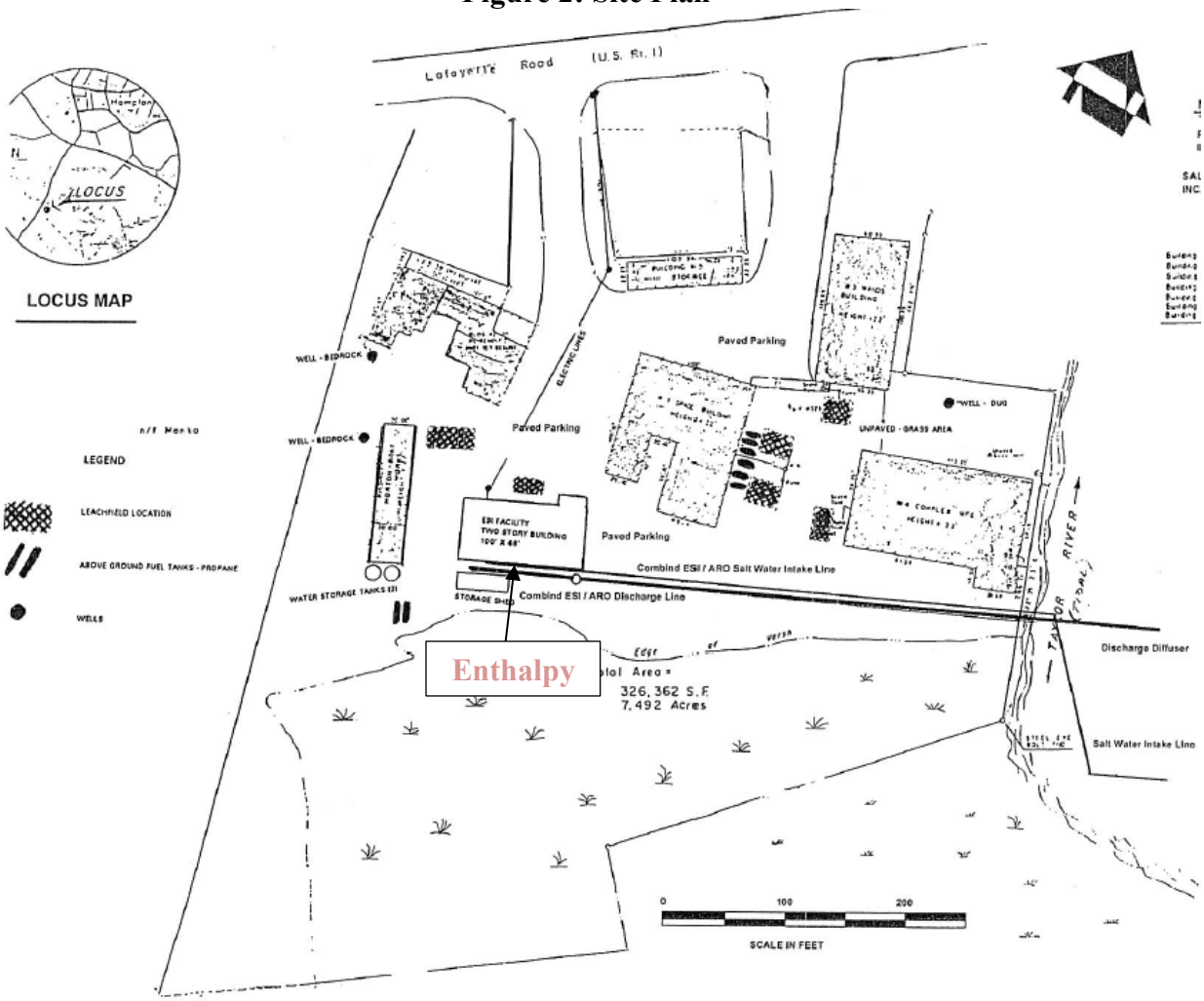
