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"),

Patriot Beverages, LLC
25 Copeland Drive
Ayer, MA 01432

is authorized to discharge from a facility located at

Patriot Beverages
20 Harvard Road
Littleton, MA 01833

to receiving water named

Unnamed Tributary to Reedy Meadow Brook
Segment MA84B-01
Merrimack River Watershed

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

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

This Permit expires at midnight on [DATE].

This Permit supersedes the Permit issued on September 19th, 2013.

This permit consists of **Part I** including the cover page, **Attachment A** (Freshwater Acute Toxicity Test Procedure and Protocol, February 2011), **Attachment B** (Freshwater Chronic Toxicity Test Procedure and Protocol, March 2013), **Attachment C** (WET guidance), **Attachment D** (PFAS Analyte List), and **Part II (**NPDES Part II Standard Conditions, April 2018).

Signed this day of

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

[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 process wastewater, composed of concentrated syrup waste, beverage processing and clean-in-place (CIP) waste, reverse osmosis system (RO) reject water, contact cooling water, non-contract cooling water, stormwater runoff connected to the WWTP, and beverage product wastewater[1] from the bottling facility through Outfall Serial Number 001 to Reedy Meadow Brook. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Effluent Flow[7]	0.55 MGD	0.75 MGD	Continuous	Recorder
pH[8]	6.5 - 8.3 S.U.		1/Day	Grab
Total Suspended Solids (TSS)	10 mg/L	20 mg/L	1/Week	Composite
Biochemical Oxygen Demand (BOD_5)	10 mg/L	20 mg/L	1/Week	Composite
Temperature	---	83°F	1/Week	Grab
Total Residual Chlorine (TRC)[9]	12 µg/L	21 µg/L	1/Week	Grab
Total Phosphorus (April 1-October 31)[10]	0.23 lbs/day Report mg/l	1.25 lbs/day Report mg/l	1/Week	Composite
Total Phosphorus (November 1-March 31)[10]	0.46 lbs/day Report mg/L	1.25 lbs/day Report mg/L	1/Week	Composite
Ammonia Nitrogen	Report lbs/day Report mg/L	Report lbs/day Report mg/L	1/Month	Composite

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Dissolved Oxygen (DO)	---	>7.0 mg/L	1/Week	Grab
Oil & Grease	---	15 mg/L	1/Quarter	Grab
Total Recoverable Aluminum [11]	0.1 mg/L	Report mg/L	1/Quarter	Composite
Total Recoverable Copper[12]	0.012 mg/L	0.019 mg/L	2/Month	Composite
E. Coli (April 1- October 31)[13]	126 cfu/ 100 mL	410 cfu/ 100 mL	1/Month	Grab
Enterococci (April 1- October 31)[13]	35 cfu/ 100mL	130 cfu/ 100 mL	1/Month	Grab
Priority Pollutants[14]	Report ug/L	Report ug/L	1/Year	Composite
PFAS Analytes[15]	---	Report ng/L	1/Quarter	Grab
Adsorbable Organic Fluorine[16]	---	Report ng/L	1/Quarter	Grab
Whole Effluent Toxicity (WET) Testing[17,18,19]				
LC_{50}	---	100 %	1/Quarter	Composite
C-NOEC	---	91%	1/Quarter	Composite
Hardness	---	Report mg/L	1/Quarter	Composite
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Composite
Total Aluminum	---	Report mg/L	1/Quarter	Composite

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Total Cadmium	---	Report mg/L	1/Quarter	Composite
Total Copper	---	Report mg/L	1/Quarter	Composite
Total Nickel	---	Report mg/L	1/Quarter	Composite
Total Lead	---	Report mg/L	1/Quarter	Composite
Total Zinc	---	Report mg/L	1/Quarter	Composite

Ambient Characteristic[20]	Reporting Requirements		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
Hardness	---	Report mg/L	1/Quarter	Grab
Ammonia Nitrogen	---	Report mg/L	1/Quarter	Grab
Total Aluminum	---	Report mg/L	1/Quarter	Grab
Total Cadmium	---	Report mg/L	1/Quarter	Grab
Total Copper	---	Report mg/L	1/Quarter	Grab
Total Nickel	---	Report mg/L	1/Quarter	Grab
Total Lead	---	Report mg/L	1/Quarter	Grab
Total Zinc	---	Report mg/L	1/Quarter	Grab

Ambient Characteristic[20]	Reporting Requirements		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
pH[21]	---	Report S.U.	1/Quarter	Grab
Temperature[21]	---	Report °F	1/Quarter	Grab

Sludge Characteristic	Reporting Requirements		Monitoring Requirements[2,3,4]	
	Average Monthly	Maximum Daily	Measurement Frequency[5]	Sample Type[6]
PFAS Analytes[15]	---	Report mg/L	1/Quarter	Grab

Footnotes:

1. This beverage wastewater includes beverage wastewater from two local manufacturers. See Part I.C.1 of this permit for the provision which allows for the use of such wastewater in the permittee's biological treatment system and the procedure which the permittee needs to follow to receive approval for the use of beverage wastewater from another facility during this permit term. The permittee shall report the total amount of off-site beverage wastewater that it uses in its treatment system for each month in its Discharge Monitoring Report (DMR) cover letter.

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

3. 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.

4. 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).

5. Measurement frequency of continuous is defined as the continuous measurement of an analyte using a recording device such as a flow meter. Measurement frequency of 1/day is defined as the recording of one measurement for each 24-hour period. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

6. 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.

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

8. 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.).

9. Monitoring for total residual chlorine (TRC) is only required for discharges that have been previously chlorinated or that contain residual chlorine. For the purposes of this permit, TRC analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 30 µg/L. The compliance level for TRC is 30 µg/L.

10. The year round, daily maximum limit for phosphorus of 1.25 pounds per day is based on the concentration level of 0.2 mg/l and the maximum daily flow limit of 0.75 MGD. The monthly average phosphorus limit of 0.46 pounds per day for the period of November 1 through March 31 is based on the concentration level of 0.1 mg/l and the monthly average flow limit of 0.55 MGD.

    For the period of April 1 through October 31, the monthly average phosphorus limit of 0.23 pounds per day is based on the concentration level of 0.05 mg/l and the monthly average flow of 0.55 MGD. This limit is expressed as a sixty (60) day rolling average limit.

    The 60-day rolling average should be calculated as follows:

Beginning on the 60th day after April 1 (May 31), the 60-day average value shall be calculated for each week that sampling is conducted and the highest 60-day average value for that month must be reported on the monthly discharge monitoring report (DMR).

Additionally, for the months of April and May, the monthly average total phosphorus shall be reported.

Consistent with Section B.1 of Part II of the Permit, the Permittee shall properly operate and maintain the phosphorus removal facilities in order to obtain the lowest effluent concentration possible. The minimum level (ML) for phosphorus is defined as 10 ug/l. This value is the ML for phosphorus using EPA approved methods found in the most currently approved versions of Standard Methods for the Examination of Water and Wastewater. One of these methods must be used to determine total phosphorus. Sample results of less than 10 µg/l shall be reported as zero on the DMR.

11. Aluminum analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level no greater than 87 µg/L.

12. As these are new limits, there is a compliance schedule which delays the effective date of these limits for one year from the effective date of the final permit. In the interim period, the permittee will be required to monitor copper twice a month and report the results for monthly average and maximum daily.

13. The monthly average limits for *Enterococcus* and *E. Coli* are expressed as geometric means.

    As these are new limits, there is a compliance schedule which delays the effective date of these limits for one year from the effective date of the final permit. In the interim period, the permittee will be required to monitor both *Enterococci and E. coli* once a month and report the results in cfu/100 mL for monthly average and maximum daily.

14. A priority pollutant scan shall be conducted once per year during the second calendar quarter of the year (April through June) and during a period when any approved, off-site beverage wastewater is being used in the permittee's treatment system. The results of this scan shall be submitted with the June DMR. These submittals shall include all test results. The list of parameters to be tested can be seen at 40 CFR Part 423, Appendix A.

15. Per- and polyfluoroalkyl substances (PFAS) analytes include those listed in Attachment E (40 parameters) and are listed separately in NetDMR. Report in

nanograms per liter (ng/L). In the absence of an applicable 40 CFR Part 136 method, PFAS monitoring shall be conducted using EPA Draft Method 1633. The reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following six months after the effective date of the permit. After one year of monitoring, if all samples are non-detect for all forty PFAS compounds, the Permittee may request to remove the requirement for PFAS monitoring. See Special Condition in Part I.C.6.

16. Report in nanograms per liter (ng/L). Until there is an analytical method approved in 40 CFR Part 136 for Adsorbable Organic Fluorine, monitoring shall be conducted using Method 1621. This reporting requirement takes effect the first full calendar quarter following six months after the effective date of the Permit.

17. The Permittee shall conduct acute toxicity tests (LC_{50}) and chronic toxicity tests (C-NOEC) 4/year in accordance with test procedures and protocols specified in **Attachments A and B** of this permit. LC_{50} and C-NOEC are defined in Part II.E. of this permit. The Permittee shall test the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal that includes the results for that toxicity test.

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

19. For the purpose of conducting the toxicity tests on the fathead minnow, Pimephales promelas, alternate dilution water (ADW) may be used. For ADW, the permittee may use laboratory water as diluent and such diluent shall have characteristics such as hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids that are similar to those of the receiving water and that shall not illicit a toxic response. ADW tests must be run with a minimum of two controls: a receiving water (Reedy Meadow Brook) control and a toxicity-free alternate dilution water control. Chemical data of the receiving water control, including data for all metals listed in the protocol, must be included in the WET report. The use of ADW must follow the guidance outlined in **Attachment C**.

20. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachments A and B**, Part VI. CHEMICAL ANALYSIS for the receiving

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

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

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge stormwater through internal Outfall Serial Number 002 to Reedy Meadow Brook. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3,4]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[5]**	**Sample Type[6]**
Flow[7]	Report MGD	Report MGD	Continuous	Recorder
Chemical Oxygen Demand (COD)	Report mg/L	Report mg/L	1/Month	Composite
Total Suspended Solids (TSS)	---	100 mg/L	1/Month	Composite
pH[8]	6.5 - 8.3 S.U.		3/Quarter	Grab
Oil & Grease	---	15 mg/L	1/Quarter	Grab
Total Phosphorus	Report mg/l	Report mg/l	1/Month	Composite

Footnotes:

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

2. A representative storm event grab sample shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least seventy-two (72) hours after a previously measurable (greater than 0.1 inches) storm event. Grab samples shall be collected within sixty (60) minutes after the initiation of such storm event. If there is no storm event that meets this definition for a particular month, the permittee shall report the "no discharge" (NODI) code of "9" on its DMR for that month.

3. 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.

4. 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).

5. Measurement frequency of continuous is defined as the continuous measurement of an analyte using a recording device such as a flow meter. Measurement frequency of 1/day is defined as the recording of one measurement for each 24-hour period. Measurement frequency of 1/week is defined as the sampling of one discharge event in each seven-day calendar week. Measurement frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Measurement frequency of 1/year is defined as the sampling of one discharge event during one calendar year. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

6. 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.

7. Effluent flow shall be reported in million gallons per day (MGD). Effluent flow monitoring shall be done by a recorder or equivalent instrument, measured by meter after passing through this filtration fabric in a vault labeled "S/N 002 monitoring point" and prior to being combined with the Outfall 001 discharge.

8. 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 S.U.

Part I.A. continued.

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

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

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

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

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

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

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfalls listed in Parts I.A.1 and I.A.2, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this Permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this Permit (24-hour reporting).

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

C. SPECIAL CONDITIONS

1. Requirements for Additional Off-site Beverage Water

The permittee is authorized to accept and store wastewater from two local beverage manufacturing facilities and to periodically add this wastewater to its biological treatment system, only as needed, in order to effectively provide the optimal conditions for treatment. The current providers of this wastewater are Epic Enterprises, Inc. and CPF, Inc. Upon accepting this water at its facility, this water becomes the responsibility of the permittee. In order to use wastewater from any other beverage manufacturer in its treatment system during this permit term, the permittee must provide to EPA and MassDEP information about the source of such water in advance including the name of the company, the range of its products, what type of tanker will be used to transfer such product, and any other uses for this tanker. The permittee shall also provide a priority pollutant scan of a sample of the beverage wastewater for which it is requesting approval for use in its treatment plant. At a minimum, this priority pollutant scan shall analyze for parameters listed in 40 CFR Part 423, Appendix A and the permittee shall include all test results with its submittal.

The permittee shall not introduce such wastewater into its treatment system before getting written approval by the EPA and MassDEP. Upon written approval of accepting such wastewater, the permittee may use this water in its treatment plant and assure that the combination of all beverage wastewaters used in the treatment plant does not cause or contribute to any permit limits violations. Only beverage wastewater shall be used from each approved facility and such water shall not be commingled with any other wastewater from each approved facility. An annual priority pollutant scan requirement is established in this permit to assess whether any parameters that were detected in any of the off-site beverage wastewater sources are detected in the effluent. This would allow EPA and MassDEP to determine whether any such pollutants would cause or contribute to any violation of instream WQS. The sampling for this scan shall be conducted during the period of April through June of each year and during a period when the facility is using any off-site beverage wastewater in its treatment system. The permittee is also required to record how much off-site beverage wastewater was used each calendar month and this amount shall be reported in each DMR.

2. Notice of Significant Change in Product Mix or Treatment System

The permittee shall notify EPA and MassDEP whenever it is planning to make a significant change to its raw ingredients or final product mix, or when it is planning

to undergo a change or addition to its treatment system that may alter the quality or composition of its discharges. Upon such notification, EPA and MassDEP will review the information and make a determination regarding whether or not any permit modification is necessary to address any such changes. This notification should be made as far enough in advance as possible in order for the agencies to have ample time to consider it and make the appropriate determination.

3. Best Management Practices (BMPs)

The Permittee shall design, install, and implement control measures to minimize the discharge of pollutants from the operations at the Facility to the receiving water. At a minimum, the Permittee must implement control measures, both structural controls (e.g., OWS, containment areas, holding tanks) and non-structural (e.g., operational procedures and operator training).

a. The Permittee must comply with the following limitations described in Part 2.1.2 and of EPA's Multi-Sector General Permit (MSGP):

(1) Minimize exposure of processing and material storage areas to stormwater discharges;
(2) Design good housekeeping measures to maintain areas that are potential sources of pollutants;
(3) Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
(4) Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur. The Permittee shall report immediately the appearance of any size sheen attributable to the discharge from the Terminal to the appropriate U.S. Coast Guard Officer in accordance with Section 311 of the Clean Water Act (CWA);
(5) Design of erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
(6) Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
(7) Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
(8) Conduct employee training to ensure personnel understand the requirements of this permit;
(9) Evaluate for the presence of non-stormwater discharges. Any non-stormwater discharges not explicitly authorized in the permit or covered by another NPDES permit must be eliminated.

(10) Minimize dust generation and vehicle tracking of industrial materials;

b. In addition to the general limitations described above, the Permittee must design, install, and implement the following BMPs:

(1) The Permittee shall comply with the inspection requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 4.1 through 4.5 of the 2021 MSGP.[2] For the purposes of this permit, the following must be included: areas exposed to stormwater, potential pollutant sources, discharge points, and control measures.

(2) The Permittee shall comply with the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the Permit that ensure dilution is not used as a form of treatment;

4. Stormwater Pollution Prevention Plan (SWPPP)

The Permittee shall develop a Stormwater Pollution Prevention Plan (SWPPP) to document the selection, design, and installation of control measures, including BMPs, selected to meet the effluent limitations required in this permit, and, with Parts 2.1.2, and 8.U.4 of the 2021 MSGP, to minimize the discharge of pollutants from the operations at the Facility to the receiving water. The SWPPP shall be a written document and consistent with the terms of this Permit.

a. The SWPPP shall be developed and signed consistent with the signatory requirements in Part II.D.2 of this Permit within 90 days after the effective date of this Permit.

b. The SWPPP shall be consistent with the general provisions for SWPPPs included in Part 5 of EPA's MSGP. The SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications. The SWPPP must identify potential sources of pollution that may reasonably be expected to affect the quality of the stormwater discharges and document the implementation of non-numeric technology based effluent limitations in Part I.C.1 that will be used to reduce the pollutants and assure compliance with this Permit, including any corrective action taken when non-compliance occurs. Specifically, the SWPPP shall contain the elements listed in Parts 5.2.1 through 5.2.5 of the 2015 MSGP and briefly described below:

(1) Stormwater pollution prevention team;

2 Where the MSGP refers to limitations, conditions or benchmarks, including the SWPPP, for the purposes of this Permit, these shall refer to the limitations and conditions in this Permit.

(2) Site description;
(3) Drainage area site map;
(4) Summary of potential pollutant sources;
(5) Description of all stormwater control measures; and
(6) Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

c. The Permittee shall amend and update the SWPPP within 14 days of any changes at the facility affecting the SWPPP. Changes that may affect the SWPPP include, but are not limited to: a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; a release of a reportable quantity of pollutants as described in 40 CFR § 302; a determination by the Permittee or EPA that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in stormwater discharges associated with industrial activity; and revisions or improvements are made to the stormwater management program based on new information and experiences with wet weather events. Any amended or new versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

d. The Permittee shall certify at least annually that the previous year's required inspections, corrective actions, control measures, and training activities were conducted, results were recorded, and records were maintained, as described. If the facility is not in compliance with any limitations and/or BMPs, the annual certification shall state the non-compliance and the remedies that are or will be undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee shall keep a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit at the Facility and shall make them available for inspection by EPA. All documentation of SWPPP activities shall be kept at the Facility for at least three years and provided to EPA upon request.

5. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution that was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this Permit, chemicals and/or additives that have been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this Permit 30 days following written

notification to EPA unless otherwise notified by EPA. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

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

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

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

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

7. After one year of monitoring, if all samples are non-detect for all forty PFAS compounds and AOF, using either a method in 40 CFR Part 136 or EPA Draft Method 1633, the Permittee may request to remove the requirement for PFAS monitoring. The written request shall include a summary of the monitoring data and include the attached analytical reports. Until written notice is received from EPA indicating that the monitoring requirements have been changed, the Permittee is required to continue the monitoring specified in Part I.D.3.a.(6) - Reporting Requirements.

D. REPORTING REQUIREMENTS

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

1. Submittal of DMRs Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

Unless otherwise specified in this Permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.D.5. for more information on State reporting. Because the due dates for reports described in this Permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month following the monitoring period), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the particular report due date specified in this Permit.

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

a. The following requests, reports, and information described in this Permit shall be submitted to the NPDES Applications Coordinator in EPA WD:

(1) Transfer of Permit notice;
(2) Request for changes in sampling location;
(3) BMP/SWPPP reports and certifications, if required;
(4) Request to discharge new chemicals or additives;
(5) Request for change in WET testing or discontinuation of per- and polyfluoroalkyl substances (PFAS) sampling (*see* Part I.A.1, footnote 14 and Part I.C.6.) 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.

4. Written Notifications

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

5. State Reporting

Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

Massachusetts Department of Environmental Protection
Bureau of Water Resources
Division of Watershed Management
8 New Bond Street
Worcester, Massachusetts 01606

6. Verbal Reports and Verbal Notifications

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

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

617-918-1510

c. Verbal reports and verbal notifications shall be made to the State's Emergency Response at:

888-304-1133

E. STATE 401 CERTIFICATION CONDITIONS

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

[NOTE: See Parts 2.2.5 and 5.3.5 of the Fact Sheet for more details regarding the State certification requirements.]

USEPA REGION 1 FRESHWATER ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

R1NPDESReporting@epa.gov

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

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

FRESHWATER CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL
USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

R1NPDESReporting@epa.gov

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

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

Notes:

1. Hardness may be determined by:

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

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

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

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

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

2. Test Variability (Test Sensitivity)

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

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

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

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

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

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

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

In addition to the summary sheets the report must include:

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

NPDES Whole Effluent Toxicity Testing, Monitoring and Reporting

This guidance is intended to promote compliance and enhance program efficiency and effectiveness. This is not intended to, nor does it, constitute rulemaking by EPA and may not be relied upon to create a right or a benefit, substantive or procedural, enforceable at law or in equity, by any person. This document was prepared for NPDES Permittees to: (1) clarify Whole Effluent Toxicity (WET) testing, monitoring and reporting requirements; (2) provide guidance; and (3) provide a list of EPA contacts available to answer questions.

TIPS:

1. **NPDES Permit Requirements**
   The sampling location, sample type, test frequency, test species, monitoring period, and reporting requirements are specified in Part I (and ATTACHMENTS) of the NPDES Permit. Read the NPDES Permit carefully. Permittees and analytical laboratories must adhere to Permit requirements and test protocols. The Permittee is responsible for data quality, data integrity and NPDES reporting. EPA recommends that the Permittee provide its testing laboratory with a copy of the entire NPDES Permit (i.e., Part I and ATTACHMENTS, and Part II "General Conditions") and any subsequent modifications together with any alternate dilution water authorization letters. Mistakes have been made in the past that could have been avoided if the bioassay laboratory had a copy of these documents.

2. **WET Tests Data Quality and Reporting**
   Carefully review bioassay test results and be sure that the data are valid (i.e., the minimum test requirements, test review requirements and test acceptability criteria (TAC) are met for EPA's standard and EPA-New England protocol) and are correctly reported on the DMR.

3. **WET Test Scheduling**
   Laboratories have scheduled WET tests using test organisms that are at or near the oldest acceptable age at test start. If this is done and there is a delay in sample delivery, the test organisms may be too old for use in the bioassay test when the sample arrives. This could create some scheduling difficulties or could require a contingency plan that includes a secondary emergency source of test organisms. It is suggested that Permittees ask whether laboratories have contingency plans for such situations.

GUIDANCE:

4. **WET Guidelines and Methods Manuals**

Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods; Final Rule (Federal Register: November 19, 2002, Volume 67, Number 223, Rules and Regulations pp. 69951-69972)

The most current methods manuals, posted at Web address www.epa.gov/waterscience/WET/, are as follows:

a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012;
b. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013;
c. Short-Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, EPA-821-R-02-014; and
d. Standard Methods for the Examination of Water and Wastewater, 21st Edition, 2005.

5. **WET Monitoring and Reporting**

EPA rejects WET test reports that do not follow Permit requirements, applicable protocols, and meet all minimum criteria for acceptability and variability of test results, and requires tests to be repeated until valid results are obtained. Results, valid or otherwise, must be submitted by the date specified in Part I of the NPDES Permit even if the test has to be repeated. Therefore, EPA recommends that sampling and testing be initiated early in the monitoring period prescribed by the Permit.

If a valid WET test is not completed by the reporting deadline, the Permittee must report the invalid test using the proper code on the DMR; the code is "H." The cover letter must explain the monitoring and reporting violation and indicate when the test will be repeated. A corrected DMR must be resubmitted once valid data are available, and the entire report submitted as required by the Permit. The report shall include, among other things, bench sheets to document that there was an invalid test and that the test was repeated.

6. **Sample Dechlorination**

The total residual chlorine concentration of the discharge sample shall be measured and, if detected, the sample shall be dechlorinated in the laboratory prior to WET testing in accordance with Standard Methods for the Examination of Water and Wastewater, 21st Edition, 2005 (see also Section VI, Region I Protocol). The total residual chlorine concentration of the discharge sample

must be reported and the dechlorination method described. When the sample is dechlorinated in the laboratory, an additional thiosulfate control (with the maximum amount of thiosulfate in the lab control or the receiving water control) must also be run. This information must also be included in the report.

7. **Sample Hold Time**
   Sample hold time must be consistent with that specified by test protocol. The holding times for the initial use of original or renewal sample is less than **24 hours** for on-site tests and less than **36 hours** for off-site tests as specified in the protocols unless a waiver is obtained in writing from EPA. In isolated cases where the test cannot be started within 36 hours of sample collection, data must be submitted to EPA and the State to demonstrate that the effluent toxicity of a sample is not reduced by extending the holding time beyond 36 hours. Subsequent to initial use of the original or renewal sample, samples may be used for test renewal at 24, 48 and 72 hours.

8. **Salinity Adjustment of the Effluent Sample**
   The Region's test protocols require the use of sea salts for salinity adjustment in every case.

9. **Age of the Test Organisms**
   The protocols specify what the age of the test organism must be at test initiation. Evidence to verify test organism age must be included in each report.

10. **Raw Data and Bench Sheets**
    Raw data and bench sheets must be included in the full report.

11. **Report Integrity and DMR Accuracy**
    WET test data summary tables must be consistent with the report text, data analyses, bench sheets; and DMRs. Report integrity and DMR accuracy are crucial, and are the responsibility of the Permittee.

12. **Data Analyses**
    Flow charts in the EPA acute and chronic WET test manuals must be followed so that the correct analyses are performed. Statistical program printouts and graphical displays (e.g. NOEC and LC50 calculations, etc.) must be submitted.

13. **Chronic Ceriodaphnia dubia Survival and Reproduction Test**
    The duration of the chronic Ceriodaphnia dubia survival and reproduction test must not exceed **eight** days. The minimum acceptability criteria for each test is measured and documented for all test controls. Offspring from the fourth or higher broods must not be included with test results. (See EPA-821-R-02-013, October 2002, p. 161.)

14. **Document Ongoing Laboratory Performance**
    As part of an in-house Quality Assurance program, each laboratory must perform reference toxicant tests on the test organisms it uses and must analyze the data

for the reported test endpoints. Reference toxicant testing must be performed monthly, or concurrently depending on test frequency, for each test endpoint, in accordance with the EPA Methods Manual. Reference toxicity tests are to be performed and interpreted according to the referenced EPA Method Manuals. (See EPA-821-R-02-013, Section 4.16.1, p. 15.) Reference toxicity test results and applicable control charts must be included in every report.

In the case where a reference toxicity test is performed concurrently with an effluent or receiving water test and the reference toxicity test results fall slightly outside the control limits established by the laboratory for the test endpoint and the primary test meets the test acceptability criteria, the primary test will be considered "conditionally" acceptable. However, if the results of a concurrently run reference toxicity test fall well outside the established upper control limits, the primary test will be considered unacceptable and must be repeated immediately. (See EPA-821-R-02-013, Section 4.16).

15. **Sampling Methods, Holding Times, and Preservation Techniques**
All sampling methods, holding times and preservation techniques must be consistent with 40 C.F.R. Parts 122 and 136. Note that EPA-approved test methods require that samples collected for metals analyses be preserved immediately after collection.

16. **Dilution Water**
The objective of the WET test is to estimate the toxicity of the effluent in uncontaminated receiving water. Ideally, a grab sample of receiving water must be collected immediately upstream and outside of the influence of the outfall for use as dilution water in the tests.

17. **Alternate Dilution Water**
EPA-New England has adopted a **species-specific, self-implementing policy** for switching to alternate dilution water use in WET tests where the receiving water is documented to be toxic or unreliable. The policy authorizes alternate dilution water use in the following two cases:
(1) when a WET test is repeated due to site water toxicity; and
(2) in future WET tests where there are two recent documented incidents of site water toxicity associated with a particular test species. The details of EPA-New England's species-specific, self-implementing policy is provided below.

Case (1): EPA-New England authorizes the use of an alternate dilution water for any WET test repeated due to site water toxicity. Additionally:

- The test must be repeated during the monitoring period specified by the Permit.
- The selected alternate dilution water must have characteristics such as hardness similar to those of the receiving water, and not produce a toxic response.
- A receiving water control must be run in alternate dilution water tests.
- A complete WET test report must be submitted as required by the Permit.

- If the retest documents that the receiving water controls met the TAC, receiving water must be used as diluent in future WET tests.
- If the receiving water controls of the retest failed to meet the TAC, an alternate dilution water may be used in future WET tests using that test organism only after the Permittee submits a written request to EPA and receives written authorization from EPA. (See Case (2) below.)

Case (2): Before an alternate dilution water is used in future WET tests, the Permittee must submit a notification letter to EPA of species-specific, site water toxicity. The notification letter shall be sent electronically to the NPDES Applications Coordinator in EPA Water Division (WD) at the following email address:

R1NPDESReporting@epa.gov

The letter must include:

1. WET data documenting the two recent incidents of site water toxicity to a test species;
2. Information on the alternate dilution water selected for future WET tests including hardness data and a comparison to the receiving water chemistry; and
3. A list of the controls (e.g., site water control, alternate dilution water control, laboratory culture water control, thiosulfate control) that will be run in future WET tests.

Then, EPA-New England will respond in writing to authorize or to deny the use of alternate dilution water in future WET tests. When EPA-New England authorizes the use of an alternate dilution water in future WET tests, it is for the duration of the life of the Permit. At a minimum, EPA will review alternate dilution water authorizations during Permit reissuance.

EPA reserves the right to revoke this guidance at any time and may immediately require the Permittee to use site water as diluent as EPA deems necessary. Such a determination will be provided in writing to the Permittee.

18. **Site Water Controls in Alternate Dilution Water Tests**

Alternate dilution water WET tests shall be run with a minimum of two controls; a site water control and a toxic free alternate dilution water control. Additional controls such as a laboratory culture control or a thiosulfate control must also be run, if necessary. Chemical data of the receiving water and dilution water samples must be included in the report.

19. **Use of Control Data**

When performing statistical analyses, the dilution water control, whether synthetic alternate dilution water or receiving water, must be used for data comparison.

In alternate dilution water tests, the receiving water control results are "report only" data.

If an alternate dilution water control, the thiosulfate control or the lab culture water control fail to meet the minimum TAC, the toxicity test must be repeated using a fresh sample.

20. **Test Results Review**

Toxicity test controls must meet the minimum test acceptability criteria. Additionally, WET test results are reviewed as follows:

a. **Concentration-Response Relationship**

The WET data concentration-response relationship is reviewed, and Hypothesis Testing and Point Estimate techniques are used to determine test endpoints. A dose-response review must be performed according to Section 10.2.6 of EPA-821-R-02-013 (for freshwater tests) or Section 10.2.6. of EPA-821-R-02-014 (for marine tests) to support the reported test endpoint values and to evaluate the reliability of the WET test results. In most cases, the review will draw in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with a fresh sample is required.

b. **Test Variability**

The within-test variability must be evaluated to determine test sensitivity which is a required part of the chronic WET test review. This review is only applicable to the sub-lethal test endpoints such as growth and reproduction that were determined using hypothesis testing. The test sensitivity evaluation is done by examining the calculated Percent Minimum Significant Difference (PMSD).

The PMSD is calculated for test endpoints which was determined using parametric statistical analysis techniques. For cases where a NOEC was determined using non-parametric technique, the PMSD is only calculated to determine test variability and is calculated using a comparable,

parametric statistical analysis technique. As a final step in the evaluation, the calculated PMSD is compared to the upper and lower PMSD bounds shown for freshwater tests in Table 6 of EPA-821-R-02-013, Section 10.2.8.3, p. 52, and for marine tests in Table 6 of EPA-821-R-02-014, Section 10.2.8.3., p. 54.

1.) If the PMSD exceeds the upper bound test variability criterion of Table 6, the test results are considered too highly variable to determine the WET of the discharge at the permitted receiving water concentration (RWC). If the test results indicate that the discharge is not toxic at the RWC, then the test is considered insufficiently sensitive and must be repeated using fresh samples. If the test results indicate that the discharge is toxic at the RWC, the results are considered acceptable and the test does not have to be repeated.

2.) If the PMSD falls below the lower bound test variability criterion of Table 6, the test is highly sensitive, and the percent relative difference (PRD) between the control and each concentration must be calculated and compared to the lower PMSD boundary. If the PRD for the concentration falls below the lower bound, the difference is considered statistically insignificant. If the PRD for the concentration is above the lower bound, then the concentration is considered statistically significant. (See Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program, EPA 833-R-00-003, June 2002, Section 6.4.2.)

3.) When PMSDs fall within the upper and lower bounds of Table 6, the sub-lethal test endpoint determinations shall be reported.

21. **Sign and Certify Each WET Report**

Under 40 C.F.R. §122.41(k), each WET test report submitted to the EPA shall be signed and certified by a person described below or by a duly authorized representative of that person in accordance with 40 C.F.R. §122.22(b)-(d):

(1) for a corporation, by a responsible corporate officer;
(2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; and
(3) for a municipality, State, Federal or other public agency, the principal executive officer or ranking elected official.

The Permittee is responsible for the data quality that it reports to EPA. When a report is signed and certified, it documents that the NPDES Permittee is certain that the WET test data submitted meet the Permit requirements for testing and reporting. Please include the following certification statement of 40 C.F.R. §122.22(d) in every report:

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Permittee)

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on _____ _____
[Date] [Authorized Signature]

_____
[Print or Type Name and Title]

_____
[Print or Type the Permittee's Name]

_____
[Print or Type the NPDES Permit No.]

Since the WET test and report check is complicated, you may wish to have your WET laboratory certify the validity of the WET test data and report accuracy to you. Suggested language is given below. Please note that this does not relieve the Permittee from its responsibility to sign and certify the report under 40 C.F.R. §122.41(k).

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Bioassay Laboratory)

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on _____ _____
[Date] [Authorized Signature]

_____
[Print or Type Name and Title]

_____
[Print or Type Name of Bioassay Laboratory]

22. Telephone Contacts

If you have questions, please contact:

Solanch Pastrana-Del Valle, ECAD at (617) 918-1746, "pastrana-del-valle.solanch@epa.gov", or
Janet Deshais, Water Division at 617-918-1667, "deshais.janet@epa.gov", or
Jack Paar, NE Regional Laboratory & Applied Science Division at (617) 918-8604, "paar.jack@epa.gov".

Attachment D: PFAS Analyte List

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

Target Analyte Name	Abbreviation	CAS Number
Ether sulfonic acids		
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Fluorotelomer carboxylic acids		
3-Perfluoropropyl propanoic acid	3:3FTCA	356-02-5
2H,*2H*,*3H*,*3H*-Perfluorooctanoic acid	5:3FTCA	914637-49-3
3-Perfluoroheptyl propanoic acid	7:3FTCA	812-70-4

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

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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: MA0004936

PUBLIC NOTICE START AND END DATES: May 16, 2025 – June 16, 2025

NAME AND MAILING ADDRESS OF APPLICANT:

Patriot Beverages, LLC
25 Copeland Drive
Ayer, MA 01432

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Patriot Beverages, LLC
20 Harvard Road
Littleton, MA 01833

RECEIVING WATER AND CLASSIFICATION:

Unnamed tributary to Reedy Meadow Brook (Segment MA84B-01)
Merrimack River Watershed
Class B (Warm Water Fishery)

SIC CODE: 2080 (Beverages), 3085 (Bottles, plastics)
NAICS CODE: 3121 (Beverage Manufacturing)

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1.0 Proposed Action

Patriot Beverages, LLC (the "Permittee") has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to authorize pollutant discharges from the Patriot Beverages facility (the "Facility") into an unnamed tributary to Reedy Meadow Brook.

The permit currently in effect was issued to Veryfine Products, Inc. by EPA on September 19, 2013 with an effective date of December 1, 2013, and expired on November 30, 2018 (the "2013 Permit"). The 2013 Permit was transferred from Veryfine, Inc. to Little Holdings, LLC on December 31, 2015 and then to Patriot Beverages, LLC effective December 7, 2016. The Permittee, Patriot Beverages, LLC, filed an application seeking NPDES permit reissuance from EPA dated July 26, 2018, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on November 13, 2018, the Facility's 2013 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on May 18, 2023, and a virtual update meeting on September 16, 2024.

2.0 Statutory and Regulatory Authority for Setting NPDES Permit Requirements

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

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

2.1 Technology-Based Requirements

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

Subpart A of 40 CFR Part 125 establishes criteria and standards for developing and applying technology-based requirements in permits under § 301(b) and 402(a) of the CWA. Where EPA has established national effluent limitation guidelines (ELGs) for an industrial category or subcategory, permit *limits* for a facility within that category are set by applying the limits from the national guideline. 40 CFR § 125.3(c)(1). *See also* CWA § 402(a)(1)(A). Where EPA has not yet promulgated an applicable national ELG, then the permitting authority develops permit limits based on Best Professional Judgment (BPJ), a facility-specific application of the relevant technology standard. 40 CFR § 125.3(c)(2). *See also* CWA § 402(a)(1)(B). Where national ELGs have been promulgated for some, but not all, of the pollutants regulated by the permit, limits are set using the appropriate approach for each pollutant. 40 CFR § 125.3(c)(3). Section 402(p) of the CWA, 33 U.S.C. § 1342(p) requires stormwater discharges associated with industrial activity to be authorized by a NPDES permit. *See also* 40 CFR § 122.26(a)(1)(ii).

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

2.2 Water Quality-Based Requirements

The CWA and EPA regulations require that NPDES permits include CWIS requirements and/or effluent limits based on water quality considerations when such limits are necessary to meet state or federal WQS that apply to the body of water that receives the discharge. Such water

quality-based limits are necessary when TBELs would be less stringent and would interfere with the attainment or maintenance of WQS in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the state. *See* CWA § 303 and 40 CFR §§ 131.10–131.12. Generally, WQSs consist of three parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/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 outstanding National resource waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. In this case, the applicable state WQSs are found in Title 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and particular numeric and narrative water quality criteria intended to help attain the designated uses. Then the state assigns one of the water body classifications to each water body in the state. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to monthly average limits.

When permit effluent limit(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," 2) based on a "case-by-case" assessment using CWA § 304(a) recommended water quality criteria supplemented as necessary by other relevant information; or; 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A)–(C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high-quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless

the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts's statewide antidegradation policy, entitled "Antidegradation Provisions," is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00," dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

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

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads

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

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

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

2.2.4 Reasonable Potential

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

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

2.2.5 State Certification

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

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law including water quality standards.

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

See Section 5.3.5 below for a detailed discussion of the expected state certification conditions and the potential impact to the permit. Note that the draft state certification will also be made available for public comment[1] by the State separately from this Draft Permit as part of the permit reissuance process. EPA does not have authority to make changes to the state certification conditions. Any comments regarding the draft state certification conditions should be made directly to MassDEP as part of that separate public notice.

2.3 Effluent Flow Requirements

Generally, EPA uses a discharger's effluent flow volume both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in its reasonable potential and WQBEL calculations to ensure compliance with WQSs under CWA § 301(b)(1)(C). Should a facility's effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a lower discharge flow may have a reasonable potential to do so at a higher flow due to the decreased dilution in the receiving water (which, conversely, means there will be a higher concentration of the pollutants). In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" effluent flow assumptions through imposition of permit conditions for effluent flow.[2] In this regard, the effluent flow limitation is a component of any WQBELs because the WQBELs are premised on a maximum flow level. The effluent flow limit may also be necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

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[1] Once the public notice period for the MassDEP's draft 401 certification begins, it will be posted here: https://www.mass.gov/info-details/massdep-permits-approvals-for-comment. Following MassDEP's public notice period, the draft certification will be moved to here: https://www.mass.gov/info-details/massachusetts-draft-individual-surface-water-discharge-permits-and-associated-documents.

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

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

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

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

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

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(h), (j) and (1)(9), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), State water quality criteria, and any other appropriate information or data, to develop numeric effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR Part 122.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. See 40 CFR § 122.41(j)(4). Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit*

Applications and Reporting Rule.[3] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

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

2.4.2 Reporting Requirements

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

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[5]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the State unless otherwise specified in the permit. In most cases,

[3] Fed. Reg. 49,001 (Aug. 19, 2014).
[4] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Fed. Reg. 49,001 (Aug. 19, 2014).
[5] https://netdmr.zendesk.com/hc/en-us

reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Exceptions are provided in the permit such as for providing certain reports, information, and requests to EPA's NPDES Applications Coordinator in the Water Division and written notifications required under Part II Standard Conditions.

2.5 Standard Conditions

The Standard Conditions, included as Part II of the Draft Permit, are based on applicable regulations found in EPA's NPDES permitting regulations. *See* 40 CFR § 122.41. *See also, generally,* 40 CFR Part 122.

2.6 Anti-backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2013 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 a beverage manufacturing and bottling operation located at 20 Harvard Road in Littleton, MA and southwest of Reedy Meadow Brook. A location map is provided in Figure 1. A site plan showing the locations of buildings and the outside areas that contribute to the stormwater flows and the stormwater retention pond (labeled Pond No. 1) is provided in Figure 2.

When the 2013 Permit was issued, Veryfine Inc. owned and operated the Facility, and the product mix was 55% manufactured fruit juices made with fruit concentrate and 45% flavored water products. In 2016, after Patriot Beverages obtained ownership of the facility, and production shifted to primarily flavored waters and teas, specifically Propel Water, Gatorade, and Pure Leaf Tea.

The Facility currently operates three production lines, each of which can produce up to 30,000 cases of beverages a day. Each of production lines include product batching/blending,

bottling/filling, capping, cooling, and labeling (See Figure 3). Two of the three lines also produce bottles via a blow mold and airveyor process that does not use water or generate any wastewater flows. The third line uses pre-made bottles. Non-contact cooling from two of the production lines have semi-closed loop cooling water recycle systems, consisting of recirculating pumps and chiller systems located on the roof of the building. Periodically, flows from the cooling water recycling system are discharged to the WWTP. The floor drains in the bottling operation collect washdown water and any spills and those are also directed to the WWTP.

As of October 2024, Patriot Beverages uses a blend of municipal drinking water from the Town of Littleton and on-site well water. The blended water supply is pretreated prior to use in the flavored water products. The pretreatment system includes chlorination, carbon adsorption, pH adjustment, and finally, reverse osmosis (RO). See Figure 4.

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based effluent limitation guidelines (ELGs) for Beverages (SIC 2080) in 40 CFR Subchapter N Parts 405 through 471. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. EPA's NPDES permitting regulations at 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1)(B) of the CWA shall apply the appropriate factors listed in 40 CFR § 125.3(d) and must consider 1) the appropriate technology for the category or class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

3.2 Location and Type of Discharge

Outfall 001 is located at latitude 42° 32' 25" N, longitude 71° 30' 54 W" and discharges to an unnamed tributary to Reedy Meadow Brook. As discussed below, the Permit authorizes the discharge of process wastewater to Reedy Meadow Brook via Outfall 001. Additionally, the Permit authorizes the discharge of stormwater via internal Outfall 002, which discharges to the same vault structure as Outfall 001, but upstream. Each source is sampled separately, prior to comingling and subject to separate effluent limitations. The combined flow is discharged via Outfall 001.

On average, process wastewater consists of concentrated syrup waste (60,000 GPD), beverage processing and clean-in-place (CIP) waste (210,000 GPD), reverse osmosis (RO) reject water (170,000 GPD), contact and non-contact cooling water NCCW (100,000 GPD), and stormwater runoff connected to the WWTP (10,000 GPD) for a total of 550,000 GPD.

Patriot Beverages' WWTP employs pretreatment with screening and grit removal. The high strength flow, along with stormwater from the spill protection system and off-site beverage water (see below for context) is treated in an upflow anaerobic sludge blanket (UASB) reactor.

An activated sludge system is then used to treat the UASB effluent along with the low strength water, non-contact cooling water (NCCW), and RO reject water. These flows are then sent through a reactor clarifier with polymer and ferric chloride, to remove phosphorus. This is followed by automatic backwash variety sand filters for removal of suspended solids. This is followed by post aeration and ultraviolet disinfection. Flow is measured by a Parshall flume after the UV unit, and this is where the effluent sampling for Outfall 001 is conducted. Sludge is dewatered in a filter press and processed sludge cake is hauled offsite to Agresource, a compost company. A flow diagram of the WWTP is provided in Figure 5.

As the Facility transitioned from juice products to flavored waters and teas, the amount of oxygen demand to its biological treatment system was reduced considerably, essentially starving the treatment system's biomass. Biological treatment relies on bacterial biomass to break down organic matter which cannot survive without a steady stream of organic matter. The Permittee received approval from the MassDEP to accept so called "high strength wastewater" (high in Chemical Oxygen Demand (COD)) from other beverage manufacturing facilities after a pilot study showed that adding these high strength waters to its treatment system would greatly improve the WWTP's efficiency. The Permittee expects to need to continue using such high strength wastewater in its treatment system due to its product mix to be able to meet the Permit's BOD and TSS limits. Currently, Patriot Beverages is approved to accept wastewater from two local beverage manufacturers, which it stores on site, and is referred to as "off-site beverage wastewater." This wastewater is metered into the treatment plant, as needed, and comprises up to 3% of the total water treated, or up to 17,000 gallons per day compared to the limited monthly flow of 550,000 gpd (0.55 MGD). The 2013 permit required an annual priority pollutant scan for the Facility's effluent to ensure that the off-site beverage wastewater would not cause or contribute to violations of state WQS.

Based on the sampling results and the high degree of dilution that the off-site beverage wastewater will experience through the treatment plant, EPA and MassDEP authorized the treatment of the off-site wastewater in the Permittee's wastewater treatment system. Most of these pollutants are either monitored as part of the WET testing requirement or are limited in the Permit, with the exception of ethanol, chloroform, and phenols. The permittee is expected to ensure that the addition of this wastewater does not cause or contribute to violations of the Permit's limits or conditions. Part I.C.1 of the Permit has set forth the necessary steps that the Permittee must take to receive approval from EPA and MassDEP to use beverage wastewater from any other manufacturer in its treatment system. The Permittee will need to report how much of this off-site beverage wastewater it uses in its WWTP each month. In addition, to assess whether any of the parameters present in these beverage wastewaters are present in the Facility's effluent, the annual priority pollutant scan requirement has been continued in this permit. Sampling for this scan shall be conducted during the second calendar quarter of the year (April through June) and during a period when the off-site beverage wastewater is being used in the WWTP.

Additionally, as carried forward from the 2013 Permit, the Permittee is required to notify EPA and MassDEP when it is planning to make a significant change to its product mix or when it is planning to undergo a change or addition to its treatment system that may alter the quality of the effluent (See Part I.C.2. of the Draft Permit). This will allow the time to determine whether such changes would result in changes to effluent quality which would necessitate a permit modification.

The Facility also has an internal storm water outfall, Outfall 002, which is comprised of storm water from buildings roofs and parking lot drains. These flows are directed to a retention basin, prior to being combined with Outfall 001 flows for discharge to Reedy Meadow Brook. There are oil/water separators for each storm water catch basin leading to the retention basin and an oil/water separator in the discharge line to the basin itself. An existing site conditions plan is shown in Figure 2.

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 November 2019 to October 2024 is provided in Appendix A of this Fact Sheet.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 001 (including the stormwater flows from internal Outfall 002) to an unnamed tributary to Reedy Meadow Brook (Segment ID MA84B-01). Reedy Meadow Brook is part of the Merrimack River Watershed, and it originates at the outlet of an impoundment upstream of Bruce Street in Littleton and travels 1.5 miles before entering Mill Pond.

Reedy Meadow Brook is classified as a Class B, warm water fishery in the Massachusetts WQSs, 314 Code of Massachusetts Regulations (CMR) 4.06. Class B waters are described in the Commonwealth of Massachusetts Water Quality Standards at 314 CMR 4.05(3)(b) as follows: *"designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment (Treated Water Supply). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."*

Reedy Meadow Brook is listed in the *Massachusetts Integrated List of Waters for the Clean Water Act 2020/2022 Reporting Cycle* ("303(d) List") as a Category 5 "Waters Requiring a

TMDL.[6] The pollutants and conditions requiring a TMDL are ambient bioassays - chronic aquatic toxicity and Fecal Coliform. To date no TMDL has been developed for this segment for any of the listed impairments. The status of each designated use is presented in Table 1.

Table 1: Summary of Designated Uses and Listing Status: Reedy Meadow Brook

Designated Use	Status
Aquatic Life	Impaired (Chronic Aquatic Toxicity)
Aesthetics	Not Assessed
Primary Contact Recreation	Impaired (Fecal Coliform)
Secondary Contact Recreation	Impaired (Fecal Coliform)
Fish Consumption	Not Assessed

According to the *Merrimack River Watershed Water Quality Assessment Report*,[7] this water body segment is not attaining designated uses for other aquatic life, primary recreation, and secondary recreation due to impairments caused by chronic aquatic toxicity and fecal coliform bacteria. The designated uses for fish consumption and aesthetics have not been assessed. EPA notes that water samples collected upstream of the discharge between April 2019 and March 2024 resulted in survival of the test species *Pimephales promelas* (fathead minnow) of less than 80% in 9 of the 21 test events. Whole Effluent Toxicity (WET) test criteria for this organism requires at least 80% survival in control samples[8]. Due to this toxicity of the receiving water, the 2013 Permit allowed the Permittee to use an alternate dilution water for its WET testing. EPA is awaiting a current request from the Permittee for the continued use of alternate dilution water.