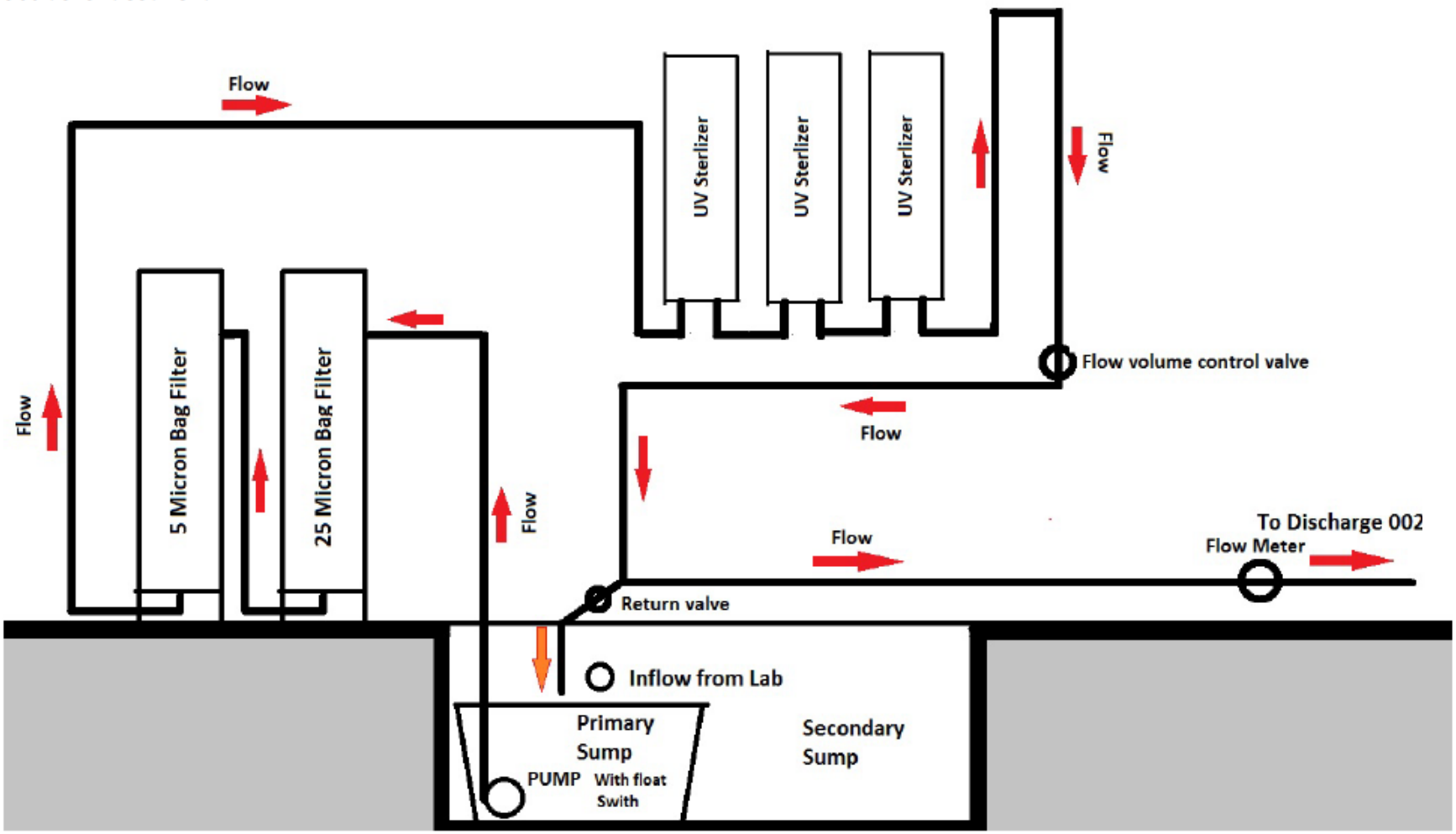


Figure 3: Schematic of Water Flow



Appendices

Appendix A: Discharge Monitoring Data

ENTHALPY ANALYTICAL **Outfall Serial Number 002-1-A** **Monthly Effluent Monitoring**						
Parameter	**Flow**	**Flow**	**TSS**	**TSS**	**pH**	**pH**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Daily Max**	**Minimum**	**Maximum**
Units	**gal/d**	**gal/d**	**mg/L**	**mg/L**	**SU**	**SU**
Effluent Limit	**Report**	**7000**	**Report**	**50**	**6.5**	**8.25**
Minimum	**380**	**1164**	**1.8**	**1.25**	**6.81**	**7**
Maximum	**5134**	**10626**	**64.6**	**210**	**7.72**	**9.05**
Median	**1539.5**	**3549.5**	**9.15**	**17**	**7.4**	**7.91**
No. of Violations	**N/A**	**4**	**N/A**	**6**	**0**	**3**
Monitoring Period End Date						
4/30/2015	1489	2798	9.1	16	7.66	7.91
5/31/2015	1037	1835	8.9	20	7.3	8.14
6/30/2015	2285	4627	9.1	16	7.65	8.18
7/31/2015	3081	5760	12.1	26	7.26	7.88
8/31/2015	2555	4419	8.6	17	6.88	8.01
9/30/2015	1865	3928	7.8	14	7.58	7.91
10/31/2015	1488	3517	8.1	16	7.68	7
11/30/2015	927	1717	8.2	11	7.4	7.9
12/31/2015	2379	4056	10.8	22	7.26	7.95
1/31/2016	1839	4171	11.7	25	6.97	7.91
2/29/2016	864	1410	12.1	38	6.96	**9**
3/31/2016	772	1680	25.4	**75**	7.4	7.95
4/30/2016	1001	3238	16.3	**56**	7.27	8.07
5/31/2016	1327	3487	7.7	19	7.23	7.82
6/30/2016	1804	3004	4.1	5.9	6.93	7.88
7/31/2016	1563	4532	5	1.25	7.23	7.91

8/31/2016	1227	4221	4.2	4.7	7.32	**8.31**
9/30/2016	2456	3422	22.7	49	7.43	7.89
10/31/2016	2155	3995	6.5	9.4	7.58	8.11
11/30/2016	3817	**7565**	9.9	13	7.43	7.91
12/31/2016	3759	**10274**	26.5	**100**	7.31	7.89
1/31/2017	1514	2882	16	48	7.14	7.86
2/28/2017	1105	2089	14.4	47	7.58	7.85
3/31/2017	959	3119	9.2	19	7.61	7.91
4/30/2017	1750	3597	18.4	**54**	7.4	7.95
5/31/2017	1508	2494	8.7	16	7.41	8.03
6/30/2017	824	2105	3	3.4	7.33	7.84
7/31/2017	1078	2198	1.8	2.4	7.36	7.92
8/31/2017	1554	3230	2	4.2	7.5	7.87
9/30/2017	2702	4426	4.3	13	7.67	7.88
10/31/2017	1420	3243	4.7	6	7.38	7.85
11/30/2017	2459	4479	6.1	10	7.6	7.91
12/31/2017	2076	3685	9.4	12	7.37	7.81
1/31/2018	2165	4283	20.1	24	7.45	7.85
2/28/2018	1184	2668	17.2	39	7.46	7.78
3/31/2018	1149	3214	24.5	39	7.46	7.89
4/30/2018	2939	4228	13	20	7.68	7.93
5/31/2018	2962	5600	21.3	43	7.68	7.93
6/30/2018	3580	6856	64.3	**170**	7.64	8.02
7/31/2018	1242	3033	10.9	17	7.65	7.84
8/31/2018	1454	2301	7.2	9	7.6	7.99
9/30/2018	1312	3582	13.5	38	7.25	7.88
10/31/2018	1010	1817	9	15	7.59	**9.05**
11/30/2018	1188	3268	13	25	7.67	7.99
12/31/2018	1013	2356	7.7	14	7.12	7.94
1/31/2019	413	1327	3.9	5.9	6.81	7.84
2/28/2019	380	1164	14.7	34	7.12	7.64