Since Reedy Meadow Brook discharges into Mill Pond, only 1.5 miles downstream from Outfall 001, EPA has determined that the ecological status of Mill Pond is relevant to the establishing of water quality-based effluent limits (WQBELs) for this permit. Mill Pond is a 54-acre hypereutrophic pond located in Littleton, Massachusetts.[9] It is divided by a dam into two basins, a north basin (assessment id: MA84038) and a south basin (assessment ID: MA84081). The dam is owned by the Massachusetts Department of Transportation (MassDOT) and is used for flood control and stabilization for the I-495 highway. Mill Pond is a class B warm water fishery and is listed on the State's 303(d) List as a Category 5 "Waters Requiring a TMDL" water

[6] Final Massachusetts Integrated List of Waters for the Clean Water Act 2022 Reporting Cycle. MassDEP Division of Watershed Management, p. 185
Watershed Planning Program, Worcester, Massachusetts; November 2021; CN: 505.1. Available at: https://www.mass.gov/doc/draft-massachusetts-integrated-list-of-waters-2022-reporting-cycle

[7] Meek, J., & Kennedy, L. (2019). *Merrimack River Watershed Water Quality Assessment Report* (No. 84-AC-2). MassDEP Division of Watershed Management. https://www.mass.gov/doc/merrimack-river-watershed-2004-water-quality-assessment-report/download

[8] *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA-821-R-02-013). (2002). EPA. https://www.epa.gov/sites/default/files/2015-12/documents/method_1000_2002.pdf

[9] https://mywaterway.epa.gov/waterbody-report/MA_DEP/MA84038/2020

due to impairments caused by aquatic plants (macrophytes). To date, no TMDL has been developed for this segment for any of the listed impairments.

The Army Corps of Engineers (ACOE), in conjunction with the Town of Littleton, conducted a feasibility study to explore alternatives to restore the health and ecology of Mill Pond. The study was executed by both parties in September 2016 and terminated by the ACOE in November 2022[10] and the future of the restoration project is currently unknown. The feasibility study found that Mill Pond has been degraded due to excessive nutrient loads into the pond from the surrounding watershed and due to excessive sedimentation, that has reduced the pond's depth from 10 feet to 3.6 feet. The excessive nutrient concentrations and the shallow depth have contributed to the spread of invasive aquatic plants (primarily *Phragmites spp.)* which has resulted in a loss of fish and waterfowl habitat. The ACOE and the Town of Littleton reported that non-point source runoff was the main vector for pollution.

4.2 Ambient Data

Ambient data characterizing Reedy Meadow Brook was collected as part of the 2013 Permit's quarterly WET testing requirement. A summary of the ambient data collected in the receiving water in the vicinity of the Facility's discharge can be found in Appendix B of this Fact Sheet.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[11]
The critical flow is a measure of the low flow of the receiving water and may stipulate the magnitude, duration, and frequency of allowable excursions from the magnitude component of criteria in order to prevent adverse impacts of discharges on existing and designated uses. State WQSs specify the hydrologic condition at which water quality criteria must be applied. For rivers and streams, the lowest flow condition at and above which aquatic life criteria must be applied is the lowest mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10). *See* 314 CMR 4.03(3)(a).

Reedy Meadow Brook is an ungauged site with no streamflow data available. The United States Geological Survey in conjunction with MassDEP developed a methodology to use a regression analysis to estimate streamflow statistics[12] when there is no data available. The methodology was then developed into a web application "Streamstats"[13] which can perform the analysis to estimate the 7Q10. Using Streamstats, EPA determined that the 7Q10 is 0.104 ft^3/s or 0.067 million gallons per day (MGD).

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[10] Adam Burnett P.G email to Elise Scholl, EPA, April 6th, 2023.
[11] EPA Permit Writer's Manual, Section 6.2.4
[12] Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p.
[13] Streamstats: https://streamstats.usgs.gov/ss/

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

$$DF = (Q_s + Q_d)/Q_d$$

Where:
Q_S = 7Q10 in million gallons per day (MGD)
Q_d = Discharge flow in MGD

Therefore:

$$DF = (0.067 \text{ MGD} + 0.75 \text{ MGD})/0.75 \text{ MGD} = 1.09$$

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

5.0 Proposed Effluent Limitations and Conditions

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

In accordance with 40 CFR § 122.45(b)(2), EPA based the calculation of effluent limitations upon a reasonable measure of actual production of the Facility, or flow. EPA determined that the measure appropriate for this Facility is the permitted maximum daily flow, 0.75 MGD. The permitted maximum daily flow reflects the magnitude, frequency and duration of process wastewater generated during the routine production of beverages, waters, and teas.

5.1 Outfall 001: Effluent Limitations and Monitoring Requirements

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

5.1.1 Effluent Flow

From November 1, 2019 through October 31, 2024 (Appendix A), the maximum daily effluent flow has ranged from 0.182 MGD to 0.495 MGD. The Facility's 2013 Permit includes a maximum daily flow limit of 0.75 million gallons per day (MGD) and an average monthly flow limit of 0.55 MGD. Under normal operating conditions, and as indicated by monitoring data and information provided by the Permittee, the maximum flow is typically no greater than approximately 0.495

MGD and the monthly average flow is typically no greater than 0.362 MGD. The Draft Permit maintains the maximum daily flow limit of 0.75 MGD and an average monthly flow limit of 0.55 MGD as well as continuous monitoring for flow using a recorder or similar device.

5.1.2 pH

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

From November 1, 2019 through October 31, 2024 (Appendix A), pH has ranged from 6.5 to 8.6 S.U. The Draft Permit requires a pH range of 6.5 to 8.3 S.U. and monitored weekly by grab samples. The pH limitations are based on the State WQSs for Inland Waters, Class B at 314 CMR 4.05(3)(b)3, which require that the pH of the receiving water be in the range of 6.5 to 8.3 S.U. These limitations are based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

During the review period, there have been 8 exceedances of the upper bound of the pH limit. In 2020, MassDEP issued a notice of noncompliance[14] to Patriot Beverages for permit violations that were cited during a remote multi-media inspection on August 27, 2020 conducted by MassDEP CERO. This notice of non-compliance (NoN) cited five pH violations that occurred between February 2020 and July 2020. Two exceedances occurred in 2021 following the NoN. The Facility has reported that wastewater coming into the WWTP can start at a pH as low as 4 S.U. As the effluent enters the digesters, caustic soda is added to raise the pH up to 7.0 SU[15]. pH is also monitored as the effluent enters the SBR (sequencing batch reactors) and averages between 8.1-8.3 SU. Presently, there is no further pH control as part of the WWTP process after this point. The Draft Permit continues the limit of 6.5 to 8.3 S.U. with a daily monitoring requirement via grab sample.

5.1.3 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.

[14] EMAIL. Joshua Watkins, MassDEP to Douglas Koopman and Elise Scholl, EPA. April 10, 2023
[15] Ron Eastman, Patriot Beverages Wastewater Operator, to Elise Scholl, EPA, May 31, 2023

The 2013 Draft Permit contains monthly average and maximum daily TSS limitations of 10 mg/L and 20 mg/L, respectively, when the Facility is discharging, monitored weekly by composite samples. These limits were established prior to the 2013 permit and were based on a wasteload allocation (WLA) which was established for this receiving water by the MassDEP in 1990. These limitations have been continued from the Facility's 2013 Permit in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1).

From November 1, 2019 through October 31, 2024 (Appendix A), daily maximum total suspended solids (TSS) concentrations have ranged from 2 mg/L to 36 mg/L. The 2013 Permit contains monthly average and maximum daily TSS limitations of 10 mg/L and 20 mg/L, respectively and monitored weekly by composite samples. There have been 6 exceedances of the monthly average limit and 3 exceedances of the maximum daily limit (MDL).

5.1.4 BOD_5

Biochemical oxygen demand (BOD_5) measures the amount of oxygen consumed by microorganisms in decomposing organic matter in water. BOD5 also measures the chemical oxidation of inorganic matter (i.e., the extraction of oxygen from water via chemical reaction). The rate of oxygen consumption in a waterbody is affected by several variables: temperature, pH, the presence of microorganisms, and the type of organic and inorganic material. BOD5 directly affects the amount of dissolved oxygen in rivers and streams. The greater the BOD5, the more rapidly oxygen is depleted in the stream. Depletion of the in-stream oxygen levels cause aquatic organisms to become stressed, suffocate, and die.

The 2013 Draft Permit contains monthly average and maximum daily BOD_5 limitations of 10 mg/L and 20 mg/L, respectively, when the Facility is discharging, monitored weekly by composite samples. These limits were established prior to the 2013 permit and were based on a wasteload allocation (WLA) which was established for this receiving water by the MassDEP in 1990. Performance data from the Facility indicate that these WQBELs are routinely achievable and no material or substantial changes in operations at the Facility have occurred since these limitations were imposed. Therefore, these limitations have been continued from the Facility's 2013 Permit in accordance with anti-backsliding requirements found in 40 CFR § 122.44(1).

There have been 3 exceedances of the monthly average limit and 3 exceedances of the maximum daily limit (MDL). From November 1, 2019 through October 31, 2024 (Appendix A), daily maximum BOD_5 concentrations have ranged from 0 to 194 mg/L.

The BOD_5 limits from the 2013 Permit will be carried forward in the Draft Permit along with weekly monitoring by composite samples.

5.1.5 Temperature

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

The MA SWQS stipulate that the temperature for Class B warm water fisheries shall not exceed 83°F and that the rise in temperature due to a discharge shall not exceed 5°F[16]. See 14 CMR 4.05(3)(b)(2).

From November 1, 2019 through October 31, 2024 (Appendix A), the discharge temperature has ranged from 50°F to 88°F. There have been 4 exceedances of the maximum daily limit. In order for the sequencing batch reactors (SBRs) of the biological treatment system to operate effectively, the Permittee needs to raise the temperature of the wastewater entering these units to between 98 and 100°F.[17]

The 2013 Permit contains a temperature limit of 83° F, when the Facility is discharging, monitored weekly by grab samples. This limit will be carried forward in the Draft Permit.

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 trihalomethane. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 CFR § 141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than four hours.

Chlorine can be extremely toxic to aquatic life. Effluent limits are based on water quality criteria for total residual chlorine (TRC) which are specified in EPA water quality criteria established pursuant to Section 304(a) of the Clean Water Act. The most recent EPA recommended criteria are found in National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047). The freshwater aquatic life criteria for TRC are 11 ug/l for protection from chronic toxicity and 19 ug/l for protection from acute toxicity.

The 7Q10 dilution multiplied by the chronic and acute criteria provides the appropriate TRC limits as shown below:

[17] Ron Eastman, Patriot Beverages Wastewater Operator, to Elise Scholl, EPA. May 31, 2023

Chronic limit: 11 ug/l * 1.09 = 12 ug/l
Acute limit: 19 ug/l * 1.09 = 21 ug/l

From November 1, 2019 through October 31, 2024 (Appendix A), maximum daily TRC levels ranged from 0-41 mg/L and monthly average TRC levels ranged from 0-34.5 mg/L. The water supply pre-treatment and RO system chlorinates the incoming water. A portion of the chlorinated water from that process can be sent for use in the bottle rinse process. Much of the chlorinated water continues through the pre-treatment and RO filtration system. The water is dechlorinated with activated carbon filters before continuing treatment and ultimately to the RO units. The recent monitoring data for TRC would indicate that there is reasonable potential to violate the chronic and acute instream WQS. Unusually high concentrations of TRC were reported in July, August and September of 2024. EPA has determined that the TRC limits of 12 ug/L (chronic) and 21 ug/L (acute) shall be carried forward in the Draft Permit.

5.1.7 Total Phosphorus

While phosphorus is an essential nutrient for the growth of aquatic plants, it can stimulate rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by:

1) increasing oxygen demand within the water body to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter[18];
2) causing an unpleasant appearance and odor;
3) interfering with navigation and recreation;
4) reducing water clarity;
5) reducing the quality and availability of suitable habitat for aquatic life;
6) producing toxic cyanobacteria during certain algal blooms.

Cultural (or accelerated) eutrophication is the term used to describe dense and excessive plant growth in a water body that results from nutrients entering the system as a result of human activities. Discharges from municipal and industrial wastewater treatment plants, agriculture runoff, and stormwater are examples of human-derived (i.e. anthropogenic) sources of nutrients in surface waters. See generally, Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002], Chapters 1 and 3.

[18] Algae" includes phytoplankton (microscopic algae measured by levels of chlorophyll a), macroalgae (commonly referred to as seaweed), and other plants stimulated by nutrient over-enrichment. Excessive algal growth contributes to low levels of dissolved oxygen through increased plant respiration and decomposition of dead plant matter. Notably, during the day, algae provide oxygen to the water as a by-product of photosynthesis. At night, however, when photosynthesis ceases but plant respiration continues, dissolved oxygen levels decline. Additionally, as these algae die, they are decomposed by bacteria that consume yet more oxygen. When dissolved oxygen levels are low, aquatic organisms become stressed and die, and overall aquatic health is degraded

Elevated concentration of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment.[19].

The MA WQS under 314 CMR 4.05(5)(c) states

"Unless naturally occurring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site-specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00 including, but not limited to, those established in 314 CMR 4.06(6)(c): Table 28: Site-specific Criteria. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non-POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control."

Cultural eutrophication, as mentioned above, also results in exceedances of other nutrient-related water quality standards such as low dissolved oxygen, decreased water clarity, objectionable odors, and surface scum. The MA WQS at 314 CMR 4.05(3)(b)(1) requires that dissolved oxygen not be less than 6.0 mg/L in cold water fisheries or 5.0 mg/L in warm water fisheries. Further, the MA WQS at 4.05(3)(b)(5), (6) and (8) state that waters must be free from "floating, suspended, and settleable solids," free from "color and turbidity in concentrations or combinations that are aesthetically objectionable…", and have no taste and odor "in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to this Class, or that would cause tainting or undesirable flavors in the edible portions of aquatic life." As Reedy Meadow Brook and Mill Pond are already impaired due to cultural eutrophication (see Section 4.1), it is imperative that wastewater discharges do not contribute nutrients that will further contribute to the degradation of these resources.

When permitting nutrient discharges, EPA analyzes available information from a reasonably conservative standpoint, as it regards one key function of a nutrient limit as preventative. This protective approach is appropriate because, once begun, the cycle of eutrophication can be difficult to reverse due to the tendency of nutrients to be retained in the sediments. For this reason, time is of the essence when permitting for nutrients, so EPA acts on the best information reasonably available when developing the draft permit and does not generally

[19] Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002]

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

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

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

In the absence of numeric criteria for phosphorus, EPA uses nationally recommended criteria and other technical guidance to develop effluent limitations for the discharge of phosphorus. EPA has published national guidance documents that contain recommended total phosphorus criteria and other indicators of eutrophication. EPA's 1986 Quality Criteria for Water (the "Gold Book") recommends that in-stream phosphorus concentrations not exceed 0.05 mg/L in any stream entering a lake or reservoir, 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within a lake or reservoir. The 2013 permit determined that the effluent phosphorus levels should be based on the instream target guidance level of 0.05 mg/L (50 ug/L), which applies for any stream entering a lake or reservoir, since Reedy Meadow Brook travels a short distance before it empties into Mill Pond. As the Gold Book notes, there are natural conditions of a water body that can result in either increased or reduced eutrophic

response to phosphorus inputs; in some waters more stringent phosphorus reductions may be needed, while in some others a higher total phosphorus threshold could be assimilated without inducing a eutrophic response. As Mill Pond is already hypereutrophic, there is restricted assimilative capacity for phosphorus.

In order to determine whether this Permittee's discharge of total phosphorus is contributing to the water quality impairment, EPA will continue to apply the Gold Book criteria 0.05 mg/l because it was developed from an effects-based approach rather than the reference conditions-based approach used in the derivation of the ecoregional criteria. The effects-based approach is preferred in this case because it is more directly associated with an impairment of a designated use (i.e., recreation). The effects-based approach provides a threshold value above which water quality impairments are likely to occur. It applies empirical observations of a causal variable (i.e., phosphorus) and a response variable (i.e., algal growth) associated with impairment of designated uses. Reference-based values are statistically derived from a comparison within a population of rivers in the same ecoregional class. They are a quantitative set of river characteristics (physical, chemical, and biological) that represent minimally impacted conditions.

The 2013 Permit established seasonal phosphorus limits. For the winter period between November 1 and March 31, the limits were based on the instream target of 0.1 mg/l for the monthly average and established at 0.46 lbs/day, whereas the daily maximum limit was established at 1.25 lbs/day and was based on meeting the instream target of 0.2 mg/l.

The 2013 Permit summer monthly average limits were established based on the 0.05 mg/L Gold Book standard and the mass limit was calculated to be 0.23 lbs/day and was based on a 60-day rolling average. The daily maximum limit was based on the 0.2 mg/L instream target and was established at 1.25 lbs/day.

DMR data from November 1, 2019 through October 31, 2024 showed winter monthly average phosphorus values ranging from 0.08 to 1.79 lbs/day. There was a total of 11 exceedances of the monthly average phosphorus limit in the review period. The summer monthly average phosphorus limits, which are expressed as a 60-day rolling average, ranged from 0 to 0.99 lbs/day. There were 11 exceedances of the summer monthly average limits. The maximum daily phosphorus values ranged from 0 to 3.93 lbs/day. There were 11 exceedances of the maximum daily phosphorus limits. In order to control phosphorus concentrations more consistently in the effluent, the Facility has tried several approaches, most recently adding ferric, cerium chloride and floc to remove phosphorus. The facility has adopted this approach.

Upstream and downstream ambient phosphorous data was obtained from the Town of Littleton. This data was used as part of the reasonable potential (RP) analysis to derive limits. Figures 6 and 7 show maps of sampling locations.[20] See Tables 2, 3 and 4 for phosphorous data.

[20] RMBR stands for Reedy Meadow Brook. Only site RmBr0 was used for the RPA analysis as it is upstream of the discharge. MP stands for Mill Pond.

Table 2: Upstream Phosphorus Concentrations (RmBr0)

Date	Phosphorus Concentration (mg/L)
May 2017	0.02
June 2017	0.01
July 2017	0.02
August 2017	0
September 2017	0

Table 3: Downstream Phosphorus Concentrations (RmBr1)

Date	Phosphorus Concentration (mg/L)
August 2, 2016	0.51
September 2016	0.99
May 2017	0.07
June 2017	0.04
July 2017	0.09
August 2017	0.05
September 2017	0.11
May 2018	0.05
June 2018	0.03
July 2018	0.05
August 2018	0.1
September 2018	0.56
May 2019	0.06
June 2019	0.32
July 2019	0.21
August 2019	0.09
September 2019	0.25

Table 4: Mill Pond Phosphorus Concentrations

Date	Sampling Location	Phosphorus Concentration (mg/L)
August 4, 2016	MP Boat launch	0.88
September 2016	MP Boat launch	0.02
May 2017	MP Boat launch	0.03
June 2017	MP Boat launch	0
July 2017	MP Boat launch	0.04
August 2017	MP Boat launch	0.03
September 2017	MP Boat launch	ND

Date	Sampling Location	Phosphorus Concentration (mg/L)
May 2018	MP Culvert	0.02
June 2018	MP Culvert	0
July 2018	MP Culvert	0.01
August 2018	MP Culvert	0.3
September 2018	MP Culvert	0.03
May 2021	MP Culvert	0.024
June 2021	MP Culvert	0.024
July 2021	MP Culvert	0.065
August 2021	MP Culvert	0.025
September 2021	MP Culvert	0.049
August 2022	MP Culvert	0.035

The Draft Permit limits are calculated with the 0.05 mg/L criteria for summer monthly average limits and the 0.1 mg/L winter monthly average limits. The maximum daily limit is calculated using the 0.2 mg/L instream criteria. The calculations are shown below.

Summer Limits

$$criteria * flow * conversion\ factor\ (8.35) = Limit$$

$$0.05\ \frac{mg}{L} \times 0.55\ mgd\ \times 8.35 = monthly\ limit$$

$$\mathbf{0.23}\ \boldsymbol{\frac{lbs}{day} = monthly\ limit}$$

$$0.2\ \frac{mg}{L} \times 0.75\ mgd\ \times 8.35 = maximum\ daily\ \ limit$$

$\mathbf{1.25}\ \frac{\boldsymbol{lbs}}{\boldsymbol{day}}$= maximum daily limit

Winter Limits

$$0.1\ \frac{mg}{L} \times 0.55\ mgd\ \times 8.35 = monthly\ limit$$

$$\mathbf{0.46}\ \boldsymbol{\frac{lbs}{day} = monthly\ limit}$$

$$0.2\ \frac{mg}{L} \times 0.75\ mgd\ \times 8.35 = maximum\ daily\ \ limit$$

$\mathbf{1.25}\ \frac{\boldsymbol{lbs}}{\boldsymbol{day}}$= maximum daily limit

The calculated limits are the same as the 2013 Permit and will be carried forward the Draft Permit along with the weekly composite sampling.

5.1.8 Ammonia

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

From November 1, 2019 through October 31, 2024 (Appendix A), maximum daily ammonia levels ranged from 0-0.56 mg/L and monthly average ammonia levels ranged from 0-0.56 mg/L. Although most of the readings were low and there is no reasonable potential to violate WQS, the minimal dilution available to the effluent leaves Reedy Meadow Brook susceptible to nutrient enrichment from even low levels of additional nutrients. As noted earlier, Mill Pond, to which Reedy Meadow Brook discharges, is impaired for nutrients. Additionally, the Facility uses cleaning chemicals that contain nitrites. Therefore, the monthly monitor only requirement for ammonia nitrogen by composite sampling will remain in the Draft Permit.

5.1.9 Dissolved Oxygen (DO)

Dissolved oxygen (DO) is a measure of how much oxygen is available in a water body for biological use and is needed by aquatic organisms for survival. Rapidly moving water bodies tend to have higher concentrations of DO, but eutrophic conditions can occur when the DO level decreases, and the water body becomes oxygen deficient making it unable to support aquatic life.

The Facility has reported DO values ranging from 6.7 to 9.4 mg/L during the review period. Reedy Meadow Brook has previously been impaired for dissolved oxygen and is currently impaired for chronic aquatic toxicity. Mill Pond, which Reedy Meadow Brook discharges to, is impaired by aquatic plants, which can result in low dissolved oxygen. Given these impairments and pursuant to anti-backsliding regulations in section 2.6 above, the 7.0 mg/L limit will be carried forward in the Draft Permit.

5.1.10 Oil and Grease

Oil and Grease is not a single chemical constituent but includes a large range of organic compounds that can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters

either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture, can be lethal to fish, benthic organisms and water-dwelling wildlife.

The daily maximum oil and grease limit of 15 mg/l was not exceeded during the monitoring period and only detected three times,[21] with a high value of 2.5 mg/l and a mean value (out of the 3 detections) of 2.02 mg/L. The oil and grease maximum daily limit of 15 mg/l is derived from the narrative water quality criteria in the MA SWQS [see 314 CMR 4.05(3)(b)(7)]. For discharges to Class B waters in Massachusetts, the narrative criteria require, among other things, that no oil and grease is present that would produce a visible film on the surface of the receiving water. MassDEP interprets this narrative criterion as prohibiting a discharge to these waters that would cause an oil sheen. EPA has maintained the oil and grease limit of 15 mg/l for this draft permit based on the MassDEP's long standing use of the 15 mg/l standard to represent the concentration at which a visible oil sheen is likely to occur. This limit will ensure the narrative water quality standard for oil and grease is protected. The monitoring frequency will continue to be quarterly by grab sample.

5.1.11 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g., copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. In aquatic systems, metal bioavailability refers to the concentration of soluble metal that adsorb onto, or absorb into, and across membranes of living organisms. The greater the bioavailability, the greater the potential for bioaccumulation, leading to increased toxicological effects.[22] Toxicity results when metals are biologically available at toxic concentrations affecting the survival, reproduction, and behavior of an organism.