3/31/2019	1525	4360	3.6	6.3	7.24	7.88
4/30/2019	2459	4604	7.4	17	7.28	7.91
5/31/2019	3240	5867	8.8	28.5	7.55	7.92
6/30/2019	3131	4497	5.2	9	7.72	7.89
7/31/2019	1011	3004	4.6	8.5	7.32	7.91
8/31/2019	2682	6531	64.6	**210**	7.4	7.86
9/30/2019	2394	6706	10.4	29	7.46	7.94
10/31/2019	1127	2815	9.3	14	7.03	8.13
11/30/2019	3623	5890	10.2	21	7.26	7.84
12/31/2019	3719	6087	7.4	13	7.33	7.93
1/31/2020	3559	**10626**	4.4	5	7.49	7.88
2/29/2020	1161	2660	16	45	7.31	7.86
3/31/2020	5134	**7237**	9.4	16	7.59	7.99

ENTHALPY ANALYTICAL
Outfall Serial Number 002-1-A
Monthly Effluent Monitoring – Continued

Parameter	**Enterococci**	**Enterococci**	**Fecal Coliform**	**Fecal Coliform**	**Coliform, fecal - % sample exceeds limit**
	Monthly Avg	**Daily Max**	**Monthly Geometric Mean**	**Daily Max**	**MO MAX**
Units	**#/100mL**	**#/100mL**	**#/100mL**	**#/100mL**	**%**
Effluent Limit	**Report**	**Report**	**14**	**Report**	**10**
Minimum	**0.7**	**0**	**0.2**	**0**	**0**
Maximum	**94**	**2207**	**9.1**	**2420**	**14.3**
Median	**3.1**	**34**	**1.8**	**28**	**0**
No. of Violations	**N/A**	**N/A**	**0**	**N/A**	**2**
Monitoring Period End Date					
4/30/2015	25.1	239	0.6	8	NODI:
5/31/2015	4.8	53	1	374	NODI:

6/30/2015	5.9	41	0.8	22	NODI:
7/31/2015	2	16	0.8	23	NODI:
8/31/2015	3.9	35	0.5	15	NODI:
9/30/2015	0.7	117	1.9	103	NODI:
10/31/2015	1.1	11	1.4	176	NODI:
11/30/2015	4.2	2000	2.3	51	NODI:
12/31/2015	0.7	5	0.4	5	NODI:
1/31/2016	7.4	2000	7.6	2000	NODI:
2/29/2016	3.1	140	2	1760	NODI:
3/31/2016	10.4	44	6.5	2000	NODI:
4/30/2016	33.8	1000	2.4	2000	NODI:
5/31/2016	94	2207	0.6	22	NODI:
6/30/2016	4.6	52	0.2	8	NODI:
7/31/2016	7.6	58	1.2	59	NODI:
8/31/2016	3.8	49	1.4	18	NODI:
9/30/2016	5.6	490	1.6	29	NODI:
10/31/2016	14.7	2000	2.3	77	NODI:
11/30/2016	4.5	413	0.7	680	NODI:
12/31/2016	1.8	25	0.4	12	NODI:
1/31/2017	2.2	52	1.1	3	NODI:
2/28/2017	8.2	900	1.3	12	NODI:
3/31/2017	1.1	2	2.2	27	NODI:
4/30/2017	2.7	17	3.6	2000	4.5
5/31/2017	1.3	15	2.2	34	0
6/30/2017	2.6	110	3.1	136	4.5
7/31/2017	1.1	2	1.3	23	0
8/31/2017	1	1	1.7	19	0
9/30/2017	1	1	1.5	14	0
10/31/2017	1.1	2	1.5	27	0
11/30/2017	1.9	15	1.7	16	0
12/31/2017	3.1	168	1.3	8	0
1/31/2018	1.1	2	1.1	10	0
2/28/2018	1.4	2	2.1	30	0

3/31/2018	5.2	31	5.6	2000	4.5
4/30/2018	1.3	5	1.7	16	0
5/31/2018	3	31	2.6	21	0
6/30/2018	5	31	5.7	31	0
7/31/2018	1.7	31	5.1	29	0
8/31/2018	1.1	3	5.1	31	0
9/30/2018	2.6	51	1.7	12	0
10/31/2018	4.4	32	4	40	0
11/30/2018	3.3	31	9.1	2000	**13.6**
12/31/2018	2.6	27	5.6	36	0
1/31/2019	8.4	2000	1.7	27	0
2/28/2019	12.9	33	2.5	32	0
3/31/2019	4.6	32	2.4	12	0
4/30/2019	4.2	<= 5000	2.5	<= 5000	4.8
5/31/2019	2.2	30	4.9	27	0
6/30/2019	17.2	1413.6	1.7	9.6	0
7/31/2019	4.6	1145	3.2	38.9	0
8/31/2019	3.8	20	2.1	99	9.1
9/30/2019	1.7	131	1.5	12	0
10/31/2019	6.9	881	3	165	4.3
11/30/2019	2.8	51	5.2	2420	10
12/31/2019	3.8	31	3.9	687	9.5
1/31/2020	3.07	397	1.24	12	0
2/29/2020	1.8	10	4.9	55.6	**14.3**
3/31/2020	3	266	1.6539	10	0

ENTHALPY ANALYTICAL
Outfall Serial Number 002-1-B
Yearly Whole Effluent Toxicity Reporting

Parameter	LC50 Acute Menidia	LC50 Mysid. Bahia	Ammonia	Cadmium	Copper	Lead	Nickel	Zinc

	Daily Min	Daily Min	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**
Effluent Limit	**100**	**100**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**100**	**100**	**0.021**	**0**	**0**	**0**	**0**	**0.0041**
Maximum	**100**	**100**	**0.23**	**0.0077**	**0.016**	**0.005**	**0.001**	**0.059**
Median	**100**	**100**	**0.12**	**0.0003**	**0.004**	**0.0003**	**Non-Detect**	**0.014**
No. of Violations	**0**	**0**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date								
9/30/2013	100	100	0.12	0.0005	0.016	0.004	< .002	0.059
9/30/2014	100	100	0.23	0.00025	0.003	0.0007	0.001	0.011
9/30/2015	100	100	0.05	0.0003	0.003	0.0003	0.001	0.006
9/30/2016	100	100	0.033	0.003	<= .001	0.005	<= .001	0.017
9/30/2017	100	100	0.021	< .0005	0.004	< .0005	< .002	0.0041
9/30/2018	100	100	0.21	0.0077	0.0099	<= .00025	<= .001	0.02
9/30/2019	100	100	0.15	< .0001	0.007	0.0003	0.001	0.014

Notes:

MGD = million gallon per days
mg/L = milligrams per liter
SU = standard units
#/100mL = number per 100 milliliters
< value = parameter not detect above “value”
0 = parameter not detected
N/A = not applicable
NODI: = No data indicator
Red text = indicates permit limit exceedance

Appendix B: Reasonable Potential Analysis

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 detection limits). EPA used this methodology to calculate the 95th percentile.

EPA uses the dilution factor, the calculated upper bound of the effluent data and a concentration representative of the parameter in the receiving water outside of the zone of influence of the discharge to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$C_s(DF - 1) + C_e = C_d(DF)$$

Where:

C_d = downstream concentration
C_s = upstream concentration (median value of available ambient data)
C_e = effluent concentration (95th percentile of effluent concentrations)
DF = dilution factor (See Available Dilution section of the Fact Sheet)

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

$$C_d = \frac{C_s(DF - 1) + C_e}{DF}$$

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 both the downstream 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 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 (C_e) using the applicable criterion as the downstream concentration (C_d). *See* 40 CFR § 122.44(d)(1)(iii). Where ambient data is unavailable, the upstream concentration is assumed equal to zero. EPA did not have ambient monitoring data for the Taylor River; monitoring requirements in the Draft Permit aim to fill this data gap.