The 2013 Permit included a chronic limit for aluminum of 0.1 mg/L. The monitoring frequency was once per month.

The Permittee has provided quarterly monitoring data for total recoverable aluminum, cadmium, copper, lead, nickel and zinc in the discharge and the receiving water in conjunction with Whole Effluent Toxicity testing. For Outfall 001, from November 1, 2019 through October

[21] Out of 60 total sampling events
[22] Magelhaes, Danielly et al. 2015. *Metal bioavailability and toxicity in freshwaters.* Environmental Chemistry Letters. DOI 10.1007/s10311-015-0491-9.

31, 2024 (Appendix A), total recoverable aluminum, cadmium, copper, lead, nickel and zinc were detected above laboratory minimum levels. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using EPA's 2002 *National Recommended Water Quality Criteria* for metals (Appendix C). State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants, which requires the use of EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* where a specific pollutant is not otherwise listed in 314 CMR 4.00. *See* 314 CMR 4.05(5)(e).

Additionally, the Permittee was required to conduct an annual priority pollutant scan for the pollutants listed in Table 1 in Section 5.1.13. Measurable levels of arsenic, nickel and zinc were reported in the annual priority pollutant scans. The results of the priority pollutant scans are provided in Appendix A, p. A-20.

The results of EPA's analysis indicate the discharge of copper has a reasonable potential to cause or contribute to an excursion above WQSs. The results of EPA's analysis indicate discharges of arsenic, cadmium, nickel and zinc do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. The Draft Permit includes an effluent limitations for copper (See discussion below). Monitoring for total recoverable aluminum, arsenic, cadmium, lead, nickel and zinc in the discharge and the receiving water continues to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below.

5.1.11.1 Aluminum

Elevated aluminum concentrations can cause sub-lethal or lethal effects for animals such as fish, amphibians, and invertebrates. Aluminum targets the gills of fish, which can cause death due to respiratory, osmoregulatory, and ionoregulatory issues (Exley et al., 1991). Aluminum enters surface waters through atmospheric deposition, weathering, discharges, and soil mobilization. Aluminum bioavailability is affected by water chemistry parameters, including pH, total hardness, and dissolved organic carbon (DOC). Increased DOC and total hardness reduce aluminum's bioavailability, while acidic (pH < 6) and basic (pH > 8) conditions increase aluminum bioavailability to freshwater organisms (USEPA, 2018b).

In 2018, EPA updated the 1988 national recommended ambient water quality criteria for acute and chronic aluminum exposure in freshwater.[23] The criteria recommendations are in the form of a calculator (Aluminum Criteria Calculator V.2.0 (USEPA, 2018a)), which calculates instantaneous acute and chronic total recoverable aluminum criteria values based on multiple linear regression models with three inputs: pH, total hardness, and DOC. The models are based on aluminum toxicity studies with variable pH, total hardness, and DOC concentrations. To aid water quality standards implementation, the calculator provides instantaneous criteria values that are protective of surface waters if the acute one-hour average is not exceeded more than once every three years and the chronic four-day concentration is not exceeded more than once

[23] Final Aquatic Life Ambient Water Quality Criteria for Aluminum 2018 (USEPA, 2018b).

every three years.

The MassDEP amended the Massachusetts Surface Water Quality Standards (314 CMR 4.00) in 2020. The amendments to the Surface Water Quality Standards included adoption of EPA's 2018 guidance for aluminum in freshwater.

Aluminum compounds are used in the wastewater treatment process, primarily for the removal of phosphorus, and aluminum is routinely detected in the effluent sampling that was required as part of the 2013 Permit. The 2013 permit included a chronic limit of 0.1 mg/L. During the years 2019 to 2024, the effluent aluminum level from the required monitoring ranged from 0.004 to 0.134 mg/l, with an average of 0.036 mg/l. There were three exceedances during the review period. The Facility is no longer using an aluminum-based compound for phosphorous control.

The chronic water quality criterion for aluminum is 249 ug/l and the acute criterion is 460 ug/l. See 314 CMR 160.57. The applicable water quality-based limits are derived as follows based on the dilution factors that were calculated earlier:

Chronic limit: 0.249 mg/L * 1.09 = 0.4731 mg/l
Acute limit: 0.460 mg/L * 1.09 = 0.874 mg/l

The aluminum data indicate that there is a reasonable potential to violate the chronic, but not the acute, instream WQS for aluminum. Pursuant to anti-backsliding regulations discussed in section 2.6, the chronic limit of 0.1 mg/L will be carried forward in the Draft Permit. However, due to the Facility no longer using alum for phosphorus control, the monitoring frequency will be reduced to what is required for WET testing as discussed in section 5.1.14.

5.1.11.2 Copper

Increased metal bioavailability for essential micronutrients, such as copper, may be beneficial to aquatic organisms. Increased copper bioavailability beyond required levels, however, can cause sub-lethal or lethal effects (Eisler, 1998; Scannell, 2009). Elevated copper concentrations in aquatic species can cause growth impacts, metabolic inhibition, photosynthetic issues, reduced feeding, reduced reproduction, gill damage in aquatic invertebrates, olfactory response changes in freshwater fish species, and adverse behavioral effects (Eisler, 1998; Sommer et al., 2016). Copper enters surface waters through atmospheric deposition, weathering, discharges, and other anthropogenic activities (ATSDR, 2004). Copper bioavailability is affected by numerous water chemistry parameters, including pH, total hardness, and dissolved organic carbon (DOC). For example, as DOC increases, the bioavailability of copper decreases (Santore et al., 2001).

In 2007, EPA updated the 1996 national recommended ambient water quality criteria for acute and chronic copper exposure in freshwater.[24] The criteria recommendations are in the form of software (Biotic Ligand Model version 2.2.3 (USEPA, 2007)), which calculates instantaneous acute and chronic dissolved copper criteria values based on the concentration of copper at a biotic ligand in varying water conditions that can lead to toxicity (USEPA, 2007; McConaghie and Matzke, 2016). To aid water quality standards implementation, the software provides instantaneous criteria values that are protective of surface waters if the acute 24-hour average is not exceeded more than once every three years and the chronic four-day concentration is not exceeded more than once every three years.

The MassDEP amended the Massachusetts Surface Water Quality Standards (314 CMR 4.00) in 2020. The amendments to the Surface Water Quality Standards included adoption of EPA's 2007 guidance for copper in freshwater.

The acute and chronic EPA *National Recommended Water Quality Criteria* for copper are as follows:

Copper:
Freshwater acute (Class A or B) = 8.52 µg/L
Freshwater chronic (Class A or B) = 5.94 µg/L

The results of EPA's analysis indicate discharges of copper cause, or have a reasonable potential to cause, or contribute to an excursion above the chronic aquatic life water quality criterion. As a result, the Draft Permit includes an effluent limitation of 0.012 mg/L for average monthly total recoverable copper and a maximum daily limit of 0.019 mg/L at a frequency of 2/month. In addition, quarterly monitoring for total recoverable copper in the discharge and the receiving water continue to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below.

As these are new limits, there is a compliance schedule which delays the effective date of these limits for one year from the effective date of the final permit. In the interim period, the permittee will be required to monitor and report the results for copper.

5.1.12 Bacteria

Fecal coliform 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 pose a health risk to humans through primary and secondary contact recreation and the consumption of fish/shellfish.

MA SWQS states:

[24] Aquatic Life Ambient Freshwater Quality Criteria - Copper (USEPA, 2007).

"Concentrations of bacteria in Inland Waters…shall, on a year-round basis, satisfy either 314 CMR 4.05(5)(f)1.a. or b:

a. for E. coli:
   i. concentrations shall not exceed 126 colony-forming units (cfu) per 100 mL, calculated as the geometric mean of all samples collected within any 90-day or smaller interval; and
   ii. no more than 10% of all such samples shall exceed 410 cfu per 100 mL (a statistical threshold value); or

b. for enterococci:
   i. concentrations shall not exceed 35 cfu per 100 mL, calculated as the geometric mean of all samples collected within any 90-day or smaller interval; and
   ii. no more than 10% of all such samples shall exceed 130 cfu per 100 mL (the statistical threshold value)."

The 2013 permit required monitoring of *Escherichia coli* and *fecal Streptococcus* during the months of April through October. During the term of the 2013 Permit, the Facility ceased production of fruit juices and now primarily produces water, carbonated beverages, and teas. While there is no more fruit being processed on site, tea leaves are a possible vector for bacterial contamination.

From November 1, 2019 to October 31, 2024, the Facility reported daily maximum *E. Coli* concentrations between 0 cfu/ 100 mL to 1100 cfu/ 100 mL with a median value of 4 cfu/ 100 mL. The Facility reported monthly geometric mean *E. Coli* concentrations between 0 cfu/ 100 mL to 1100 cfu/ 100 mL with a median value of 4 cfu/ 100 mL. The Facility also reported daily maximum fecal *Streptococci* concentrations between 0 cfu/ 100 mL to 2419 cfu/ 100 mL with a median value of 31 cfu/ 100 mL. The Facility reported monthly geometric mean fecal *Streptococci* concentrations between 0 cfu/ 100 mL to 2419 cfu/ 100 mL with a median value of 31 cfu/ 100 mL.

During the review period, the Facility had one sample that exceeded the 126 cfu/ 100mL *E. Coli* WQS. Fecal *Streptococci* is part of a group of gram-positive Lancefield group D streptococci which are now grouped under the genus *Enterococci;* therefore, it is reasonable to use the WQS for *Enterococci* to evaluate the *Streptococci* data. The Streptococci data exceeded the 35 cfu/ 100 mL *Enterococci* WQS 13 times or 48% of sampling events.

The source of the bacterial contamination is unclear. The Permittee has suggested that tea leaves could be a possible vector for bacteria as could the stormwater flows that are sent to the WWTP prior to discharge via Outfall 001.

EPA has determined that both *E. coli* and *Enterococci* are appropriate indicators for this Draft Permit because the Facility has demonstrated the presence of both bacteria in the effluent. The Draft Permit establishes an *E. coli* limit of 126 cfu/ 100 mL, calculated as the geometric mean of all samples collected within any 90 day or smaller interval, as well as an acute limit of 410 cfu/ 100 mL (of which no more than 10% of samples should exceed). The Draft Permit also establishes an *Enterococci* limit of 35 cfu/ 100 mL, calculated as the geometric mean of all samples collected within any 90 day or smaller interval, as well as an acute limit of 130 cfu/ 100 mL (of which no more than 10% of samples should exceed). The Draft Permit will carry forward the monthly monitoring requirement for the months of April to October.[25]

As these are new limits, there is a compliance schedule which delays the effective date of these limits for one year from the effective date of the final permit. In the interim period, the permittee will be required to monitor and report the results for *E. coli and Enterococci*.

5.1.13 Priority Pollutants

As discussed in sections 3.2 and 5.1.4, the Permittee is authorized to accept high strength wastewater from two other beverage facilities, EPIC and CPF. To ensure that this off-site beverage wastewater does not cause excursions of permit limits or WQS, the 2013 Permit requires an annual priority pollutant scan.

The footnote in the 2013 Permit detailed that the annual priority pollutant scan required monitoring for parameters from EPA's Form 2C application, parameters 1M-13M and IV through 31V and ethanol. That application has since been updated and the numbering has changed. The list of the chemicals can be found below:

Table 5: Priority Pollutant Parameters required by 2013 Permit.

Form 2C Number	Pollutant (synonym)	CAS Number
1M	Antimony, Total	7440-36-0
2M	Arsenic. Total	7440-38-0
3M	Beryllium, Total	7440-41-7
4M	Cadmium, Total	7440-43-9
5M	Chromium. Total	7440-47-3
6M	Copper, Total	7440-50-6

[25] Pursuant to *314 CMR 4.05(5)(f)(4)* which allows for seasonal exceptions for monitoring for periods where frequency of primary and secondary contact recreation is reduced due to cold weather (primarily from November through March)

Form 2C Number	Pollutant (synonym)	CAS Number
7M	Lead, Total	7439-92-1
8M	Mercury, Total	7439-97-6
9M	Nickel, Total	7440-02-0
10M	Selenium, Total	7782-49-2
11M	Silver, Total	7440-22-4
12M	Thallium, Total	7440-28-0
13M	Zinc, Total	7440-66-6
1V	Acrolein	107-02-8
2V	Acrylonitrile	107-13-1
3V	Benzene	71-43-2
4V	Bis(Chloromethyl) Ether	542-88-1
5V	Bromoform	75-25-2
6V	Carbon Tetrachloride	56-23-5
7V	Chlorobenzene	108-90-7
8V	Chlorodibromomethane (Dibromochloromethane)	124-48-1
9V	Chloroethane	75-00-3
10V	Chloroethyl vinyl Ether	110-75-8
11V	Chloroform	67-65-3
12V	Dichlorobromoethane (Bromodichloromethane)	75-27-4
13V	Dichlorodifluoromethane	75-71-8
14V	1,1-Dichloroethane	75-27-3
15V	1,2- Dichloroethane	107-06-2
16V	1,1-Dichloroethylene (cis-1,1-Dichloroethane)	7535-4
17V	1,2-Dichloropropane	78-87-5
18V	1,3-Dichloropropene	542-75-6
19V	Ethylbenzene	100-41-4
20V	Methyl Bromide (Bromomethane)	74-83-9
21V	Methyl Chloride	74-87-3
22V	Methylene Chloride	75-09-2
23V	1,1,2,2-Tetrachloroethane	79-34-5

Form 2C Number	Pollutant (synonym)	CAS Number
24V	Tetrachloroethylene (Tetrachloroethene or perchloroethylene)	127-18-4
25V	Toluene	108-88-3
26V	1,2-Trans-Dichloroethylene	156-60-5
27V	1,1,1-Trichloroethane	71-55-6
28V	1,1,2-Trichloroethane	79-00-5
29V	Trichloroethylene	79-01-6
30V	Trichlorofluoromethane	75-69-4
31V	Vinyl Chloride	75-01-4
	Ethanol	64-17-5

EPA has reviewed the laboratory reports for the priority pollutant scans submitted from 2019 to 2024 (See Appendix A, p. A-20). Non-detects have been reported for a most of the pollutants with exception to arsenic, copper, nickel, and zinc. EPA has evaluated each of these pollutants for reasonable potential. These results are included in the reasonable potential analysis discuss in Section 5.1.11 and found in Appendix C. The annual priority pollutant scan remains a requirement in the Draft Permit as the Permittee does not control the character of the off-site beverage wastewater.

5.1.14 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[26] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from certain industrial facilities and wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

[26] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

The Facility uses a blow molding process to mold plastic canisters into beverage bottles. Plastics Molding has been identified by the EPA as a potential source of PFAS.[27] The Town of Littleton has two municipally owned drinking water wells located downstream[28] from the Facility; and therefore, EPA has determined that PFAS monitoring is necessary.

On October 20, 2020, MassDEP published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) for the sum of the following six PFAS. *See* 310 CMR 22.00.

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2, which states:

Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

The Agency published the PFAS Strategic Roadmap: EPA's Commitments to Action 2021-2024 (PFAS Strategic Roadmap), in October 2021.[29] On page 14, of this document, EPA identifies categories known or suspected to discharge PFAS including: organic chemicals, plastics & synthetic fibers (OCPSF); metal finishing; electroplating; electric and electronic components; landfills; pulp, paper & paperboard; leather tanning & finishing; plastics molding & forming; textile mills; paint formulating, and airports. On December 5, 2022, EPA issued a memorandum addressing PFAS discharges in EPA-issued NPDES Permits with recommendations for monitoring requirements for different types of facilities (PFAS Memo). This memo explains that the list of

[27] EPA, Addressing PFAS Discharges in EPA-Issued NPDES Permits and Expectations Where EPA is the Pretreatment Control Authority, April 28, 2022. https://www.epa.gov/system/files/documents/2022-04/npdes_pfas-memo.pdf
[28] See Figure 1
[29] See https://www.epa.gov/system/files/documents/2021-10/pfas-roadmap_final-508.pdf

categories known or suspected to discharge PFAS does not include all possible industrial sources that discharge PFAS. "For example, Centralized Waste Treatment (CWT) facilities may receive wastes from the aforementioned industries and should be considered for monitoring. There may also be categories of dischargers that do not meet the applicability criteria of any existing ELG; for instance, remediation sites, chemical manufacturing not covered by OCPSF, and military bases." [30]

Consistent with EPA's guidance,[31] given that PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, and to ensure there are adequate data to assess the presence and concentration of PFAS in discharges, the Draft Permit requires that the Facility conduct quarterly effluent sampling for all 40 PFAS chemicals using analytical Method 1633 (see Draft Permit Attachment E for list of PFAS parameters). The quarterly monitoring shall begin the first full calendar quarter beginning six months after the effective date of the permit. The annual monitoring for certain industrial users shall begin the first full calendar year following the effective date of the permit.

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

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

EPA has also recently published Method 1621 to screen for organofluorines in wastewater. Organofluorines (molecules with a carbon-fluorine bond) are rarely naturally occurring and the most common source of organofluorines are PFAS and non-PFAS fluorinated compounds such

[30] Radhika Fox, Assistant Administrator, EPA to Water Division Directors, EPA Regions 1-10, December 5, 2022, Subject: "Addressing PFAS Discharges in NPDES Permits and Through the Pretreatment Program and Monitoring Programs." Available at: https://www.epa.gov/system/files/documents/2022-12/NPDES_PFAS_State%20Memo_December_2022.pdf
[31] *Id*.

as pesticides and pharmaceuticals. The PFAS Memo states that the Adsorbable Organic Fluorine CWA wastewater method 1621 can be used in conjunction with Method 1633, if appropriate.

The Permittee shall monitor Adsorbable Organic Fluorine using Method 1621 once per quarter concurrently with PFAS monitoring to screen for a broader range of these types of emerging contaminants. This requirement also takes effect the first full calendar quarter following six months after the effective date of the permit.

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

5.1.15 Whole Effluent Toxicity

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

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement narrative water quality criteria calling for "no toxics in toxic amounts." *See also* 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." In addition, the Massachusetts WQSs at 314 CMR 4.03(2)(a) require no lethality to organisms passing through a mixing zone. EPA generally considers WET testing in addition to chemical specific criteria when evaluating whether discharges from a facility meet WQSs.

In accordance with current EPA guidance and State policy,[32] whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$ For a Facility with a dilution factor of less than 100, EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommends both acute and chronic toxicity testing and recommends that toxicity testing be required even if the effluent is not determined to cause or

[32] Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters. February 23, 1990.

contribute to an excursion above water quality criteria. Both EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) and the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) recommended criterion to prevent acutely toxic effects is 0.3 T.U. Further, for discharges having a dilution factor less than 10, if there is reasonable potential to exceed water quality criteria, the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) requires acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC_{50} limit should be greater than or equal to 100%.

The chronic and acute WET limits in the 2013 Permit are C-NOEC greater than or equal to 91% and LC_{50} greater than or equal to 100%, using the fathead minnow (*Pimephales promelas*) as the test species. From November 1, 2019 through October 31, 2024 (Appendix A), WET test results indicated toxicity in 0 of the 20 acute tests, with an LC_{50} % consistently at 100. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using the acute criterion of 0.3 T.U. specified in the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) (Appendix D). Because the projected downstream toxicity, 1 T.U., exceeds the acute toxicity criterion, 0.3 T.U., EPA has determined that discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs.

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

The Permittee is currently approved for the use of Alternate Dilution Water in WET testing. If the Permittee is planning to continue the use of an Alternate Dilution Water in future testing, the Permittee must follow the requirements in **Attachment C**, *NPDES Whole Effluent Toxicity Testing, Monitoring and Reporting: Self Implementing Alternate Dilution Water Guidance*, and submit a notification letter to EPA.

5.2 Outfall 002: Effluent Limitations and Monitoring Requirements

Outfall 002 discharges stormwater from buildings roofs and parking lot drains, which includes stormwater associated with materials storage, materials processing, and handling, blending and loading/unloading of product, and lawn maintenance. These flows are directed to a retention basin, prior to being combined with Outfall 001 flows for discharge to the unnamed tributary to Reedy Meadow Brook. There are oil/water separators for each of the stormwater catch basins leading to the retention basin and an oil/water separator in the discharge line to the basin

itself. At the outlet of the retention basin, there is an earthen berm and a filter fabric to provide some filtration prior to discharge. The flow rate out of the basin can be controlled manually by the Permittee. Thus, the basin can retain storm water during rainstorms and then gradually meter it out after the storm has passed, if necessary. The storm water discharge flow is measured by meter after passing through this filtration fabric in a vault labeled "S/N 002 monitoring point" and prior to being combined with the Outfall 001 discharge.

The effluent limits and reporting requirements of Section 8.U. (specially subsector U3)[33] of the Multisector General Permit (MSGP) as well as state water quality standards apply to this outfall.

5.2.1 Flow

From November 1, 2019 to October 31, 2024, Outfall 002 flow has ranged from 0.0259 MGD to 1.254 MGD with an average of 0.476 MGD. The Draft Permit will carry forward the monthly monitoring requirement via recorder or equivalent instrument, measured by meter after passing through this filtration fabric in a vault labeled "S/N 002 monitoring point" and prior to being combined with the Outfall 001 discharge.

5.2.2 Chemical Oxygen Demand (COD)

Chemical oxygen demand is the amount of oxygen needed to oxidize organic material. High COD can reduce the amount of dissolved oxygen present in the receiving water, which can be a factor in cultural eutrophication. The MSGP requires monitoring only and does not have a threshold or indicator value. However, the MSGP does provide a benchmark value of 120 mg/L. If the annual average exceeds the benchmark, additional implementation measures will need to be taken as described in section 5.2 of the MSGP.[34] COD monitoring was not required in the 2013 Permit; therefore, EPA has determined that the need for an effluent limit is not supported at this time, but monthly monitoring via grab sample will be necessary to characterize the discharge to inform future permitting decisions.

5.2.3 Total Suspended Solids

As discussed in Section 5.1.3, excess TSS in a waterbody can negatively impact water quality in multiple ways. The MSGP requires that TSS in stormwater be monitored as this monitoring serves as an indicator of how well catch basins are being maintained, as well as the filtration prior to discharge. The 2013 Permit used the benchmark value of 100 mg/l as the effluent limit.

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[33] Patriot Beverages falls under the Food and Kindred Products sector specific requirements for stormwater. Subsector U3 covers Meat Products (SIC Code 2011-2015); Dairy Products (SIC Code 2021-2026); Canned, Frozen, and Preserved Fruits, Vegetables, and Food Specialties (SIC Code 2032-2038); Bakery Products (SIC Code 2051-2053); Sugar and Confectionery Products (SIC Code 2061-2068); Beverages (SIC Code 20822087); Miscellaneous Food Preparations and Kindred Products (SIC Code 20912099); Tobacco Products (SIC Code 21112141)

[34] 2021 Multi-Sector General Permit: https://www.epa.gov/sites/default/files/2021-01/documents/2021_msgp_-_permit_parts_1-7.pdf

From November 1, 2019 to October 31, 2024, the TSS concentration has ranged from 0.4 mg/l to 139.6 mg/l with 3 exceedances. Since Outfall 002 joins up with Outfall 001 after the treatment for Outfall 001 but prior to discharge, EPA believe it is important to assure that TSS levels in the Outfall 002 discharge are controlled, as they have been shown to be variable. EPA will carry forward the daily maximum limit 100 mg/L limit as well as the monthly monitoring requirement via grab sample.

5.2.4 pH

The pH range of 5.87 – 8.3 is typical of pH levels associated with precipitation. This quarterly monitoring requirement will remain, with the Permittee required to report the range of at least three (3) grab samples taken every quarter. Monitoring the pH of the storm water may not provide an indication of the effectiveness of the SWPPP because of the influences of factors other than the facility's industrial activities on the pH of the discharge, such as lower pH precipitation. While the MSGP does not establish a threshold or indicator value for pH, Massachusetts SWQS requires class B waters to be between a range of 6.5-8.3 SU as discussed in section 5.1.2. EPA has determined that the addition of this range as an effluent limit is necessary to protect water quality.

5.2.5 Oil & Grease

Oil & grease has generally not been detected during the review period, except for five readings ranging from 0 to 5.3 mg/l. The 2013 Permit included an effluent limitation of 15 mg/L. EPA believes that this requirement must be maintained to assure that the catch basins and oil/water separators are being properly operated and maintained. The State WQS limit O&G discharges to less than 15 mg/l (see Outfall 001 discussion above). Since there are some outfall samples with detectable levels of this parameter, EPA has maintained this limit and quarterly sampling requirement of Outfall 002.

5.2.6 Phosphorus

Phosphorus results during the review period range from 0 to 10 mg/l. Since Outfall 001 has phosphorus limits and the receiving water was previously impaired for nutrients as discussed earlier, the monitor only requirement for Outfall 002 will be maintained at a monthly monitoring frequency. The SWPPP discussed below requires the Permittee to identify the potential sources of phosphorus in this discharge, such as facility grounds fertilization practices, and implement BMPs to reduce phosphorus levels that are discharged to Outfall 002 and eventually to Reedy Meadow Brook.

5.3 Special Conditions

5.3.1 Best Management Practices

Best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined that they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under CWA § 402(p) for the control of storm water discharges; 3) numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. *See* 40 CFR § 122.44(k). Pollutants may be present because they are generated during Facility operations, which could result in significant amounts of these pollutants reaching waters of the United States via discharges of stormwater.

In this case, the Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater associated with the Facility operations to comply with the non-numeric technology-based effluent limits in the Draft Permit. The Draft Permit requires the Permittee to implement and continually evaluate the Facility's structural controls (e.g., treatment systems, containment areas, holding tanks), and non-structural controls (operational procedures, site inspections, and operator training). Proper implementation of BMPs will minimize the potential discharge of pollutants related to inadequate treatment, human error, and/or equipment malfunction. The non-numeric limitations are consistent with the limitations specified in Part 2.1.2 of EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP), effective March 1, 2021.[35] Non-numeric limitations include:

- Minimize exposure of processing and material storage areas to stormwater discharges;
- Design good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Design of erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
- Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
- Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conduct employee training to ensure personnel understand the requirements of the permit;

[35] The MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp.

- Evaluate for the presence of non-stormwater discharges. Any non-stormwater discharges not explicitly authorized in the Final Permit or covered by another NPDES permit must be eliminated; and
- Minimize dust generation and vehicle tracking of industrial materials.

In addition to the general limitations described above, the Draft Permit also includes BMPs based on EPA's 2021 MSGP, including Part 8, Sector U (Food and Kindred Products).[36] BMP requirements include:

- The Draft Permit requires the Permittee to comply with the inspection requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 5.1 of the 2021 MSGP;[37]
- The Draft Permit requires the Permittee to comply with the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the permit that ensure dilution is not used as a form of treatment;[38]
- The Draft Permit requires the Permittee to comply with sector specific non-numeric technology-based effluent limitations included in Sector U (Food and Kindred Products) of the 2021 MSGP;
- The Draft Permit requires the Permittee to document the measures and methods used to control flow through the treatment system to ensure that the design flow of the treatment system is not exceeded; and
- The Draft Permit requires the Permittee to document monitoring requirements, sample analysis procedures, a schedule for the review of sample results and data validation and reporting processes.

These non-numeric effluent limitations support, and are as equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. They have been selected on a case-by-case basis based on those appropriate for this specific Facility. *See* CWA §§ 304(e) and 402(a)(1) and 40 CFR § 122.44(k). These requirements will also ensure that discharges from the Facility will meet State WQSs pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and

[36] The 2021 MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp.

[37] Where the MSGP refers to limitations, conditions or benchmarks, including the SWPPP, for the purposes of this permit, these shall refer to the limitations and conditions in this permit.

[38] Page 7-113 of EPA-821-R-04-014 states, "[w]astewater requiring primary and/or secondary treatment (because it is contaminated with oil and grease and total petroleum hydrocarbons) is typically tank bottom water, loading/unloading rack water, a portion of the tank basin water, wastewater generated during remediation, and water used for hydrostatic testing." *See* Part 2.5.2.d of the 2017 RGP for example technologies and additional resources.

maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation, and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications.

5.3.2 Stormwater Pollution Prevention Plan

On September 9, 1992, EPA issued its general permit for stormwater discharges associated with industrial activity, which, among other things, required all facilities to prepare a Stormwater Pollution Prevention Plan (SWPPP) to implement technology-based pollution prevention measures in lieu of numeric limitations. [39] The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff.[40] This Draft Permit contains BMPs for stormwater associated with the bottling facility. In addition to BMPs, the Draft Permit also contains requirements for the Permittee to develop, implement, and maintain a SWPPP for stormwater discharges associated with the bottling facility. These requirements are consistent with EPA's MSGP effective March 1, 2021. The Draft Permit specifies that the SWPPP must include the following, at a minimum:

- Stormwater pollution prevention team;
- Site description;
- Drainage area site map;
- Summary of potential pollutant sources;
- Description of all stormwater control measures; and
- Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

The development and implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described above, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

The Draft Permit requires the Permittee within ninety (90) days of the effective date of the permit to certify that the SWPPP has been prepared, meets the requirements of the permit, and documents the control measures, including BMPs, that have been implemented to reduce or eliminate the discharge of pollutants from stormwater associated with the bottling facility. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities. The

[39] Fed. Reg. 41264 (September 9, 1992).
[40] Fed. Reg. 41242 (September 9, 1992).

Permittee is required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility. The SWPPP must be maintained on site at the Facility and provided to EPA and/or the State upon request. All SWPPP records must be maintained on-site for at least three years.

5.3.3 Discharges of Chemicals and Additives

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

- Neowater 300 (rare earth chloride coagulant)
- Conquest (food grade detergent)
- Envirocid (food grade acidic base cleaner)

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

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

The Permittee must also provide an explanation that demonstrates that the discharge of such chemical or additive: 1) will not add any pollutants in concentrations that exceed any permit effluent limitation; and 2) will not add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

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

5.3.4 Compliance Schedules

Several new or more stringent effluent limitations are proposed in the Draft Permit. EPA has proposed compliance schedules in the Draft Permit (Federal regulations provide that any such schedules must require compliance "as soon as possible, but not later than the applicable statutory deadline under the CWA." 40 CFR § 122.47(a)(1). Thus, while a NPDES permit may not include a compliance schedule to meet technology-based effluent limits, a permit may include compliance schedules for meeting water quality-based effluent limits, provided that the schedule would achieve compliance with such limits "as soon as possible." See id. § 125.3(a)(2). Further, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule must include interim requirements and the dates for their achievement. See id. § 122.47(a). Massachusetts regulations for schedules of compliance can be found at 314 CMR 3.11(10).

5.3.5 Potential Alternative Permit Conditions

Part I.A of the 2013 Permit includes narrative water quality-based requirements to protect designated uses in accordance with state water quality standards. In the development of this permit, EPA Region 1 (the "Region") considered a variety of alternative permit conditions and monitoring requirements in lieu of the narrative requirements, as described in greater detail below. To ensure compliance with these applicable state narrative water quality standards, the State has indicated that it will include the narrative requirements in its draft water quality certification. Specifically, the State has notified EPA that it will propose the following narrative water quality-based requirements as state certification conditions in accordance with § 401(a) of the CWA and 40 CFR § 124.53:

- The discharge shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms.
- The discharge shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to the receiving water, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.
- The discharge shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to the receiving water.
- The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the receiving water, impart an oily taste to the edible portions of

aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

- The discharge shall be free from taste and odor in such concentrations or combinations that are aesthetically objectionable, that would impair any use assigned to the receiving water, or that would cause tainting or undesirable flavors in the edible portions of aquatic life.
- The discharge shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

Based on the State's intent to include these requirements in the state certification, EPA does not find it necessary to include the alternative permit conditions and monitoring requirements in the Draft Permit. However, if some or all of these narrative conditions are not included in the final state certification, EPA will include the applicable alternative permit conditions and monitoring requirements in the Final Permit. Therefore, EPA has described these alternative permit conditions and monitoring requirements in detail below and is soliciting public comments on the inclusion of these if the state certification does not include the applicable narrative conditions.

The alternative permit conditions and monitoring requirements described below relate to reasonable potential analyses, WET testing, visual inspections of the receiving water, and benthic surveys. Each of these are related to compliance with specific narrative state water quality standards. It should also be noted that if any of these alternative requirements and monitoring requirements were to be included in this permit reissuance, EPA may remove or reduce these in the future and/or implement an alternative permitting approach if EPA finds that these are no longer necessary to protect designated uses in accordance with state water quality standards.

To be clear, each of the items described in this section below are not included in the Draft Permit and EPA intends to include them in the Final Permit only if the corresponding narrative condition is not included in the State's final certification of this permit and pursuant to any changes based on public comments.

Reasonable Potential Analyses

Given that EPA guidance[41] directs that reasonable potential analyses should be based on critical conditions, EPA uses the pollutant concentrations based on all available information provided to EPA during the development of the permit. As discussed in more detail in the pollutant-specific sections above, this information includes data from the Permittee's most recent application, DMR data during the review period, and any other available information included in the administrative record.

[41] See 2010 NPDES Permit Writer's Manual, chapter 6 available at: https://www.epa.gov/sites/default/files/2015-09/documents/pwm_chapt_06.pdf

If the permitting authority, in this case EPA, 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).

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

> "For any pollutant without an effluent limitation in this permit, any pollutant loading greater than the proposed discharge (the "proposed discharge" is based on the chemical-specific data and the facility's design flow as described in the permit application, or any other information provided to EPA during the permitting process) is not authorized by this permit."

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

Toxicity

The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife." To ensure the receiving water is free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife, throughout the permit term, EPA will incorporate additional circumstance-dependent WET requirements described below.

Under the following circumstances, the Permittee would be required to conduct at least two accelerated re-tests at 14-day intervals, which must be started within 14 days and 28 days of receiving the results:

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

identified in permit.

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

The specific proposed TIE/TRE requirements are presented below and were developed based on guidance available in EPA's *2024 NPDES WET Permit Writers' Manual*[42]. EPA notes that the results of the TIE/TRE might also lead to additional, future NPDES permit controls, such as additional WET permit limits, chemical-specific permit limits, or a compliance requirement to reduce or eliminate toxicity.

(1) If the WET re-test described above results in a violation of the WET limits, the Permittee must immediately initiate a TIE/TRE designed to identify and reduce toxicity in the discharge. Notice of TIE/TRE study implementation is to be submitted to EPA (via email: R1NPDESReporting@epa.gov) and the State within 10 days of receiving notification of WET re-test failure.

(2) A TIE/TRE schedule and action plan must be submitted to EPA and the State as an electronic attachment to the DMR within 60 days of receipt of WET re-test failure.

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

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

[42] Available at: https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf

possibly their source(s).

(3) Quarterly "TIE/TRE Progress Reports" shall be submitted to EPA and the State as an electronic attachment to the DMR at the end of each quarter after the TIE/TRE initiation date. The progress report must list all activities and findings related to resolving toxicity, including all WET and chemical test data. The data summaries of the TIE/TRE must also be provided in a tabulated format with explanations of the procedures used and the recorded findings from the study.

(4) A "Final TIE/TRE Report" shall be submitted to EPA and the State within 45 days of the TIE/TRE termination date (as an electronic attachment to the DMR) and should summarize the TIE/TRE activities and findings, propose the corrective action(s) to be taken, and propose a schedule to complete any identified corrective action(s).

(5) After submission of the "Final TIE/TRE Report," the Permittee shall continue to submit quarterly "Toxicity Reduction Progress Reports" (as an electronic attachment to the DMR) documenting progress on the corrective actions being taken to reduce toxicity in accordance with the proposed schedule.

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

Visual Inspection of the Receiving Water

Massachusetts Surface Water Quality Standards include several narrative requirements related to aesthetics, solids and oil & grease, as follows:

(314 CMR 4.05(5)(a)) **Aesthetics**. All surface waters shall be free from pollutants in concentrations or combinations that settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

(314 CMR 4.05(3)(a)5.; (3)(b)5.; (3)(c)5.; (4)(a)5.; (4)(b)5.; and (4)(c)5.) **Solids**. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

To ensure compliance with these narrative water quality standards, Table A.1 of the permit would include a reporting requirement for "Aesthetics," and a footnote which more specifically requires the following monitoring requirements:

> Once per quarter, while discharging, the Permittee shall conduct a visual inspection of the receiving water in the vicinity of the outfall and report any changes that may be caused by the discharge as follows:
>
> 1) any observable change in odor;
> 2) any visible change in color;
> 3) any visible change in turbidity;
> 4) the presence or absence of any visible floating materials, scum or foam;
> 5) the presence or absence of any visible settleable solids; or
> 6) the presence or absence of any visible film or sheen on the surface of the water or coating the banks of the water course.
>
> Although there is no objective means to measure the impact of the discharge on the taste of the receiving water, the Permittee shall report to EPA and MassDEP any complaints it receives from the public regarding taste and/or odor and document what remedial actions, if any, it took to address such complaints.
>
> The results do not need to be submitted each quarter. Rather, a summary of the four quarterly visual inspections as well as any complaints received from the public regarding the taste of the receiving water shall be submitted as an electronic attachment to the December DMR, which is due each January 15th for the previous calendar year.

The Massachusetts "aesthetics" narrative water quality standard also seeks to protect against any discharge that, "produce[s] undesirable or nuisance species of aquatic life." Because the production of undesirable or nuisance species of aquatic life is most commonly caused by the discharge of excess nutrients, the nitrogen monitoring required in the Draft Permit, as described in Section 5.1.5 of this Fact Sheet, would address this portion of the standard.

The "solids" narrative water quality standard also requires that waters shall be "free from floating, suspended and settleable solids…that would impair the benthic biota or degrade the chemical composition of the bottom." A Benthic Survey requirement, as discussed below, would address this portion of the standard particularly with respect to settleable solids. In addition, total suspended solid (TSS) requirements in the Draft Permit are proposed based on BPJ as described in Section 5.1.3 of this Fact Sheet.

Benthic Survey

Massachusetts Surface Water Quality Standards address bottom pollutants at 314 CMR 4.05(5)(b), which requires that "[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms."

To ensure compliance with these standards, the permit would require that the Permittee conduct a benthic survey to assess impacts from the discharge to aquatic life in the benthic environment. The permit would include a requirement of one such survey this permit term during the third calendar quarter (*i.e.*, July through September) that begins at least 12 months from the effective date of the permit. The third calendar quarter represents the season of relatively low flow when the discharge has less dilution and is, therefore, more likely to impact the benthic population. The initial 12 months of the permit term allows the Permittee sufficient time to plan for this survey after permit issuance while ensuring results are available relatively soon in case further action is needed to protect the benthic population. The results of the benthic survey will assist EPA in the development of any future permit conditions needed to ensure compliance with 314 CMR 4.05(5)(b).

The specific proposed requirements will include:

> Benthic grab samples shall be taken at three locations sited along each of two transects (one immediately upstream/upgradient of the discharge at a location considered to be unimpacted by the discharge, and one downstream/downgradient of the discharge immediately outside of the estimated zone of initial dilution). Along each transect, duplicate samples shall be taken in the thalweg along with sites near each shoreline, for a total of six samples along each transect and 12 samples total. Organisms shall be sorted and identified to the lowest possible taxonomic level. Counts shall be standardized to densities per square meter of bottom. To characterize the bottom, grain size samples shall be collected at each grab site.
>
> Taxonomy must be performed by a professional freshwater macroinvertebrate taxonomist who, at a minimum, holds and maintains for the duration of the contract a certification from the Society of Freshwater Science for eastern genera in group 1 (Crustacea and Arthropods other than EPT and Chironomidae), group 2 (Ephemeroptera, Plecoptera, and Trichoptera nymphs and larvae only) and group 3 (Chironomidae larvae only).
>
> A report summarizing the results and comparing the upstream and downstream benthic populations shall be submitted by the following January 15 as an electronic attachment to the DMR.

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

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

Section 7(a)(2) of the ESA requires every federal agency, in consultation with and with the assistance of the Secretary of Interior and the Secretary of Commerce, 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 federally protected bird, terrestrial and freshwater species, while the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for listed species of marine organisms (including marine mammals and reptiles), as well as for anadromous fish species.

The federal action being considered in this case is EPA's proposed reissuance of an NPDES permit for Patriot Beverages. The Draft Permit is intended to replace the 2013 Permit in governing the Facility. As the federal agency charged with authorizing the Facility's pollutant discharges, EPA assesses potential impacts to federally listed species and critical habitat and initiates consultation to the extent required under Section 7(a)(2) of the ESA.

EPA has researched whether federal endangered or threatened species of fish, wildlife, and plants are expected in the action area of the outfalls to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this segment of Reedy Meadow Brook. There are no known federally listed threatened or endangered species or their critical habitat under the jurisdiction of NOAA Fisheries within the vicinity of the Facility's discharge(s).[43] Therefore, ESA consultation with NOAA Fisheries is not required for this federal action.

For protected species under the jurisdiction of the USFWS, one listed endangered species, the tricolored bat (*Perimyotis subflavus*) was identified as potentially occurring in the action area of the Facility's discharge(s).

According to the USFWS, tricolored bats "primarily roost among live and dead leaf clusters of live or recently dead deciduous hardwood trees" in the warm season. "In addition, tricolored bats have been observed roosting during summer among pine needles, within artificial roosts like barns, beneath porch roofs, bridges, concrete bunkers, and rarely within caves. Female tricolored bats exhibit high site fidelity, returning year after year to the same summer roosting

[43] See for USFWS at https://ecos.fws.gov/ipac/ and for NMFS at https://www.greateratlantic.fisheries.noaa.gov/protected/section7/index.html

locations. Female tricolored bats form maternity colonies and switch roost trees regularly. Males roost singly."

This species is not considered aquatic. However, because the Facility's projected action area overlaps with the general statewide range of the tricolored bat, EPA submitted an evaluation on potential effects of the project to the Information for Planning and Consultation (IPaC) system provided by the USFWS. The USFWS system confirmed by letter on December 10, 2024 that, based on the specific project information submitted, the project would have "no effect" on the tricolored bat.[44]

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

Initiation of consultation is required and shall be requested by EPA or by USFWS/NOAA Fisheries where discretionary federal involvement or control over the action has been retained or is authorized by law and if: 1) new information reveals that the action may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; 2) 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 the previous analysis; 3) a new species is listed or critical habitat designated that may be affected by the identified action; or 4) there is any incidental taking of a listed species that is not covered by an incidental take statement.

6.2 Essential Fish Habitat

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

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

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

[44] USFWS IPaC Project code: 2025-0029803, December 10, 2024

The Federal action being considered in this case is EPA's proposed NPDES permit for Patriot Beverages, which discharges though Outfalls 001 and 002, into Reedy Meadow Brook (Segment MA84B-01) in Littleton, MA. Reedy Meadow Brook is not covered by EFH designation for riverine systems at Latitude 42.6631, Longitude -71.5669 as determined by the NOAA EFH Mapper.[45] EPA's review of available EFH information indicated that this water body is not designated EFH for any federally managed species. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is not required.

7.0 Public Comments, Hearing Requests, and Permit Appeals

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the permit writer, Michele Barden at the following email address: barden.michele@epa.gov.

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

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

If for any reason, comments on the Draft Permit and/or a request for a public hearing cannot be emailed to the permit writer specified above, please contact them at telephone number: (617) 918-1539.

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

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed by contacting Michele Barden at 617-918-1539 or via email to barden.michele@epa.gov.

May 16, 2025

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

Figure 1: Location Map

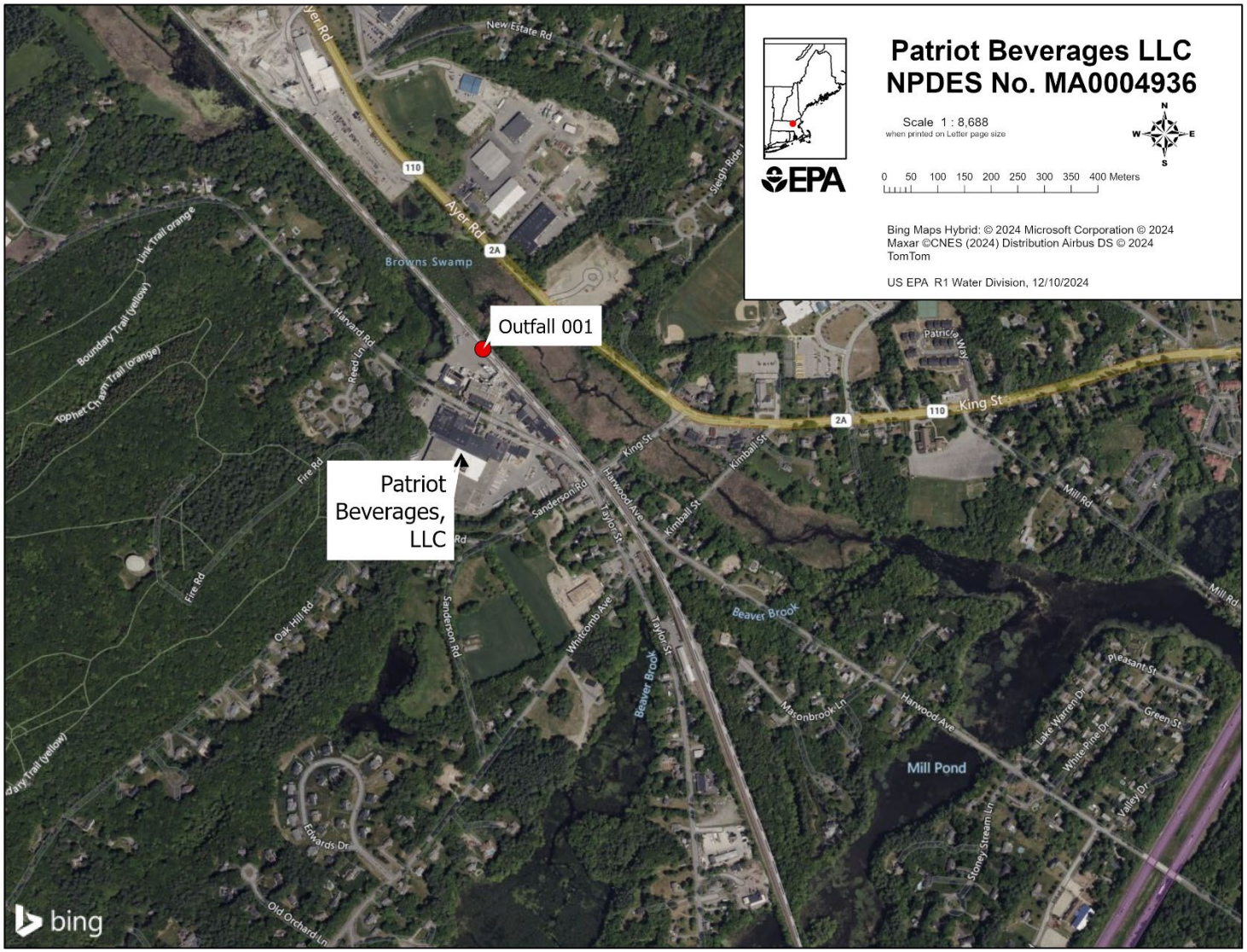


Figure 2: Site Plan

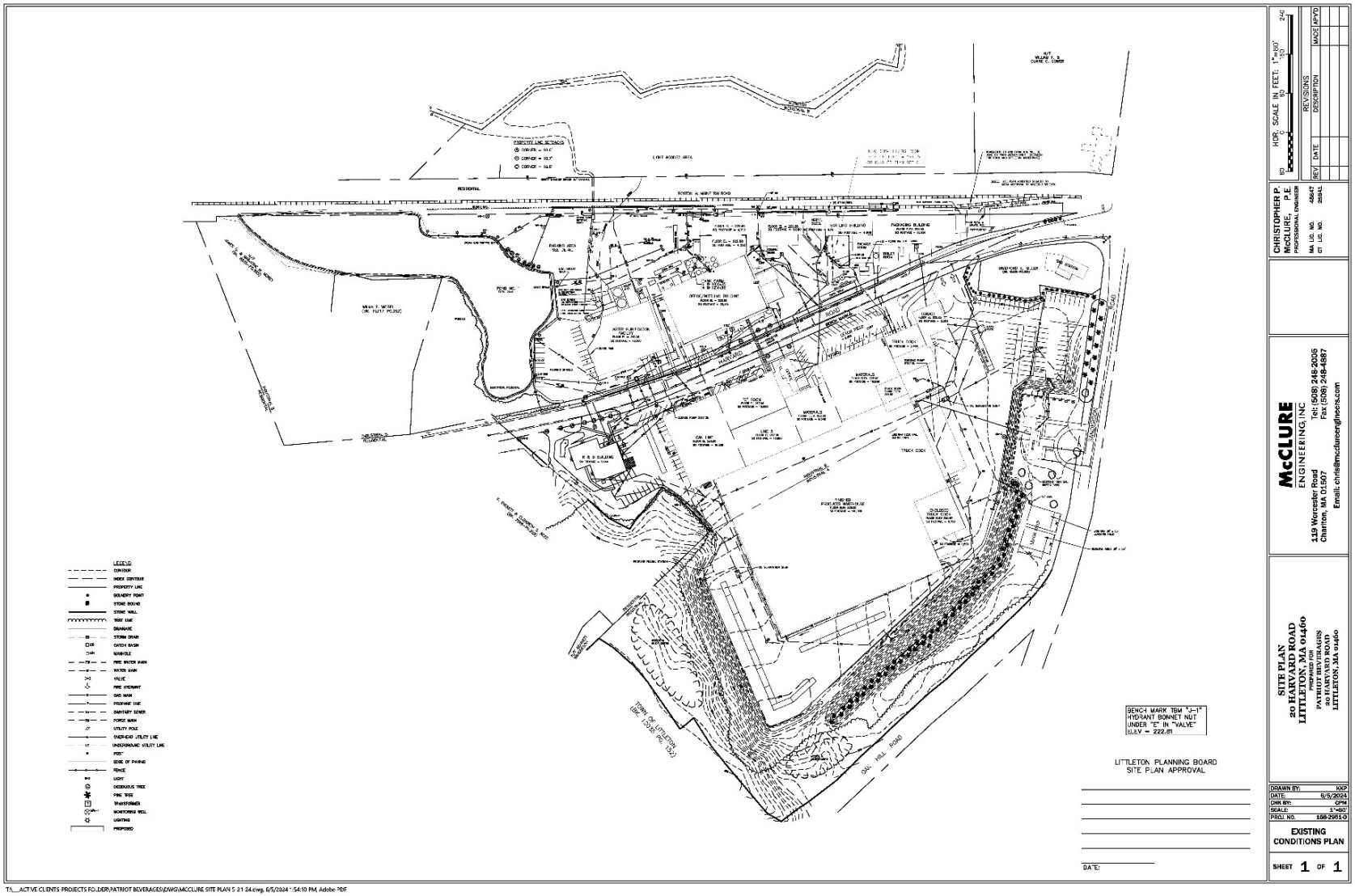


Figure 3: Beverage Production Schematic

[redacted] REDACTED - CONFIDENTIAL BUSINESS INFORMATION

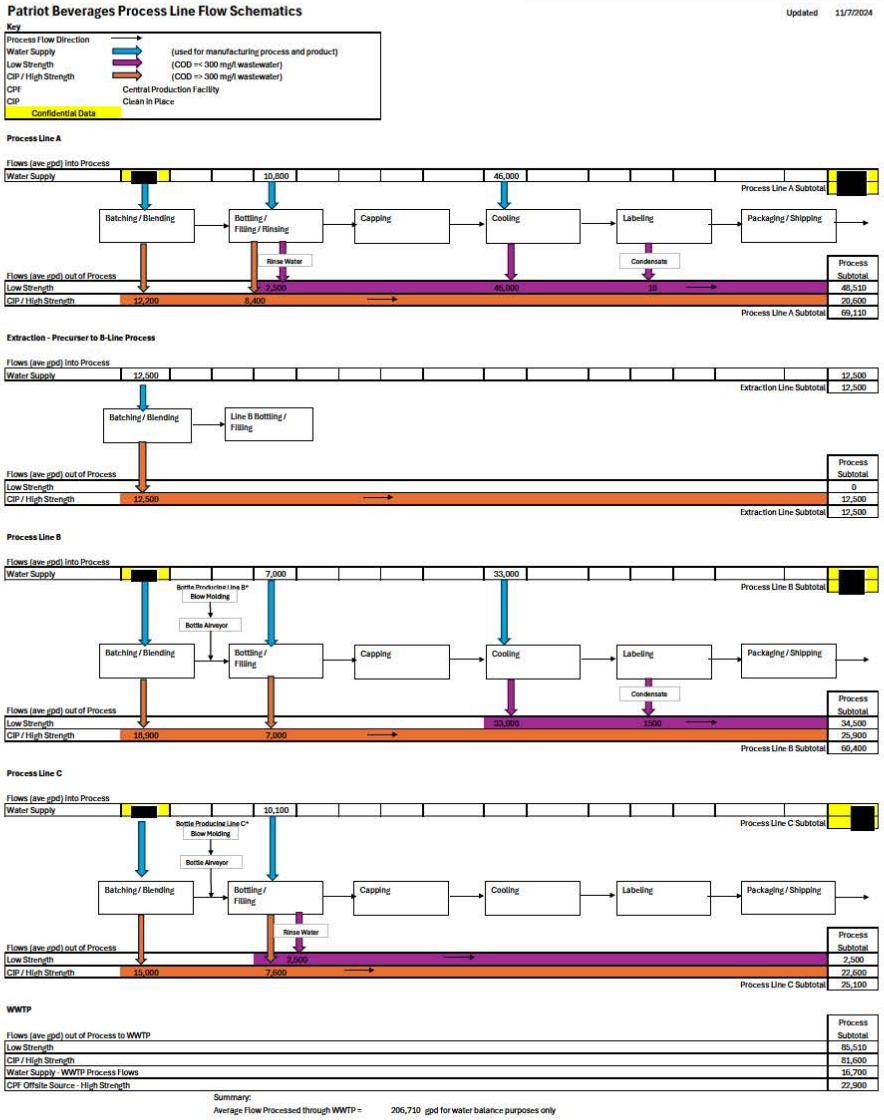


Figure 4: Water Pretreatment Schematic

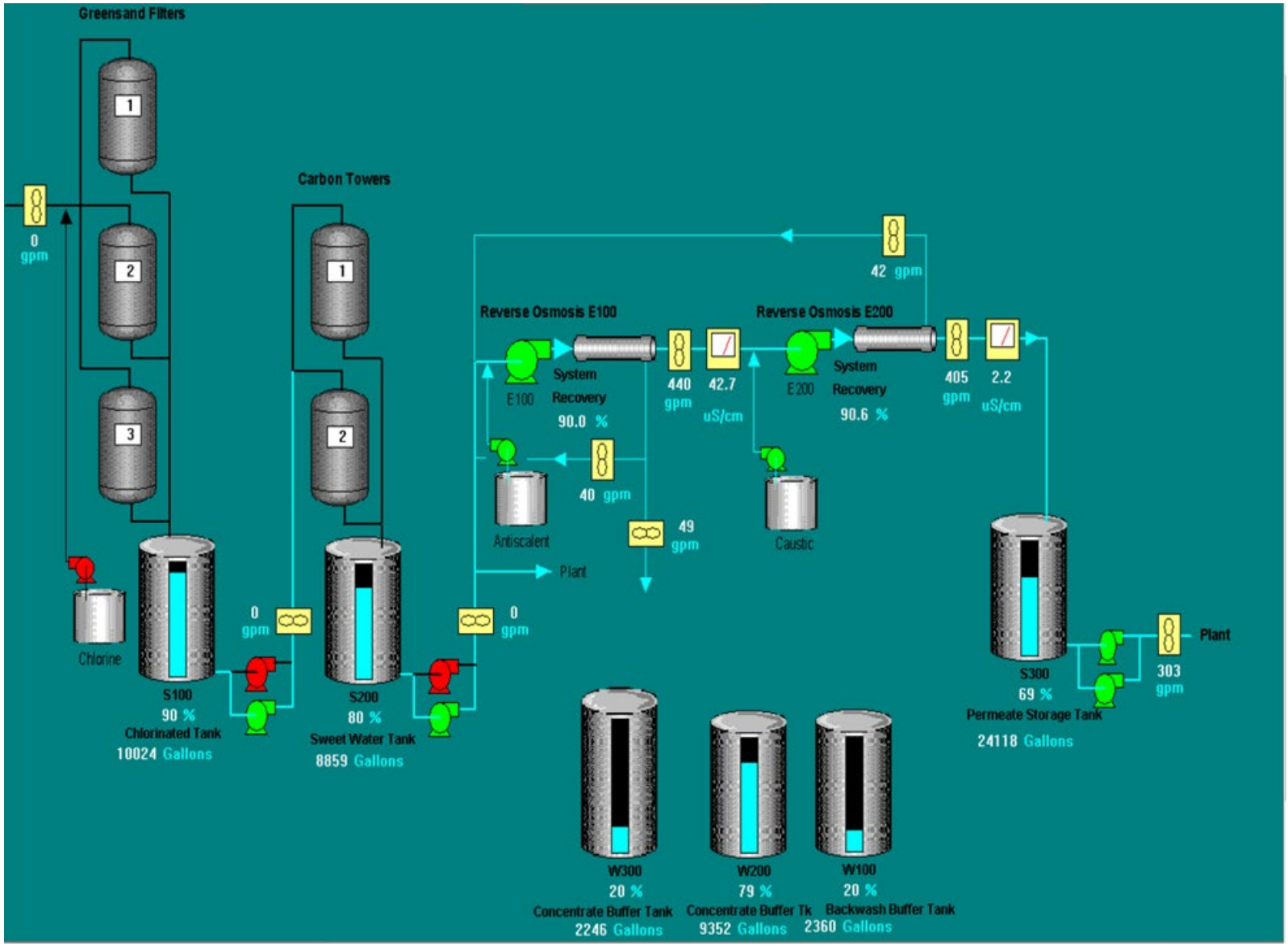


Figure 5 Wastewater Treatment Plant

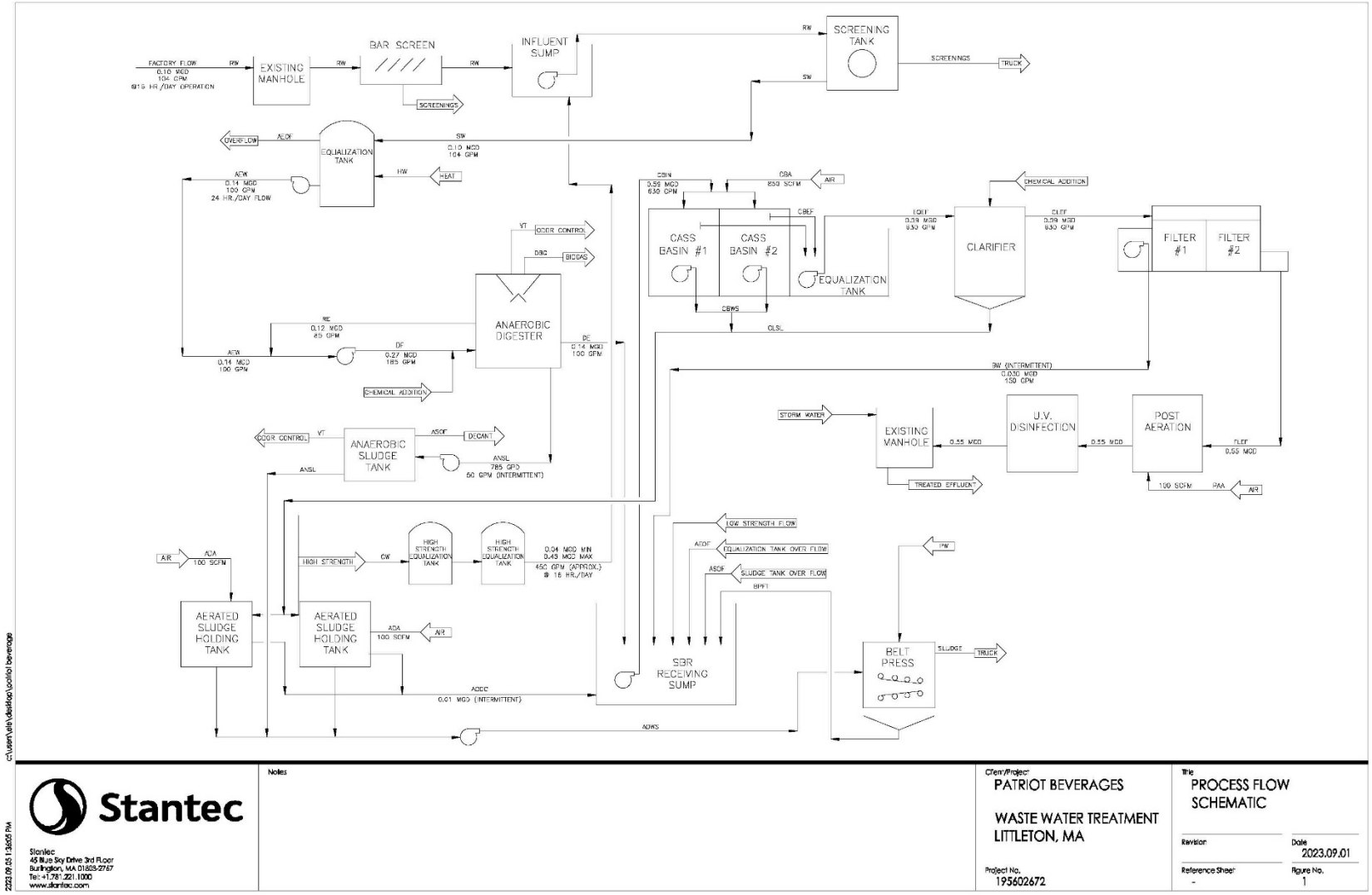


Figure 6: Reedy Meadow Brook Ambient Phosphorus Sampling Locations

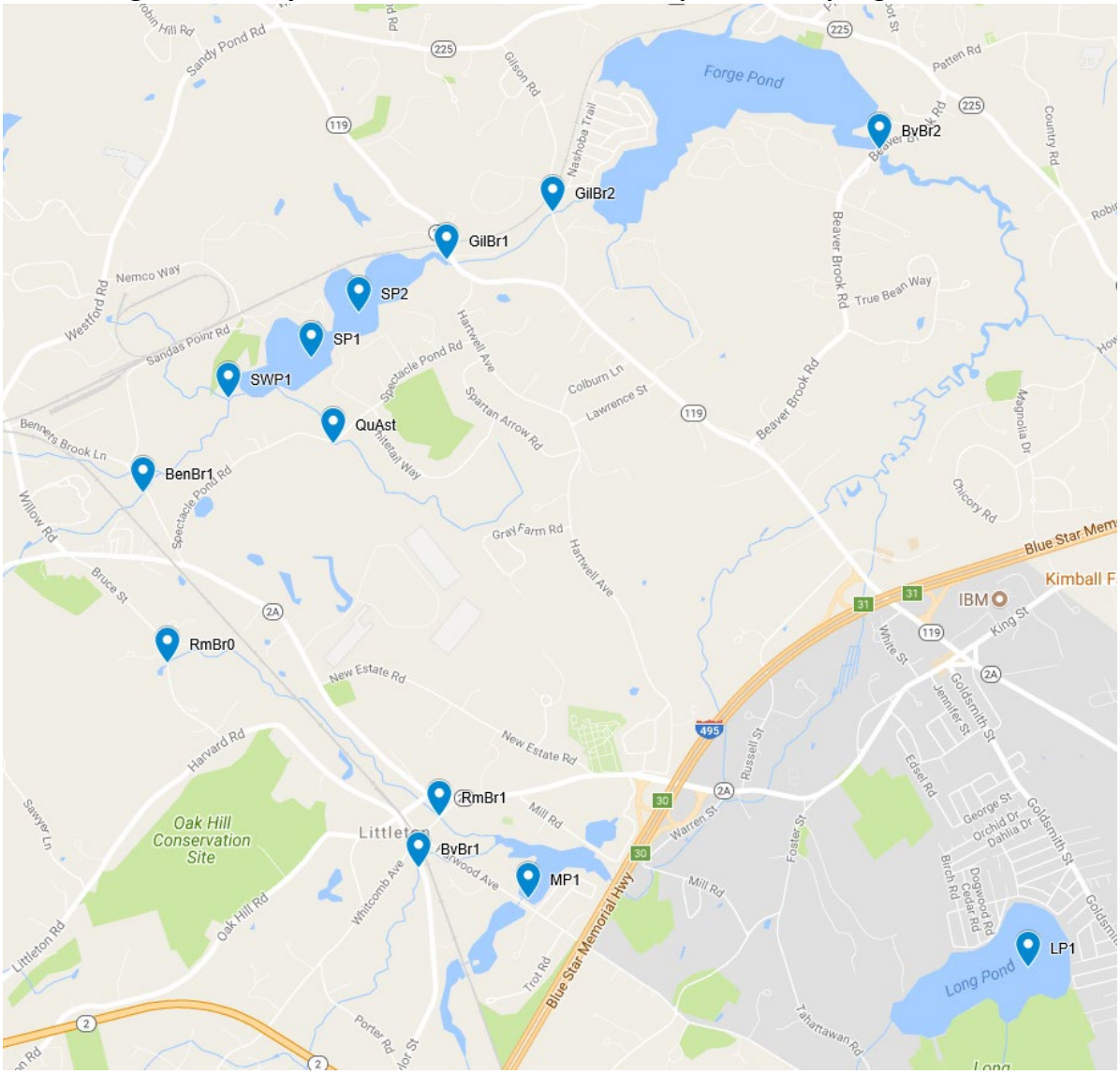
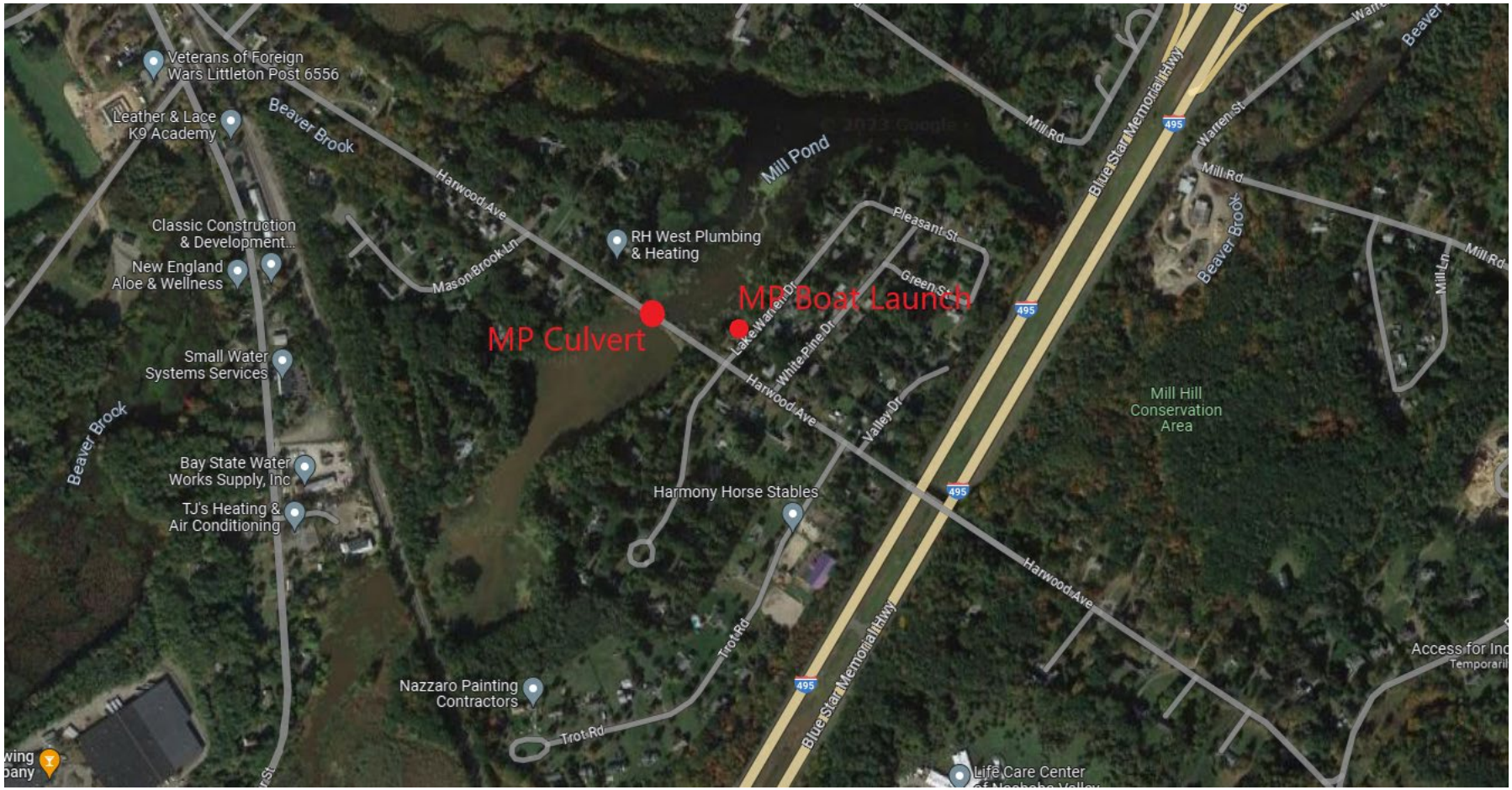


Figure 7: Mill Pond Ambient Phosphorus Sampling Sites



Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS	pH	pH
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Minimum	Maximum
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**SU**	**SU**
Effluent Limit	**0.55**	**0.75**	**10**	**20**	**10**	**20**	**6.5**	**8.3**
Minimum	**0.109**	**0.182**	**0**	**0**	**2**	**2**	**6.5**	**7.8**
Maximum	**0.362**	**0.495**	**103**	**194**	**19**	**36**	**8.2**	**8.6**
Median	**0.225**	**0.3295**	**Non-Detect**	**0**	**5**	**7**	**7.8**	**8.3**
No. of Violations	**0**	**0**	**3**	**3**	**6**	**3**	**0**	**8**
Monitoring Period End Date								
11/30/2019	0.155	0.263	5	10	**15**	**35**	7.9	8.3
12/31/2019	0.146	0.213	2.25	3	10	18	8.1	**8.4**
1/31/2020	0.151	0.206	3	4	3	5	8	8.2
2/29/2020	0.155	0.231	3	4	3	4	7.9	**8.4**
3/31/2020	0.167	0.217	2	3	NODI: 9	NODI: 9	8	8.3
4/30/2020	0.138	0.205	2	2	3	4	8.1	**8.5**
5/31/2020	0.109	0.237	6	7	4	6	8	**8.5**
6/30/2020	0.128	0.197	< 2	2	3	3	7.9	**8.5**
7/31/2020	0.128	0.185	< 2	< 2	2	3	8.1	**8.4**
8/31/2020	0.142	0.182	< 2	< 2	2	2	8.1	8.3
9/30/2020	0.159	0.216	< 5	< 19	5	6	8	8.2
10/31/2020	0.168	0.251	< 2	< 2	3	3	7.9	8.2
11/30/2020	0.13	0.198	2	4	6	9	7.8	8.3
12/31/2020	0.125	0.263	2	2	2	3	7.8	8.3
1/31/2021	0.122	0.213	< 2	3	3	4	7.8	8.3
2/28/2021	0.133	0.276	< 2	3	3	5	7.9	8.3
3/31/2021	0.16	0.27	**20**	**66**	5	9	8	8.3
4/30/2021	0.165	0.273	< 2	< 2	3	5	7.6	8
5/31/2021	0.188	0.27	< 2	< 2	3	4	7.5	8.2
6/30/2021	0.188	0.266	< 2	< 2	3	3	7.5	8.2
7/31/2021	0.209	0.309	< 2	< 2	5	10	7.9	8.2
8/31/2021	0.231	0.31	2	2	5	6	7.8	8.3
9/30/2021	0.206	0.262	< 2	< 2	NODI: E	NODI: E	7.6	**8.5**
10/31/2021	0.206	0.28	2	2	6.3	10	7.9	8.1
11/30/2021	0.224	0.37	< 2	2	4	7	7.9	**8.6**
12/31/2021	0.248	0.398	2.4	3	6.1	10	8	8.3
1/31/2022	0.199	0.341	< 2	< 2	4	5	7.6	8.3
2/28/2022	0.226	0.353	2.8	4	9	12	7.7	8.2

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Flow	Flow	BOD5	BOD5	TSS	TSS	pH	pH
	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max	Minimum	Maximum
Units	**MGD**	**MGD**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**SU**	**SU**
Effluent Limit	**0.55**	**0.75**	**10**	**20**	**10**	**20**	**6.5**	**8.3**
Minimum	**0.109**	**0.182**	**0**	**0**	**2**	**2**	**6.5**	**7.8**
3/31/2022	0.275	0.37	2.6	3	9	14	7.6	8.1
4/30/2022	0.269	0.382	2.5	4	8	11	7.8	8.2
5/31/2022	0.302	0.433	2.5	4	9	12	7.5	8.2
6/30/2022	0.26	0.366	< 2	< 2	8	10	7.2	8.2
7/31/2022	0.275	0.375	< 2	< 2	5.2	5.2	7.2	7.9
8/31/2022	0.277	0.385	3	3	10	12	7.9	8.3
9/30/2022	0.277	0.397	1.5	3	4	4	6.5	7.8
10/31/2022	0.251	0.387	< 2	< 2	6	8	7.7	8.3
11/30/2022	0.289	0.406	< 2	< 2	8	10	7.8	8.3
12/31/2022	0.315	0.422	**103**	**194**	**19**	**36**	7.4	8.2
1/31/2023	0.337	0.422	< 2	< 2	8	10	7.4	8.3
2/28/2023	0.362	0.495	2	2	**13**	16	7.7	8.2
3/31/2023	0.331	0.481	2	2	**11**	15	7	8.1
4/30/2023	0.296	0.439	2	2	8	13	7.5	8.3
5/31/2023	0.282	0.463	< 2	< 2	**14**	**29**	6.9	8.1
6/30/2023	0.258	0.347	<= 12	<= 12	8	14.2	6.7	8.3
7/31/2023	0.25	0.337	<= 4	<= 4	5	6	8.2	8.3
8/31/2023	0.273	0.349	<= 4	<= 4	4	6	8.1	8.3
9/30/2023	0.253	0.335	<= 4	<= 4	5	5	8.1	8.3
10/31/2023	0.215	0.313	<= 4	<= 4	**11.2**	15	7.9	8.3
11/30/2023	0.19	0.324	<= 4	<= 4	9	14	7.8	8.2
12/31/2023	0.155	0.337	0	0	8	14	7.9	8.3
1/31/2024	0.234	0.36	<= 4	<= 4	10	19	7.8	8.3
2/29/2024	0.242	0.328	0	0	9	20	8.2	8.3
3/31/2024	0.256	0.36	**14**	**56**	6	8	7.6	8.3
4/30/2024	0.24	0.348	4.1	4.5	5	6	7.9	8.3
5/31/2024	0.27	0.374	< 4	< 4	4	5	7.5	7.9
6/30/2024	0.245	0.349	< 4	< 4	4.1	9	7.28	8.25
7/31/2024	0.236	0.302	< 4	< 4	4	5	6.8	8.28
8/31/2024	0.246	0.331	<= 4	<= 4	5	6	7.66	8.26
9/30/2024	0.217	0.287	<= 4	<= 4	4	6	7.09	8.3
10/31/2024	0.192	0.264	<= 4	<= 4	5.25	7	7.57	8.3

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	E. coli	E. coli	TRC	TRC	DO	Ammonia	Ammonia	Ammonia
	Monthly Geometric Mean	Daily Max	Monthly Avg	Daily Max	Minimum	Monthly Avg	Monthly Avg	Daily Max
Units	CFU/100mL	CFU/100mL	ug/L	ug/L	mg/L	lb/d	mg/L	lb/d
Effluent Limit	Report	Report	12	21	7	Report	Report	Report
Minimum	0	0	0	0	6.7	0	0	0
Maximum	1100	1100	34.5	41	9.4	0.96	0.56	0.96
Median	4	4	0	0	7.32	Non-Detect	Non-Detect	Non-Detect
No. of Violations	N/A	N/A	2	2	1	N/A	N/A	N/A
Monitoring Period End Date								
11/30/2019			0	0	8.25	0.105	0.12	0.105
12/31/2019			0	0	9.4	0.05	0.1	0.05
1/31/2020			0	0	8.1	< .1	< .1	< .1
2/29/2020			0	0	7.22	< .1	< .1	< .1
3/31/2020			0	0	7.5	< .1	< .1	< .1
4/30/2020	302	302	0	0	8.55	< .1	< .1	< .1
5/31/2020	< 2	< 2	0	0	8.15	< .1	< .1	< .1
6/30/2020	< 2	< 2	0	0	8.14	< .1	< .1	< .1
7/31/2020	2	2	0	0	8.2	< .1	< .1	< .1
8/31/2020	< 2	< 2	0	0	8.25	0.1	0.1	0.1
9/30/2020	< 2	< 2	0	0	8.3	< .16	< .1	< .16
10/31/2020	20	20	0	0	8.95	0.16	0.01	0.16
11/30/2020			0	0	9	< .1	< .1	0.1
12/31/2020			0	0	8.95	< .1	< .1	< .1
1/31/2021			0	0	8.95	< .1	< .1	< .1
2/28/2021			0	0	9.2	0.19	0.15	0.19
3/31/2021			0	0	7.9	< .1	< .1	< .1
4/30/2021	0	0	0	0	7.9	< .21	< .1	< .21
5/31/2021	0	0	0	0	7.75	< .1	< .1	< .1
6/30/2021	0	0	0	0	8.75	< .1	< .1	< .1
7/31/2021	0	0	0	0	7.5	< .228	< .1	< .228
8/31/2021	12	12	0	0	7.6	< .1	< .1	< .1
9/30/2021	NODI: E	NODI: E	NODI: E	NODI: E	8.2	NODI: E	NODI: E	NODI: E
10/31/2021	0	0	0	0	7.29	< .1	< .1	< .1
11/30/2021			0	0	7.51	< .1	< .1	< .1
12/31/2021			0	0	7.32	< .1	< .1	< .1
1/31/2022			0	0	7.97	< .22	< .1	< .22
2/28/2022			0	0	7.1	< .17	< .1	< .17

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	E. coli	E. coli	TRC	TRC	DO	Ammonia	Ammonia	Ammonia
	Monthly Geometric Mean	Daily Max	Monthly Avg	Daily Max	Minimum	Monthly Avg	Monthly Avg	Daily Max
Units	CFU/100mL	CFU/100mL	ug/L	ug/L	mg/L	lb/d	mg/L	lb/d
Effluent Limit	Report	Report	12	21	7	Report	Report	Report
Minimum	0	0	0	0	6.7	0	0	0
3/31/2022			0	0	7.32	< .26	< .1	< .26
4/30/2022	3	3	0	0	7.13	< .27	< .1	< .27
5/31/2022	20	20	0	0	7.4	< .35	< .1	< .35
6/30/2022	9	9	0	0	7.24	0.12	0.12	0.12
7/31/2022	82	82	0	0	7.94	< .1	< .1	< .1
8/31/2022	10	10	0	0	7.03	< .16	< .1	< .16
9/30/2022	1	1	0	0	7.1	0.14	0.14	0.14
10/31/2022	4	4	0	0	7.2	< .1	< .1	< .1
11/30/2022			0	0	7.31	< .1	< .1	< .1
12/31/2022			0	0	7.22	< .34	< .1	< .34
1/31/2023			0	0	7.08	< .25	< .1	< .25
2/28/2023			0	0	7.3	< .37	0.1	< .37
3/31/2023			0	0	7.05	< .4	< .1	< .4
4/30/2023	9	9	0	0	7	0.39	0.1	0.39
5/31/2023	27	27	0	0	7	< .1	< .1	< .1
6/30/2023	1100	1100	0	0	**6.7**	<= .8	< .3	<= .8
7/31/2023	102	102	0	0	7.1	0.96	0.56	0.96
8/31/2023	<= 1	<= 1	0	0	7.11	< .2	< .1	< .2
9/30/2023	3.1	3.1	0	0	7.04	<= .64	<= .3	<= .64
10/31/2023	11.1	30	0	0	7.26	<= .64	<= .3	<= .64
11/30/2023			0	0	7.2	<= .8	<= .3	<= .8
12/31/2023			0	0	7.5	0	0	0
1/31/2024			0	0	7.1	<= .89	<= .3	<= .89
2/29/2024			0	0	7.4	0	0	0
3/31/2024			0	0	7	0	0	0
4/30/2024	8.6	8.6	0	0	7.1	0.157	0.3	0.199
5/31/2024	15	15	0	0	7.24	0.805	0.3	0.805
6/30/2024	40	40	< .5	< .5	7.01	<= .64	<= .3	<= .64
7/31/2024	33	33	< 22	**30**	7.07	0.72	0.42	0.72
8/31/2024	<= 1	<= 1	**34.5**	**41**	7.24	<= .53	<= .3	<= .53
9/30/2024	43	43	**20**	<= 20	7.39	0.53	<= .3	0.53
10/31/2024	NODI: B	NODI: B	NODI: B	NODI: B	7.11	<= .36	<= .3	<= .36

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	TP	TP	TP	TP	TP	Aluminum	Aluminum
	Daily Max	Monthly Avg	Monthly Avg	Annual Rolling Avg	Daily Max	Daily Max	Monthly Avg	Daily Max
Units	**mg/L**	**lb/d**	**mg/L**	**lb/d**	**lb/d**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**0.46**	**Report**	**0.23**	**1.25**	**Report**	**0.1**	**Report**
Minimum	**0**	**0.08**	**0.04**	**0**	**0**	**0.08**	**0**	**0**
Maximum	**0.56**	**1.79**	**0.92**	**0.99**	**3.93**	**1.6**	**0.134**	**0.23**
Median	**Non-Detect**	**0.32**	**0.125**	**0.16**	**0.335**	**0.185**	**0.042**	**0.0385**
No. of Violations	**N/A**	**11**	**N/A**	**11**	**11**	**N/A**	**3**	**N/A**
Monitoring Period End Date								
11/30/2019	0.12	0.14	0.11		0.4	0.21	0.015	0.015
12/31/2019	0.1	0.11	0.1		0.2	0.16	0.013	0.013
1/31/2020	< .1	0.15	0.12		0.26	0.2	0.028	0.028
2/29/2020	< .1	0.15	0.11		0.19	0.13	0.034	0.034
3/31/2020	< .1	0.18	0.13		0.3	0.24	0.058	0.058
4/30/2020	< .1		0.11	0.13	0.27	0.18	0.047	0.047
5/31/2020	< .1		0.1	0.13	0.27	0.11	0.048	0.048
6/30/2020	0.1		0.1	0.12	0.12	0.11	0.047	0.047
7/31/2020	< .1		0.09	0.09	0.11	0.08	0.074	0.074
8/31/2020	0.1		0.07	0.08	0.1	0.09	0.049	0.049
9/30/2020	< .1		0.08	0.12	0.26	0.15	0.047	0.047
10/31/2020	0.01		0.09	0.15	0.23	0.11	0.058	0.058
11/30/2020	< .1	0.13	0.12		0.18	0.13	0.027	0.027
12/31/2020	< .1	0.12	0.11		0.14	0.13	0.034	0.034
1/31/2021	< .1	0.13	0.13		0.28	0.16	0.013	0.013
2/28/2021	0.15	0.13	0.12		0.28	0.18	0.023	0.023
3/31/2021	< .1	0.25	0.19		0.4	0.3	0.021	0.021
4/30/2021	< .1		0.11	0.16	0.29	0.16	0.036	0.036
5/31/2021	< .1		0.11	0.17	0.29	0.13	0.035	0.035
6/30/2021	< .1		0.12	0.21	0.34	0.18	0.036	0.036
7/31/2021	< .1		0.12	0.22	0.31	0.12	0.044	0.044
8/31/2021	< .1		0.12	0.15	0.43	0.18	0.05	0.05
9/30/2021	NODI: E		0.1	0.16	0.19	0.11	NODI: E	NODI: E
10/31/2021	< .1		0.36	0.18	0.7	0.38	0.043	0.043
11/30/2021	< .1	**0.55**	0.37		**1.34**	0.89	0.05	0.05
12/31/2021	< .1	**0.75**	0.44		**1.7**	1.1	0.043	0.043
1/31/2022	< .1	**0.93**	0.56		**2.14**	1.2	0.022	0.022
2/28/2022	< .1	**0.64**	0.34		**2.08**	0.38	0.024	0.024

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Ammonia	TP	TP	TP	TP	TP	Aluminum	Aluminum
	Daily Max	Monthly Avg	Monthly Avg	Annual Rolling Avg	Daily Max	Daily Max	Monthly Avg	Daily Max
Units	**mg/L**	**lb/d**	**mg/L**	**lb/d**	**lb/d**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**0.46**	**Report**	**0.23**	**1.25**	**Report**	**0.1**	**Report**
Minimum	**0**	**0.08**	**0.04**	**0**	**0**	**0.08**	**0**	**0**
3/31/2022	< .1	**0.99**	0.43		**2.02**	0.84	0.02	0.02
4/30/2022	< .1		0.46	**0.99**	**2.41**	0.88	0.024	0.024
5/31/2022	< .1		0.32	<= .81	<= 2.04	0.71	0.024	0.024
6/30/2022	0.12		0.14	**0.3**	0.42	0.28	0.03	0.03
7/31/2022	< .1		0.14	0.14	0.55	0.19	0.043	0.043
8/31/2022	< .1		0.19	**0.47**	**1.29**	0.55	0.06	0.06
9/30/2022	0.14		0.07	0.18	0.33	0.1	0.041	0.041
10/31/2022	< .1		0.13	**0.53**	0.45	0.19	0.045	0.045
11/30/2022	< .1	0.37	0.15		0.79	0.24	0.032	0.032
12/31/2022	< .1	**0.69**	0.25		1.18	0.41	0.033	0.033
1/31/2023	< .1	**0.48**	0.17		0.81	0.23	0.056	0.056
2/28/2023	< .1	**1.77**	0.59		**3.93**	1.27	**0.108**	0.108
3/31/2023	< .1	**1.08**	0.35		**1.85**	0.46	0.065	0.065
4/30/2023	0.1		0.3	**0.71**	1.12	0.64	**0.134**	0.134
5/31/2023	0.1		0.3	**0.73**	1.23	0.35	0.08	0.08
6/30/2023	< .3		0.37	**0.96**	1.2	0.45	<= .05	<= .05
7/31/2023	0.56		0.22	**0.51**	0.47	0.09	0.1	0.1
8/31/2023	< .1		0.13	**0.33**	0.47	0.21	0.084	0.084
9/30/2023	<= .3		0.1	**0.25**	0.4	0.16	0.083	0.083
10/31/2023	<= .3		0.16	**0.38**	0.78	0.32	**0.11**	0.11
11/30/2023	<= .3	0.32	0.2		0.55	0.25	0.089	0.089
12/31/2023	0	0.08	0.16		0.26	0.26	0	0
1/31/2024	<= .3	**1.79**	0.92		**3.74**	1.6	<= .05	<= .05
2/29/2024	0	0.17	0.08		0.3	0.15	0	0
3/31/2024	0	**0.57**	0.24		**1.67**	0.73	0.064	0.061
4/30/2024	0.3		0.079	0.16	0.19	0.12	0.05	0
5/31/2024	0.3		0.06	0.11	0.17	0.08	0.05	0.05
6/30/2024	<= .3		0.073	0.13	0.15	0.083	<= .05	<= .05
7/31/2024	0.42		0.04	0.151	0.21	0.14	0.0436	0.23
8/31/2024	<= .3		0.089	0.156	0.193	0.14	<= .05	<= .05
9/30/2024	<= .3		0.082	0.137	0.188	0.13	<= .05	<= .05
10/31/2024	<= .3		0.086	0.123	0.189	0.11	<= .05	<= .05

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Streptococci, fecal general	Oil & grease	Streptococci, fecal general	Temperature, water deg. fahrenheit
	Monthly Geometric Mean	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	CFU/100mL	deg F
Effluent Limit	Report	15	Report	83
Minimum	0	0	0	50
Maximum	2419	2.5	2419	88
Median	31	Non-Detect	31	76.5
No. of Violations	N/A	0	N/A	4
Monitoring Period End Date				
11/30/2019		1.47		73
12/31/2019		NODI: 9		71
1/31/2020		NODI: 9		71
2/29/2020		< 2.22		70
3/31/2020		NODI: 9		72
4/30/2020	0	NODI: 9	0	71
5/31/2020	0	< 2.11	0	77
6/30/2020	23	NODI: 9	23	82
7/31/2020	5	NODI: 9	5	**84**
8/31/2020	2	< 2.11	2	83
9/30/2020	36	NODI: 9	36	81
10/31/2020	45	NODI: 9	45	75
11/30/2020		< 2.11		76
12/31/2020		NODI: 9		69
1/31/2021		NODI: 9		65
2/28/2021		< 2.11		63
3/31/2021		NODI: 9		72
4/30/2021	3	NODI: 9	3	74
5/31/2021	1	< 2	1	80
6/30/2021	31	NODI: 9	31	83
7/31/2021	2	NODI: 9	2	83
8/31/2021	62	< 2	62	82
9/30/2021	NODI: E	NODI: E	NODI: E	81
10/31/2021	10	< 2.11	10	75
11/30/2021		< 2		50
12/31/2021		NODI: 9		70
1/31/2022		NODI: 9		65
2/28/2022		< 2		67

Outfall - Monitoring Location - Limit Set: 001 - 1 - A

Parameter	Streptococci, fecal general	Oil & grease	Streptococci, fecal general	Temperature, water deg. fahrenheit
	Monthly Geometric Mean	Daily Max	Daily Max	Daily Max
Units	CFU/100mL	mg/L	CFU/100mL	deg F
Effluent Limit	Report	15	Report	83
Minimum	0	0	0	50
3/31/2022		NODI: 9		69
4/30/2022	14	NODI: 9	14	75
5/31/2022	16	< 2.11	16	81
6/30/2022	46	2.5	46	77
7/31/2022	177	NODI: 9	395	82
8/31/2022	32	< 2	32	**88**
9/30/2022	24	< 2	24	**87**
10/31/2022	27	NODI: 9	27	77
11/30/2022		2.1		77
12/31/2022		NODI: 9		75
1/31/2023		NODI: 9		73
2/28/2023		< .5		75
3/31/2023		NODI: 9		76
4/30/2023	32	NODI: 9	32	79
5/31/2023	47	< .5	47	80
6/30/2023	200	NODI: 9	200	**85**
7/31/2023	1989	NODI: 9	1989	79
8/31/2023	690	<= 1.4	690	83
9/30/2023	< 2419	NODI: 9	< 2419	80
10/31/2023	2419	NODI: 9	2419	78
11/30/2023		<= 1.5		74
12/31/2023		NODI: 9		74
1/31/2024		NODI: 9		73
2/29/2024		0		83
3/31/2024		NODI: 9		76
4/30/2024	96	NODI: 9	96	77
5/31/2024	12	< 5	12	76
6/30/2024	2419	NODI: 9	2419	82
7/31/2024	580	NODI: 9	580	83
8/31/2024	1	<= 5	1	82
9/30/2024	730	NODI: 9	730	80
10/31/2024	66.33	NODI: 9	66.33	76

Outfall - Monitoring Location - Limit Set: 001 - 1 - T

Parameter	LC50 Acute Pimephales	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Priority pollutants total effluent
	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Monthly Avg
Units	%	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	100	Report	Report	Report	Report	Report	Report	Report
Minimum	100	0	0	0	0	0	0	0
Maximum	100	155	1	4700	0.6	27	13	293150
Median	100	50	Non-Detect	1.85	Non-Detect	4.5	6	0
No. of Violations	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
1/31/2020	100	56	< .0001	1.5	< .3	5	11	
4/30/2020	100	70	< .1	1.5	0.6	4	8	<= 4.5
5/31/2020								0
6/30/2020								NODI: 9
7/31/2020	100	52	< .1	< 1	< .3	7	10	
10/31/2020	100	58	< .1	2	< .3	27	7	
1/31/2021	100	40	< .1	1.5	< .5	9	12	
4/30/2021	100	43	< .1	1.1	< .3	3	4	0
5/31/2021								0
6/30/2021								NODI: 9
7/31/2021	100	48	< .1	1.2	< .3	2	6	
10/31/2021	100	54	< 1	1.8	0.5	4	5	
1/31/2022	100	35	< .1	2.8	< .3	4	2	
4/30/2022	100	14	< .1	1.7	0.06	5	5	17
5/31/2022								0
6/30/2022								NODI: 9
7/31/2022	100	57	< .1	< 1	< .3	3	6	
10/31/2022	100	44	< .01	1.9	< .03	3	4	
1/31/2023	100	24	< .1	1700	< .3	3	6	
4/30/2023	100	90	< .001	< .004	< .001	6	9	0
5/31/2023								NODI: 9
6/30/2023								0
7/31/2023	100	155	< .01	6.2	< 10	9	13	
10/31/2023	100	91	< .1	4700	< 1	4	6	
1/31/2024	100	59	1	2.4	< 3	11	9	
4/30/2024	100	0	< 4	13	0	< 10	< 10	175225
5/31/2024								280000

Outfall - Monitoring Location - Limit Set: 001 - 1 - T

Parameter	LC50 Acute Pimephales	Aluminum	Cadmium	Copper	Lead	Nickel	Zinc	Priority pollutants total effluent
	Daily Min	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Monthly Avg
Units	**%**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**100**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**100**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
6/30/2024								293150
7/31/2024	100	18	< .1	4.3	< .3	10	5	
10/31/2024	100	11	<= .5	4.2	<= .3	19	2	

Outfall - Monitoring Location - Limit Set: 001 - 1 - T

Parameter	Priority pollutants total effluent	Noel Statre 7Day Chronic Pimephales
	Daily Max	Daily Min
Units	ug/L	%
Effluent Limit	Report	91
Minimum	0	0
Maximum	280000	100
Median	0	100
No. of Violations	N/A	1
Monitoring Period End Date		
1/31/2020		100
4/30/2020	<= 5	100
5/31/2020	0	
6/30/2020	NODI: 9	
7/31/2020		100
10/31/2020		100
1/31/2021		100
4/30/2021	0	100
5/31/2021	0	
6/30/2021	NODI: 9	
7/31/2021		100
10/31/2021		100
1/31/2022		100
4/30/2022	32	100
5/31/2022	0	
6/30/2022	NODI: 9	
7/31/2022		100
10/31/2022		100
1/31/2023		< 6.25
4/30/2023	0	100
5/31/2023	NODI: 9	
6/30/2023	0	
7/31/2023		100
10/31/2023		100
1/31/2024		100
4/30/2024	280000	100
5/31/2024	280000	

Outfall - Monitoring Location - Limit Set: 001 - 1 - T

Parameter	Priority pollutants total effluent	Noel Statre 7Day Chronic Pimephales
	Daily Max	Daily Min
Units	ug/L	%
Effluent Limit	Report	91
Minimum	0	0
6/30/2024	280000	
7/31/2024		100
10/31/2024		100

Outfall - Monitoring Location - Limit Set: 001 - O - T

Parameter	Aluminum
	Monthly Avg
Units	mg/L
Effluent Limit	0.1
Minimum	0
Maximum	0.091
Median	0.0435
No. of Violations	0
Monitoring Period End Date	
1/31/2020	0.056
4/30/2020	0.07
7/31/2020	0.052
10/31/2020	0.058
1/31/2021	<= .04
4/30/2021	0.043
7/31/2021	0.048
10/31/2021	0.054
1/31/2022	0.035
4/30/2022	0.01
7/31/2022	0.057
10/31/2022	0.044
1/31/2023	0.024
4/30/2023	0.09
7/31/2023	0.01
10/31/2023	0.091
1/31/2024	0.01
4/30/2024	< .05
7/31/2024	0.018
10/31/2024	0.011

Outfall - Monitoring Location - Limit Set: 002 - 1 - A

Parameter	Flow	TSS	TP
	Daily Max	Daily Max	Daily Max
Units	MGD	mg/L	mg/L
Effluent Limit	Report	100	Report
Minimum	0.0259	0.4	0
Maximum	1.254	139.6	10
Median	0.0915	6.2	0.12
No. of Violations	N/A	3	N/A
Monitoring Period End Date			
11/30/2019	0.082	4.8	0.09
12/31/2019	0.108	36.6	0.14
1/31/2020	1.254	**139.6**	2
2/29/2020	0.067146	45.8	8.51
3/31/2020	0.196	**110.2**	0.59
4/30/2020	0.157	2.1	0.05
5/31/2020	0.107	6.2	0.05
6/30/2020	0.0347	**131.8**	0.73
7/31/2020	0.0465	1	0.11
8/31/2020	0.037	19.8	0.16
9/30/2020	0.0369	50	0.07
10/31/2020	0.043	6.8	0.22
11/30/2020	0.028	4.8	0.06
12/31/2020	0.464	1.9	0.01
1/31/2021	0.18	10	0.02
2/28/2021	0.0259	3.1	0.15
3/31/2021	0.035	4.5	0.02
4/30/2021	0.094	75.6	0.14
5/31/2021	0.082	4.7	0.05
6/30/2021	0.067	4.3	0.17
7/31/2021	0.392	10.4	0.13
8/31/2021	0.089	88	10
9/30/2021	0.078	3.9	0.15
10/31/2021	0.357	3.1	0.19
11/30/2021	0.254	37	1.5
12/31/2021	0.047	0.4	0.1
1/31/2022	0.055607	2.3	0.06
2/28/2022	0.195	1.2	0.06
3/31/2022	0.06	1	0.12
4/30/2022	0.0868	5.2	0.1
5/31/2022	0.0597	5.3	0.19
6/30/2022	0.074	83.2	0.95
7/31/2022	0.0576	4.6	0.12

Outfall - Monitoring Location - Limit Set: 002 - 1 - A

Parameter	Flow	TSS	TP
	Daily Max	Daily Max	Daily Max
Units	MGD	mg/L	mg/L
Effluent Limit	Report	100	Report
Minimum	0.0259	0.4	0
8/31/2022	0.0349	6.2	0.12
9/30/2022	0.123	2.8	0.1
10/31/2022	0.071	6.2	0.14
11/30/2022	0.058	5.2	0.07
12/31/2022	0.261	1.8	0.05
1/31/2023	0.24	10	0.05
2/28/2023	0.195	20.6	0.08
3/31/2023	0.124	1.4	0.16
4/30/2023	0.112	1.4	0.11
5/31/2023	0.108068	46.8	0.576
6/30/2023	0.17	8.3	0.17
7/31/2023	0.457	30.8	0.11
8/31/2023	0.289	6.4	0.18
9/30/2023	0.326	5.6	3.7
10/31/2023	0.297	13.6	0.053
11/30/2023	0.053	100	0.43
12/31/2023	0.821	4.2	0.11
1/31/2024	0.825	1.4	0.068
2/29/2024	0.305	0.4	<= .05
3/31/2024	0.563	1	<= .05
4/30/2024	0.34	20.4	0.07
5/31/2024	0.097	20.4	0.095
6/30/2024	0.069459	6.2	0.23
7/31/2024	0.063572	23.4	0.55
8/31/2024	0.065507	18	0.31
9/30/2024	0.050417	20.6	0.56
10/31/2024	0.033334	22.8	0.11

0.47583333

Outfall - Monitoring Location - Limit Set: 002 - 1 - Q

Parameter	pH
	Maximum
Units	SU
Effluent Limit	Report
Minimum	5.87
Maximum	8.3
Median	6.385
No. of Violations	N/A
Monitoring Period End Date	
11/30/2019	6.19
12/31/2019	6.32
1/31/2020	6.44
2/29/2020	6.53
3/31/2020	6.53
4/30/2020	6.24
5/31/2020	6.24
6/30/2020	6.68
7/31/2020	5.95
8/31/2020	6.78
9/30/2020	6.24
10/31/2020	6.25
11/30/2020	5.87
12/31/2020	6.06
1/31/2021	6.06
2/28/2021	6.69
3/31/2021	5.9
4/30/2021	6.11
5/31/2021	6.41
6/30/2021	6.14
7/31/2021	6.1
8/31/2021	6.33
9/30/2021	6.22
10/31/2021	6.22
11/30/2021	6.47
12/31/2021	8.3
1/31/2022	6.7
2/28/2022	6.43
3/31/2022	6.4
4/30/2022	6.36
5/31/2022	6.2
6/30/2022	6.39
7/31/2022	6.79

Outfall - Monitoring Location - Limit Set: 002 - 1 - Q

Parameter	pH
	Maximum
Units	SU
Effluent Limit	Report
Minimum	5.87
8/31/2022	6.62
9/30/2022	7.9
10/31/2022	6.32
11/30/2022	6.28
12/31/2022	6.15
1/31/2023	6.15
2/28/2023	6.52
3/31/2023	6.26
4/30/2023	6.3
5/31/2023	8.1
6/30/2023	8.28
7/31/2023	8.3
8/31/2023	8.26
9/30/2023	6.27
10/31/2023	8.2
11/30/2023	6.66
12/31/2023	6.14
1/31/2024	6.38
2/29/2024	8.3
3/31/2024	6.4
4/30/2024	6.37
5/31/2024	6.5
6/30/2024	6.5
7/31/2024	6.5
8/31/2024	6.5

Outfall - Monitoring Location - Limit Set: 002 - 1 - T

Parameter	Oil & grease
	Daily Max
Units	mg/L
Effluent Limit	15
Minimum	0
Maximum	5.3
Median	Non-Detect
No. of Violations	0
Monitoring Period End Date	
11/30/2019	1.68
2/29/2020	< 2.11
5/31/2020	< 2.11
8/31/2020	< 2.11
11/30/2020	< 2
2/28/2021	< 2.11
5/31/2021	< 2
8/31/2021	< 2.11
11/30/2021	< 2
2/28/2022	< 2.11
5/31/2022	< 2
8/31/2022	< 2
11/30/2022	3.9
2/28/2023	1.2
5/31/2023	0.89
8/31/2023	<= 1.5
11/30/2023	0
2/29/2024	0
5/31/2024	5.3
8/31/2024	<= 5.3

Outfall - Monitoring Location - Limit Set: 002 - IM - T

Parameter	pH
	Daily Max
Units	SU
Effluent Limit	Report
Minimum	5.87
Maximum	6.78
Median	6.44
No. of Violations	N/A
Monitoring Period End Date	
11/30/2019	6.19
2/29/2020	6.53
5/31/2020	6.24
8/31/2020	6.78
11/30/2020	5.87
2/28/2021	6.69
5/31/2021	6.41
8/31/2021	6.33
11/30/2021	6.47
2/28/2022	6.43
5/31/2022	6.2
8/31/2022	6.62
11/30/2022	6.28
2/28/2023	6.52
5/31/2023	6.34
8/31/2023	6.24
11/30/2023	6.66
2/29/2024	6.45
5/31/2024	6.5
8/31/2024	6.5

Patriot Beverages
Priority Pollutant Scans

Form 2C Number	Pollutant	CAS Number	2024	2023	2022	2021	2020	2019
1M	Antimony, Total	7440-36-0	ND	ND	ND	ND	ND	ND
2M	Arsenic. Total	7440-38-0	0.017	ND	0.032	ND	0.005	0.011
3M	Beryllium, Total	7440-41-7	ND	ND	ND	ND	ND	ND
4M	Cadmium, Total	7440-43-9	ND	ND	ND	ND	ND	ND
5M	Chromium. Total	7440-47-3	ND	ND	ND	ND	ND	ND
6M	Copper, Total	7440-50-6	0.013	ND	ND	ND	ND	ND
7M	Lead, Total	7439-92-1	ND	ND	ND	ND	ND	ND
8M	Mercury, Total	7439-97-6	ND	ND	ND	ND	ND	ND
9M	Nickel, Total	7440-02-0	ND	0.004	0.002	ND	0.004	0.007
10M	Selenium, Total	7782-49-2	ND	ND	ND	ND	ND	ND
11M	Silver, Total	7440-22-4	ND	ND	ND	ND	ND	ND
12M	Thallium, Total	7440-28-0	ND	ND	ND	ND	ND	ND
13M	Zinc, Total	7440-66-6	ND	0.007	ND	ND	ND	ND
1V	Acrolein	107-02-8		ND		ND	ND	ND
2V	Acrylonitrile	107-13-1		ND		ND	ND	ND
3V	Benzene	71-43-2	ND	ND		ND	ND	ND
4V	Bis(Chloromethyl) Ether	542-88-1						
5V	Bromoform	75-25-2	ND	ND		ND	ND	ND
6V	Carbon Tetrachloride	56-23-5	ND	ND		ND	ND	ND
7V	Chlorobenzene	108-90-7	ND	ND		ND	ND	ND
8V	Chlorodibromomethane (Dibromochloromethane)	124-48-1	ND	ND		ND	ND	ND
9V	Chloroethane	75-00-3	ND	ND		ND	ND	ND
10V	Chloroethylvinyl Ether	110-75-8		ND		ND	ND	ND
11V	Chloroform	67-65-3		ND		ND	ND	ND
12V	Dichlorobromoethane (Bromodichloromethane)	75-27-4	ND	ND		ND	ND	ND
13V	Dichlorodifluoromethane	75-71-8						
14V	1,1-Dichloroethane	75-27-3	ND	ND		ND	ND	ND
15V	1,2- Dichloroethane	107-06-2	ND	ND		ND	ND	ND
16V	1,1-Dichloroethylene (cis-1,1-Dichloroethane)	7535-4	ND			ND	ND	ND
17V	1,2-Dichloropropane	78-87-5	ND			ND	ND	ND
18V	1,3-Dichloropropene	542-75-6	ND			ND	ND	ND
19V	Ethylbenzene	100-41-4	ND	ND		ND	ND	ND
20V	Methyl Bromide (Bromomethane)	74-83-9	ND	ND		ND	ND	ND
21V	Methyl Chloride	74-87-3				ND		
22V	Methylene Chloride	75-09-2	ND	ND		ND	ND	ND
23V	1,1,2,2-Tetrachloroethane	79-34-5	ND	ND		ND	ND	ND
24V	Tetrachloroethylene (Tetrachloroethene or perchloroethylene)	127-18-4	ND			ND	ND	ND
25V	Toluene	108-88-3	ND	ND		ND	ND	ND
26V	1,2-Trans-Dichloroethylene	156-60-5				ND	ND	ND
27V	1,1,1-Trichloroethane	71-55-6	ND	ND		ND	ND	ND
28V	1,1,2-Trichloroethane	79-00-5	ND	ND		ND	ND	ND
29V	Trichloroethylene	79-01-6	ND	ND		ND		ND
30V	Trichlorofluoromethane	75-69-4	ND	ND		ND	ND	ND
31V	Vinyl Chloride	75-01-4	ND	ND		ND	ND	ND
	Ethanol	64-17-5		ND		ND	ND	ND
	Cyanide		ND	ND	ND	ND	ND	ND
	Phenols				ND	ND	ND	ND
	Volitile Organic							
	AcetoneCompounds		ND	ND				ND
	Phenolics, Total		0.12	0.051				

Patriot Beverages
Reedy Meadow Brook Ambient Monitoring

Parameter	Aluminum	Cadmium	Copper	Hardness	Nickel	Lead	Zinc	Alkalinity	Ammonia	TOC
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Minimum	0	0	0	23.7	0	0	0	13.1	0	5.16
Maximum	0.642	0.0003	3.6	209	0.006	0.0217	0.074	61.3	0.57	19.2
Median	0.094	0	0.0013	42.15	0.003	0.00015	0.005	26.1	0.09	7.28
Monitoring Period Date	Aluminum	Cadmium (mg/)	Copper (ug/L)	Hardness (mg/l)	Nickel (mg/l)	Lead (mg/l)	Zinc (mg/)	Alkalinity (mg/)	Ammonia (mg/l)	TOC (mg/l)
10/14/2024	0.642	0.0003	3.6	81	0.006	0.0217	0.019	57.3	0.57	19.2
7/1/2024	0.033	<0.0002	<1	126	0.003	<0.0003	0.011	57.4	0.29	8
4/1/2024	0.102	<0.0001	<0.5	33	0.003	0.0003	0.004	17.6	<0.05	5.48
1/3/2024	0.072	<0.0002	<1	34.2	0.002	<0.0003	0.005	23.2	<0.05	5.85
10/2/2023	0.099	<0.0002	1.3	31.5	<0.001	0.0003	<0.004	25.4	0.06	10.1
7/24/2023	0.235	<0.0001	1.4	31.9	0.004	0.0007	0.005	26.6	<0.05	13.4
4/10/2023	0.09	<0.0002	<1	45.6	0.003	<0.0003	0.007	26.6	0.07	6.31
1/16/2023	0.09	<0.0001	1	39.6	0.004	<0.0003	0.009	13.1	0.06	6.47
10/31/2022	0.039	0.0001	2.3	106	0.004	0.0004	0.017	49	0.08	10.4
7/18/2022	0.094	0.0002	1.4	209	0.006	0.0014	0.074	61.3	0.17	5.25
4/4/2022	0.052	<0.0001	0.0013	35.7	0.003	<0.0005	0.003	20.8	0.09	7.04
1/3/2022	0.068	<0.0001	0.0018	35.7	0.002	<0.0003	0.002	24.6	0.07	5.69
10/4/2021	0.094	<0.0001	0.0014	43.5	0.005	0.0011	0.004	35	0.26	9.37
7/12/2021	0.154	<0.0001	<0.0020	43.4	0.004	0.001	0.01	32.7	0.37	11.1
4/5/2021	0.146	<0.0001	<0.0020	42.3	0.003	0.0011	0.005	25.6	0.09	6.92
1/4/2021	0.128	<0.0001	0.001	42	0.003	<0.0003	0.009	16.7	0.09	8.29
10/5/2020	0.053	<0.0001	0.0013	100	0.003	<0.0003	0.003	59.3	0.14	5.16
7/6/2020	0.074	<0.0001	0.0018	46.5	0.003	0.0006	0.003	44	0.51	14.9
4/6/2020	0.105	<0.0001	<0.0010	25	0.002	0.0004	0.005	20.4	<0.05	8.92
1/6/2020	0.1	<0.0001	<0.0020	36	0.001	<0.0003	0.007	22.9	0.12	6.76
10/7/2019	<0.020	<0.0001	0.0032	89.1	0.004	<0.0003	0.005	58.1	0.14	5.27
4/15/2019	0.117	<0.0001	<0.0010	23.7	0.002	<0.0003	0.005	15.2	<0.05	7.52

Appendix C: Reasonable Potential Analysis

Methodology

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

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

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

Where:

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

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

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

When the downstream concentration exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the applicable criterion as the downstream concentration. The resulting effluent concentration then becomes the basis for the effluent limit. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

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

State water quality criteria are derived from EPA's *National Recommended Water Quality Criteria: 2002*, which are incorporated into the state WQSs by reference at 314 CMR 4.05(5)(e).

Freshwater aquatic life criteria for aluminum, cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals and are converted to total recoverable using published conversion factors. Additionally, the criteria for cadmium, copper, lead, nickel and zinc are hardness-dependent. EPA calculated hardness-dependent chronic and acute criteria for metals detected in the effluent using the downstream hardness determined using the hardness values measured in the Facility's discharge (Appendix A) and the median hardness value measured in the receiving water immediately upstream of the discharge (Appendix B). The applicable criteria are summarized in the table below.

Summary of Applicable Criteria

Parameter	**Applicable Criteria[1,2,]**	
	Acute Criteria (CMC)	**Chronic Criteria (CCC)**
Units	**mg/L**	**mg/L**
Aluminum	.46	.249
Ammonia (Cold)	23.5	4.3
Copper	0.017	0.109
Ammonia (Warm)	10.8	1.4
Phosphorus (Cold)	0.2	0.1
Phosphorus (Warm)	0.2	.05

[1]For hardness-dependent criteria, see *National Recommended Water Quality Criteria, Appendix B - Parameters for Calculating Freshwater Dissolved Metals Criteria That Are Hardness-Dependent*: http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

[2]For dissolved to total recoverable metal conversion, see *Appendix A - Conversion Factors for Dissolved Metals:* http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa; Required by 314 CMR 4.05(5)(e).

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the upstream 7Q10 flow to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration (C) exceeds the applicable criterion, 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

Pollutant	Conc. Units	Q_s (MGD)	C_s [1]	Q_e (MGD)	C_e [2]		Q_d (MGD)	C_d		Criteria		Reasonable Potential		Limits	
					Acute	Chronic		Acute	Chronic	Acute	Chronic	Acute	Chronic	Acute	Chronic
Aluminum	µg/L	0.067	94	0.55	0.0	100.0	0.617	10.2	99.3	460.0	249.0	N	**Y**	N/A	**100.0**
Cadmium	µg/L	0.067	0	0.55	0.0	0.0	0.617	0.0	0.0	2.3	0.9	N	N	N/A	N/A
Copper	µg/L	0.067	0.00055	0.55	314.5	314.5	0.617	280.4	280.4	16.6	10.9	**Y**	**Y**	**18.6**	**12.2**
Lead	µg/L	0.067	0.15	0.55	0.2	0.2	0.617	0.2	0.2	102.5	4.0	N	N	N/A	N/A
Nickel	µg/L	0.067	3	0.55	12.9	12.9	0.617	11.8	11.8	545.8	60.7	N	N	N/A	N/A
Zinc	µg/L	0.067	5	0.55	12.4	12.4	0.617	11.6	11.6	139.4	139.4	N	N	N/A	N/A
Ammonia (Cold)	mg/L	0.067	0.07	0.55	0.0	0.0	0.617	0.0	0.0	26.2	4.5	N	N	N/A	N/A
Ammonia (Warm)	mg/L	0.067	0.09	0.55	0.4	0.4	0.617	0.4	0.4	12.0	1.4	N	N	N/A	N/A
Phosphorus	mg/L	0.067	0	0.55	0.2	0.1	0.617	0.2	0.1	0.2	0.1	**Y**	**Y**	**0.2**	**0.1**
Phosphorus	mg/L	0.067	0.01	0.55	0.2	0.1	0.617	0.2	0.0	0.2	0.05	**Y**	**Y**	**0.2**	**0.05**
Arsenic	mg/L	0.067	0	0.55	0.1	0.1	0.617	0.1	0.1	0.3	0.2	N	N	N/A	N/A

[1] Median upstream values calculated using monitoring data for the receiving water immediately upstream of the Facility's discharge reported by the Facility (see Appendix B).
[2] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).
[3] Value calculated as the sum of effluent flow and upstream flow.
[4] "Y" is indicated if downstream concentration exceeds the acute criterion.
[5] "Y" is indicated if downstream concentration exceeds the chronic criterion.

Aluminum Copper and Phosphorus have a reasonable potential to cause or contribute to an excursion above water quality standards.

Calculation of Effluent Limitations

EPA calculated the effluent limitations for the parameters that have a reasonable potential to cause or contribute to an excursion above water quality standards by setting the maximum allowable downstream concentration equal to the applicable criterion and solving for the effluent concentration. The results are summarized in the table below.

Summary of Effluent Limitations

Parameter	Acute Criterion	Chronic Criterion	Available Dilution	Daily Max Effluent Limitation	Monthly Avg Effluent Limitation
Units	**µg/L**	**ug/L**	**---**	**mg/L**	**mg/L**
Aluminum	460.0	249.0	1.09	N/A	.1
Copper	16.6	10.9	1.09	18.6	12.2
Phosphorus (Cold)	200	100	1.09	0.2	0.1
Phosphorus (Warm)	200	50	1.09	0.2	0.05

Note that when the effluent limitation is calculated to be lower than the applicable criterion then the effluent limitation is set equal to the criterion. Because regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals, effluent limitations are expressed as total recoverable metals. *See* EPA-823-B96-007, *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion:*1996.

Appendix D: Whole Effluent Toxicity Reasonable Potential Analysis

The dilution factor determined for the Facility is 1.09. For discharges with dilution less than 10 the criterion recommended in the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) for acute effects is 0.3 toxic units (T.U.). To determine whether discharges from the Facility have reasonable potential to cause or contribute to an excursion above this level of toxicity, EPA converted the LC_{50} results for the Facility to toxic units, defined as 100 divided by the LC_{50}, as shown below.

Monitoring Period End Date	LC50 Static 48Hr Acute Ceriodaphnia	Toxic Units Equivalent
	%	T.U.
4/30/2018	100	1
7/31/2018	100	1
10/31/2018	100	1
1/31/2019	100	1
4/30/2019	100	1
5/31/2019	100	1
6/30/2019	100	1
7/31/2019	100	1
10/31/2019	100	1
5/31/2020	100	1
6/30/2020	100	1
7/31/2020	100	1
10/31/2020	100	1
5/31/2021	100	1
6/30/2021	100	1
7/31/2021	100	1
10/31/2021	100	1
5/31/2022	100	1
6/30/2022	100	1
7/31/2022	100	1
10/31/2022	100	1

Using the toxic unit equivalents calculated above, EPA then determined the 95th percentile projected effluent concentration following the methodology described in Appendix C, above. Based on a dataset where n>10, the 95th percentile was calculated as 1.00 toxic units, or an LC_{50} of 91%, as shown below. The projected downstream toxicity was calculated as 0.9174 toxic units, determined by multiplying the 95th percentile by the percent effluent at the edge of the mixing zone (or dividing the 95th percentile by the dilution factor).

Toxicity in T.U. - lognormal distribution assumed

Estimated Daily Maximum Effluent Concentration		
k = number of daily samples =	20	
Max Concentration	0	
cv(x)= Coefficient of Variation* =	0	
95th percentile multiplication factor**	0	
Daily Max 95th Percentile = Max Concentration*95th percentile multiplication factor		
Daily Max 95th Percentile =	**1**	**TU**
Projected Downstream Concentration = Daily Max 95th Percentile/dilution factor		
Projected Downstream Concentration =	**0.9174**	**TU**

The estimated downstream toxicity exceeds the in-stream criterion of 0.3 T.U. Therefore, discharges from the Facility have a reasonable potential to cause, or contribute to an excursion above State WQSs and a limitation for toxicity is required.

Effluent Limitations

For discharges with dilution factors less than 10, if there is reasonable potential to exceed water quality criteria, the *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) specifies that the end-of-pipe acute (i.e., LC_{50}) limit is 1.00 toxic units (T.U.), equivalent to an LC_{50} of 100%.

Summary of Effluent Limitations

Parameter	Criterion	Limitation in Toxic Units	Limitation in %
Units	**T.U.**	**T.U.**	**%**
LC_{50}	0.3	1.0	100
NOEC	1.0	N/A	N/A

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

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.

PUBLIC NOTICE PERIOD: May 16, 2025 – June 16, 2025

PERMIT NUMBER: MA0004936

NAME AND MAILING ADDRESS OF APPLICANT:

Patriot Beverages, LLC
25 Copeland Drive
Ayer, MA 01432

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Patriot Beverages
20 Harvard Road
Littleton, MA 01833

RECEIVING WATER AND CLASSIFICATION:

Unnamed Tributary to Reedy Meadow Brook (Class B)

PREPARATION OF THE DRAFT PERMIT:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Patriot Beverages, which discharges treated industrial wastewater and stormwater. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice their CWA § 401 certification and a separate state Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

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/massachusetts-draft-individual-npdes-permits or by contacting:

Michele Barden
Telephone: (617) 918-1539
Email: barden.michele@epa.gov

Any electronically available documents that are part of the administrative record can be requested from

the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by June 16, 2025**,** which is the close of the public comment period. Comments should be submitted to the EPA contact at the email listed above. If you prefer to submit comments by mail, please call or email the EPA contact above to make arrangements for that. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (*i.e.*, the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the Regional Administrator finds that response to this notice indicates significant public interest.

In reaching a final decision on this Draft Permit, the Regional Administrator will respond to all significant comments and make the responses available to the public.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and notify the applicant and each person who has submitted written comments or requested notice.

KEN MORAFF, DIRECTOR
WATER DIVISION
U.S. EPA – REGION 1