Determination of Applicable Criteria

EPA notes that the State of New Hampshire adopted new criteria into their WQSs in December 2016 and submitted them to EPA for review and approval. Although the new criteria have not yet been approved by EPA, this demonstration utilizes the new criteria in anticipation of a state certification to do so. State water quality criteria for toxic substances are found in Env-Wq 1703.21, Table 1703-1. For metals, state criteria are expressed as dissolved metals, while permit limits are set as total recoverable metals. For converting between dissolved and total recoverable metals, see Env-Wq 1703.23 and for the applicable discussions of acute and chronic ammonia criteria see Env-Wq 1703.27 and Env-Wq 1703.30, respectively. Due to the lack of ambient receiving water data, input parameters of pH and temperature, required to calculate ammonia criteria, representing extreme hydrogeochemical conditions were chosen to derive conservative values (receiving water pH = 8.25 S.U. and temperature = 35°C). The applicable criteria are summarized in the table below.

Summary of Applicable Criteria

Parameter	Acute Criteria			Chronic Criteria		
	State Criteria	Conversion Factor	Applicable Criteria * 0.9	State Criteria	Conversion Factor	Applicable Criteria * 0.9
Ammonia Nitrogen as N	1.2 mg/l	--	1.1 mg/l	0.20 mg/l	--	0.18 mg/l
Cadmium	33 µg/l	0.994	29.9 µg/l	7.9 µg/l	0.994	7.2 µg/l
Copper	4.8 µg/l	0.830	5.2 µg/l	3.1 µg/l	0.830	3.4 µg/l
Lead	210 µg/l	0.951	198.7 µg/l	8.1 µg/l	0.951	7.7 µg/l
Nickel	74 µg/l	0.990	67.3 µg/l	8.2 µg/l	0.990	7.5 µg/l
Zinc	90 µg/l	0.946	85.6 µg/l	81 µg/l	0.946	77.1 µg/l

Calculation of Reasonable Potential

Data used to estimate the expected effluent concentrations was limited to seven sampling events. Data provided by the Permittee prior to 2013 was reported in inconsistent and potentially erroneous units and was not used in the following calculations. No ambient monitoring data was available for the receiving water, so the upstream concentration was assumed equal to zero. EPA first calculated

the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations and the dilution allowance 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	Effluent Concentration[1]	Acute Downstream Concentration[2]	Chronic Downstream Concentration[2]	Acute Criterion * 0.9	Chronic Criterion * 0.9	Acute Reasonable Potential[3]	Chronic Reasonable Potential[3]
Units	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**—**	**—**
Ammonia	460	4.6	4.7	1,100	180	N	N
Cadmium	15.4	0.2	0.2	29.9	7.2	N	N
Copper	32.0	0.3	0.3	5.2	3.4	N	N
Lead	10.0	0.1	0.1	198.7	7.7	N	N
Nickel	2.0	0.0	0.0	67.3	7.5	N	N
Zinc	118	1.2	1.2	85.6	77.1	N	N

[1] Values represent the maximum concentration observed in the monitoring data reported by the Facility (*See* Appendix A).
[2] Values represent the maximum observed concentration divided by the dilution factor 97.9 for acute and 100 for chronic.
[3] "Y" is indicated if downstream concentration exceeds the applicable criterion, "N" is indicated if it does not.

No parameters have a reasonable potential to cause or contribute to an excursion above water quality standards.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY-REGION 1 (EPA)
WATER DIVISION
5 POST OFFICE SQUARE
BOSTON, MASSACHUSETTS 02109

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

JOINT EPA PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO WATERS OF THE UNITED STATES UNDER SECTION 402 OF THE CLEAN WATER ACT (CWA), AS AMENDED; 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: **December 15, 2020 – January 29, 2021**

PERMIT NUMBER: **NH0022055**

PUBLIC NOTICE NUMBER: **NH-001-21**

NAME AND MAILING ADDRESS OF APPLICANT:

Enthalpy Analytical
1 Lafayette Road, Unit 6
Hampton, NH 03843-0778

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Enthalpy Analytical
1 Lafayette Road, Unit 6
Hampton, NH 03843-0778

RECEIVING WATER AND CLASSIFICATION:

Taylor 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 Enthalpy Analytical, which discharges treated wastewater from culturing organisms and conducting bioassays. 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 January 29, 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

THOMAS E. O'DONOVAN, DIRECTOR
WATER DIVISION
NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES