FINAL 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"),

Granite Shore Power Merrimack LLC

is authorized to discharge from a facility located at

Merrimack Station
431 River Road
Bow, NH 03304

to receiving water named

Merrimack River (Hydrologic Basin Code; 01070002)

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

This permit shall become effective on September 1, 2020.

This permit expires at midnight, August 31, 2025.

This permit supersedes the permit issued on June 25, 1992.

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

Signed this day of

KENNETH MORAFF
Digitally signed by KENNETH MORAFF
Date: 2020.05.22 12:08:42 -04'00'

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency, Region 1
Boston, Massachusetts

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. **Outfall 001.** During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge once through cooling water from the MK-1 condenser outlet, through Internal Outfall Serial Number 001 to the Merrimack River, via the Discharge Canal. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	Effluent Limitations			Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Instantaneous Maximum	Measurement Frequency[4]	Sample Type
Effluent Flow [6]	Report MGD	69.1 MGD	_____	Continuous	Calculation
Temperature[7]	Report °C Report °F	Report °C Report °F	_____	Continuous	Recorder
Total Residual Oxidants[8]	_____	_____	0.2 mg/L[9]	1/Week	Grab
Intake Velocity (April 1 to August 15)[19]	_____	_____	0.5 fps	Continuous	Calculation

2. **Outfall 002**. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge once through cooling water from the MK-2 condenser outlet, through Internal Outfall Serial Number 002 to the Merrimack River, via the Discharge Canal. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	Effluent Limitations			Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Instantaneous Maximum	Measurement Frequency[4]	Sample Type
Effluent Flow[6]	Report MGD	187.2 MGD	_____	Continuous	Calculation
Temperature[7]	Report °C Report °F	Report °C Report °F	_____	Continuous	Recorder
Total Residual Oxidants[8]	_____	_____	0.2 mg/L[9]	1/Week	Grab
Intake Velocity (April 1 to August 15)[19]	_____	_____	0.5 fps	Continuous	Calculation

3. **Outfall 003**. During the period beginning on the effective date and lasting through the expiration date of this permit, the Permittee is authorized to discharge through Outfall Serial Number 003 to the Merrimack River, via the Discharge Canal, the following wastewater: Internal Outfall 003A (Slag Settling Pond) and Internal Outfalls 001 and 002 (once through cooling water). The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow[6]	265.3 MGD	275.4 MGD	Continuous	Calculation
Temperature[7]	Report °C Report °F	Report °C Report °F	Continuous	Recorder
Instream Temperature Limits	See Part I.A.11			
Total Residual Oxidants[8]	———	0.026 mg/L[10,11]	1/Week	Grab
Dissolved Oxygen Saturation	———	75% (minimum)	Monthly	Grab
pH Range[12]	6.5 - 8.0 standard units		Continuous	Recorder
Whole Effluent Toxicity (WET)[13, 14]				
LC_{50}	_____	Report %	1/Quarter	Composite

Effluent Characteristic	Effluent Limitations		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
NOAEL	_____	Report %	1/Quarter	Composite
Ammonia	_____	Report mg/L	1/Quarter	Composite
Total Solids	_____	Report mg/L	1/Quarter	Composite
Total Dissolved Solids	_____	Report mg/L	1/Quarter	Composite
Hardness	_____	Report mg/L	1/Quarter	Composite
Total Cadmium	_____	Report mg/L	1/Quarter	Composite
Total Lead	_____	Report mg/L	1/Quarter	Composite
Total Copper	_____	Report mg/L	1/Quarter	Composite
Total Zinc	_____	Report mg/L	1/Quarter	Composite
Total Nickel	_____	Report mg/L	1/Quarter	Composite
Total Aluminum	_____	Report mg/L	1/Quarter	Composite

Ambient Characteristic[15]	Reporting Requirements		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Hardness	_____	Report mg/L	1/Quarter	Grab
Ammonia	_____	Report mg/L	1/Quarter	Grab
Total Cadmium	_____	Report mg/L	1/Quarter	Grab
Total Lead	_____	Report mg/L	1/Quarter	Grab
Total Copper	_____	Report mg/L	1/Quarter	Grab
Total Zinc	_____	Report mg/L	1/Quarter	Grab
Total Nickel	_____	Report mg/L	1/Quarter	Grab
Total Aluminum	_____	Report mg/L	1/Quarter	Grab
pH[16]	_____	Report standard units	1/Quarter	Grab
Temperature[16]	_____	Report °C Report °F	1/Quarter	Grab

4. **Outfall 003A.** During the period beginning on the effective date and lasting through the expiration date the Permittee is authorized to discharge the following effluent from the Slag Settling Pond: slag sluice settling area (bottom ash transport water) generated before December 31, 2023; stormwater, landfill leachate, and low volume wastewater from Waste Treatment Plant No. 1; treated chemical and non-chemical metal cleaning from Waste Treatment Plant No. 1 (Internal Outfall 003B); MK-1 boiler blowdown and roof drains; MK-1 and MK-2 slag tank overflow and storm drains; boiler drains; yard drains; and screen and filter backwash and the quench pump test water from the FGD service water pump house. Discharges from Outfall 003A shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow[6]	5.3 MGD	13.0 MGD	Continuous	Recorder
Total Recoverable Copper	_____	Report mg/L	1/Quarter	Composite
Total Suspended Solids	30.0 mg/L	100.0 mg/L	1/Month	Composite
Oil & Grease	15.0 mg/L	20.0 mg/L	1/Month	Grab
pH	Report standard units		1/Week	Grab

5. **Outfall 003B.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge chemical and non-chemical metal cleaning effluent through Waste Treatment Plant No.1. Chemical and non-chemical metal cleaning consists of but not limited to MK-1 and MK-2 water and gas side boiler cleaning, gas side equipment ash wash, precipitator washes and air preheater cleaning. Low volume waste or other sources of water can be used as metal cleaning wash water but sampling at this location shall not include mixing with any other waste stream prior to discharge to the Slag Settling Pond. The discharge from Outfall 003B shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type[5]**
Effluent Flow[6]	Report MGD	Report MGD	Continuous	Calculation
Total Suspended Solids	Report mg/L	Report mg/L	1/Day	Composite
Total Recoverable Iron	1.0 mg/L	1.0 mg/L	1/Day	Composite
Total Recoverable Copper	1.0 mg/L	1.0 mg/L	1/Day	Composite
Oil & Grease	Report mg/L	Report mg/L	1/Day	Grab

6. **Outfall 004A.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge into the Merrimack River from Outfall Serial Number 004A[17] wastewater consisting of MK-1 screen wash water and MK-2 screen wash water. The discharge from Outfall 004A shall be limited and monitored as specified below

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[6]	_____	Report MGD	1/Year	Estimate
Oil & Grease[18]	_____	Report mg/L	1/Year	Grab
pH[12]	6.5-8.0 standard units		1/Year	Grab

7. **Outfall 004B.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge into the Merrimack River from areas directly in front of the cooling water intake structures, Outfall Serial Number 004B,[17] wastewater consisting of fire protection overflow effluent and ice dam removal spray. The discharge from Outfall 004B shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[6]	_____	Report MGD	1/Year	Estimate
Oil & Grease[18]	_____	Report mg/L	1/Year	Grab
pH[12]	6.5-8.0 standard units		1/Year	Grab

8. **Outfall 004C.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge into the Merrimack River from Outfall Serial Number 004C[17] wastewater consisting of MK-1 and MK-2 screenhouse floor sump water. The discharge from Outfall 004C shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[6]	_____	Report MGD	1/Year	Estimate
Oil & Grease[18]	_____	Report mg/L	1/Year	Grab
pH[12]	6.5-8.0 standard units		1/Year	Grab

9. **Outfall 005A.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge MK-1 cooling water intake structure maintenance sump effluent from Outfall Serial Number 005A[17] into the Merrimack River. Such discharges shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Total Annual	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[6]	Report MGD	_____	1/Year	Estimate
Oil & Grease[18]	_____	Report mg/L	1/Year	Grab
pH[12]	6.5-8.0 standard units		1/Year	Grab

10. **Outfall 005B.** During the period beginning on the effective date and lasting through expiration date of this permit, the Permittee is authorized to discharge MK-2 cooling water intake structure maintenance sump effluent from Outfall Serial Number 005B[17] into the Merrimack River. Such discharges shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitations**		**Monitoring Requirements[1,2,3]**	
	Total Annual	**Daily Maximum**	**Measurement Frequency[4]**	**Sample Type**
Effluent Flow[6]	Report MGD	_____	1/Year	Estimate
Oil & Grease[18]	_____	Report mg/L	1/Year	Grab
pH[12]	6.5-8.0 standard units		1/Year	Grab

Footnotes for PART I.A.1 through I.A.12:

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

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

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

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

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

(6) Effluent flow shall be reported in million gallons per day (MGD). Flow measurement is required by either 1) estimates, 2) calculated based on pump curves and hours of operation or 3) automatically recorded using appropriate instrumentation. Flow at Outfall 003 shall be the sum of the flow from internal Outfall 003A (slag settling pond) and once- through cooling water from internal Outfalls 001 and 002.

(7) Discharge temperatures shall be monitored year-round at Outfall 003 (Station S0: 43º 08.156' N, 71º 27.842' W) and separately at Internal Outfalls 001 and 002 prior to entering the discharge canal. The discharge temperature will be recorded by appropriate instrumentation and automatically recorded at 15-minute intervals. The average daily temperature shall be calculated as the 24-hour average of the hourly average (per calendar day). The highest average hourly temperature value for the month will be reported as the daily maximum temperature in the monthly Discharge Monitoring Reports (DMRs). The average of the average daily temperatures for the month will be reported as the average monthly temperature in the DMRs.

(8) Samples for total residual oxidants (TRO) shall be taken only when biocide is in use and the discharge of cooling water contains the biocide. Chlorine or bromine may be used as the biocide. No other biocide shall be used without written permission form the EPA and the New Hampshire Department of Environmental Services-Water Division (NHDES). TRO may not be discharged from any single generating unit for more than two hours per day unless the Permittee demonstrates to EPA that more than two hours is required for macroinvertebrate control.

(9) This is a "maximum concentration" or instantaneous maximum limit not to be exceeded at any time.

(10) For the purposes of this permit, TRO analysis must be completed using a test method in 40 CFR § Part 136 that achieves a minimum level of detection no greater than 0.030 mg/L (30 µg/L).

(11) The compliance level for TRO at Outfall 003 is 0.030 mg/L (30 µg/L).

(12) This pH range limit shall not be exceeded at any time (instantaneous lower and upper range values). The Permittee shall report minimum and maximum values as well as the total number of exceedances in the field provided on each DMR. See Part I.F.4 for instructions allowing the Permittee to submit a demonstration that the pH range should be widened due to naturally occurring conditions.

(13) The Permittee shall conduct acute toxicity tests (LC_{50}) four times per year in accordance with test procedures and protocols specified in Attachment A of this permit. LC_{50} is defined in Part II.E. of this permit. The Permittee shall conduct tests using the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*. Toxicity test samples shall be collected, and tests completed during the calendar quarters ending March 31st, June 30th, September 30th and December 31st of each year. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test. If there is any discharge of metal cleaning wastes during any sampling quarter, the WET samples shall be collected at times when metal cleaning waste is being discharged.

(14) For Part I.A.3., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in Attachment A, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in Attachment A, Section IV., DILUTION WATER. Even where alternate dilution water has been used, the results of the receiving water control (0% effluent) analyses must be reported. Minimum levels and test methods are specified in Attachment A, Part VI. CHEMICAL ANALYSIS.

(15) For Part I.A.3., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

(16) 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. 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.

(17) A visual inspection of this outfall shall be conducted daily when discharging. A daily visual inspection of the Outfall 004C floor sump shall be made just prior to discharge. A log of these inspections, including observations, shall be kept and shall be made available to EPA and NHDES inspectors on request.

(18) In addition to yearly testing, grab sampling and analysis for Oil and Grease shall be immediately initiated if a visible oil sheen is observed. The discharge shall be ceased until the source of the oil can be identified and removed from the wastewater prior to re-initiating the discharge. The results of the analysis and cause of the excursion shall be documented and reported to EPA as an attachment to the next monthly DMR report.

(19) Compliance with the intake velocity limit will become effective upon final compliance with the requirement to install and operate wedgewire screens at Part I.E of the permit.

Part I.A. continued

11. **In-stream Temperature Monitoring 006.** Compliance with the in-stream temperature limits below shall be demonstrated at Station S4 (43º 07.851' N, 71º 27.818' W) downstream from the discharge canal.

Ambient Characteristic	Effective Period	Discharge Limitations[1]		Monitoring Requirements[2]	
		Weekly Average[3]	Daily Maximum[4]	Measurement Frequency[5]	Sample Type
S4 Temperature	Jan 1 – Mar 31	8.0°C 46.4°F	Report °C Report °F	Continuous	Recorder
S4 Temperature	Apr 1 – Apr 30	12.0°C 53.6°F	Report °C Report °F	Continuous	Recorder
S4 Temperature[6]	May 1 – May 31	18.0°C 64.4°F	29.3°C[7] 84.7°F	Continuous	Recorder
S4 Temperature[6]	Jun 1 – Jun 21	22.7°C 72.9°F	30.9°C[7] 87.6°F	Continuous	Recorder
S4 Temperature[6]	Jun 22 – Jul 31	25.1°C 77.2°F	31.3°C[7] 88.3°F	Continuous	Recorder
S4 Temperature[6]	Aug 1 – Sep 30	25.1°C 77.2°F	Report °C Report °F	Continuous	Recorder
S4 Temperature	Oct 1 – Oct 31	25.1°C 77.2°F	Report °C Report °F	Continuous	Recorder
S4 Temperature	Nov 1 – Dec 31	8.0°C 46.4°F	Report °C Report °F	Continuous	Recorder

Ambient Characteristic	Effective Period	Discharge Limitations[1]		Monitoring Requirements[2]	
		Weekly Average[3]	Daily Maximum[4]	Measurement Frequency[5]	Sample Type
Rise in Temperature[8]		2.0°C 3.6°F	_____	Calculated	Recorder
Capacity Factor[6]	May 1 – Sep 30	40%	_____	Calculated	Calculation

Footnotes for Part I.A.11:

(1) Discharge limitations shall apply when the Facility is operating and generating electricity. The Permittee shall not be considered in non-compliance with the temperature limits if any exceedance of weekly average and/or maximum daily temperature limits occurs during a period when the Facility is not producing a megawatt output and the exceedance is due to either ambient weather conditions or thermal input from another source rather than the Facility's thermal discharges.

(2) In addition to sampling at Station S4, sampling for ambient temperature shall be conducted at Station N10 (43º 09.123,' N 71º 28.782' W) upstream of the cooling water intake structure from April 1 to October 31 and at Station N5 (located at the intake bay upstream of the traveling screens) from November 1 to March 31. Each in-stream monitoring station (N10, N5, and S4) shall be equipped with a continuous temperature monitor that shall record temperature at 15-minute intervals. In-stream temperature monitoring stations (N10, N5, and S4) shall be located at a depth of 1 foot from the surface, except that the temperature at Station S4 shall be monitored at a depth of 1 foot or less above the river bottom from November 1 to March 31. In the event that temperature monitors become inoperable due to frozen conditions and temperature data cannot be obtained for the reporting period, the Permittee shall enter the appropriate NODI code (e.g., for frozen conditions) in the DMR and explain in the comment field the reason for the equipment failure. The DMR cover letter for that reporting period should provide an explanation for the equipment failure and describe what actions the Permittee is taking to address the failure.

(3) The Permittee shall calculate the weekly average temperature as a 7-day average beginning on the first day of the calendar month. The last weekly average temperature of the reporting period shall include the dates between the 22nd and the last day of the month. The Permittee shall report the highest weekly average temperature recorded during the calendar month.

(4) The daily maximum temperature at Station S4 shall be calculated as an hourly average beginning at 12:00 AM and ending at 11:59 PM daily. The Permittee shall report the highest hourly average as the daily maximum temperature.

(5) The Permittee shall provide average and maximum daily in-stream temperature data for Stations N10, S0, and S4 (both as degrees Celsius and degrees Fahrenheit) as a separate attachment to the discharge monitoring report. Data shall be provided following the format from the 2018-2019 Environmental Monitoring Program Annual Report and shall be provided in an electronic spreadsheet format. Temperature data in 15-minute intervals shall be provided to EPA upon request.

(6) During the period May 1 through September 30, the Permittee must either maintain a rolling 45-day average operating capacity factor no greater than 40 percent of the total rated capacity for both units or meet the effective weekly average temperature limits at Station S4. A rolling 45-day capacity factor shall be calculated as [(Total Unit 1 MWh output over 45 days + Total Unit 2 MWh output over 45 days) / (Total Rated MWh Output for Unit 1 + Unit 2)] * 100. The first rolling 45-day capacity factor shall be calculated for May 31 and shall be based on the previous 45 days (beginning on April 17). The Permittee must report the highest 45-day rolling average capacity factor in a reporting period. , A 45-day rolling average capacity greater than 40% on any date during the reporting period (during the months between May 1 and September 30) triggers the weekly average temperature limits and the Permittee must report the highest weekly average temperature value for that reporting period. If the 45-day rolling average capacity for the reporting period does not exceed 40%, the Permittee shall report the appropriate No Data Indicator ("NODI") code (i.e., Conditional Monitoring – Not Required This Period) for the weekly average temperature value for the reporting period. The daily temperature data shall continue to be recorded and reported in an attachment to the DMR. See footnote 5.

(7) If the hourly average temperature exceeds the daily maximum temperature limit, the Permittee shall take action to reduce the temperature at Station S4 to a value below the daily maximum temperature limit. The instantaneous temperature at Station S4 must be no greater than the daily maximum temperature limit within 3 hours from the hour in which the exceedance occurs. The Permittee shall report the instantaneous temperature recorded during the final 15-minute increment of the third hour following the hour in which the exceedance of the daily maximum temperature limit was observed.

(8) If the weekly average ambient temperature measured at Station N10, or N5 when applicable, is within 2.0°C (3.6°F) of, or above, the effective weekly average temperature limit for that compliance period, then the rise in average ambient temperature at Station S4 as compared to ambient at Station N10 or N5 over the same weekly averaging period shall be no greater than 2.0°C (3.6°F). The Permittee shall report the maximum difference between the weekly average temperatures calculated concurrently at Stations N10 and S4. For reporting periods in which the weekly average temperature limits do not apply (see fn 6, above) the Permittee shall report the appropriate NODI code (e.g., Conditional Monitoring – Not Required This Period) for the rise in temperature value.

Part I.A. continued

12. Discharges and water withdrawals from Merrimack Station shall not cause a violation of the water quality standards of the receiving water.

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

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

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

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

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

18. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 CFR Section 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) One hundred micrograms per liter (100 µg/L);

        (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

        (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR Section 122.21(g)(7); or

        (4) Any other notification level established by the Director in accordance with 40 CFR Section 122.44(f) and New Hampshire 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) Five hundred micrograms per liter (500 µg/L);
(2) One milligram per liter (1 mg/L) for antimony;
(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR Section 122.21(g)(7); or
(4) Any other notification level established by the Director in accordance with 40 CFR Section 122.44(f) and New Hampshire 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.

19. This permit may be modified in accordance with 40 CFR Section 122.62(a)(3) if the standards or regulations on which the permit is based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit is issued in accordance with 40 CFR Section 122.62(a)(3).

B. 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 Reports Using NetDMR

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

2. Submittal of Reports as NetDMR Attachments

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

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

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

(1) Transfer of Permit notice;
(2) Request for changes in sampling location;
(3) Request to discharge new chemicals or additives;
(4) Request for pH effluent limitation adjustment;
(5) Request for change in WET testing requirements;
(6) Report on unacceptable dilution water/request for alternative dilution water for WET testing;
(7) Fish and invertebrate draft sampling plan;
(8) Final report of fish and invertebrate sampling results and related analyses;
(9) Traveling screen optimization study;
(10) Wedgewire screen preliminary design and final design; and
(11) Wedgewire screen installation status reports.

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

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

4. Submittal of Reports in Hard Copy Form

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

(1) Prior to December 21, 2020, written notifications required under Part II. Starting on December 21, 2020, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

b. This information shall be submitted to EPA ECAD at the following address:

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

5. State Reporting

Unless otherwise specified in this permit or by the State, duplicate signed copies of all reports, information, requests or notifications described in this permit, including the reports, information, requests or notifications described in Parts I.B.3 through I.B.6 shall also be submitted to the Hampshire Department of Environmental Services, Water Division (NHDES–WD) electronically to the Permittee's assigned NPDES inspector at NHDES-WD or as a hardcopy to the following

address:

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

6. Verbal Reports and Verbal Notifications

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

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

617-918-1510

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

603-271-2985

C. BIOLOGICAL MONITORING – SAMPLING AND REPORTING REQUIREMENTS

Fish and invertebrate sampling, and related analyses, shall be required in support of the Permittee's thermal variance request. A draft sampling plan shall be submitted to EPA and NHDES for review and approval prior to the commencement of any sampling. Sampling shall be conducted over two consecutive years and begin within two years of the effective date of this permit. A final report of sampling results and related analyses shall be submitted to EPA and NHDES within four years of the effective date of this permit.

D. UNUSUAL IMPINGEMENT EVENT

1. The Permittee shall visually inspect the traveling screens of the cooling water intake structures for Units 1 and 2 at least every eight hours that each unit's water intake pumps are operated for the duration of the permit.

2. If the Permittee observes on the traveling screens, or estimates, based on temporally limited observations, 40 or more impinged fish within any 8-hour period, the Permittee shall:

   a. Rotate the affected traveling screens until the impingement rate decreases to less than five fish per hour.

   b. Report to the Director and the Commissioner within 24 hours by telephone as required by Part II of this permit. A written confirmation report shall be provided within five business

days. These oral and written reports shall include the following information:

(1) All impinged fish shall be enumerated and recorded by species. All live fish shall then be returned to the river. Report the species, size ranges, and approximate number of organisms involved in the incident. In addition, up to 25 percent of the total of each species killed, up to a maximum of 25 individuals from each species, shall be measured to the nearest centimeter, total length.

(2) The time and date of the occurrence.

3. The operational mode of the specific system that may have caused the occurrence.

4. The opinion of the Permittee as to the reason the incident occurred; and

5. The remedial action that the Permittee recommends to reduce or eliminate this type of incident.

E. COOLING WATER INTAKE STRUCTURE REQUIREMENTS TO MINIMIZE ADVERSE IMPACTS FROM IMPINGEMENT AND ENTRAINMENT

Best Technology Available. The design, location, construction, and capacity of the Permittee's cooling water intake structures (CWISs) shall reflect the best technology available (BTA) for minimizing adverse environmental impacts from the impingement and entrainment of various life stages of fish and other organisms (e.g., eggs, larvae, juveniles, adults) by the CWISs. ***Nothing in this permit authorizes take for the purposes of a facility's compliance with the Endangered Species Act.*** The following requirements have been determined by the EPA to represent the BTA for minimizing impingement and entrainment impacts at Merrimack Station:

1. To minimize entrainment mortality from April 1 through August 15, the Permittee shall install and operate for the CWIS's of Units 1 and 2 a fine mesh wedgewire screen intake system with the slot openings oriented perpendicular to the predominant direction of ambient flow current, a pressurized airburst system to clear debris from the screens, and a through-screen intake velocity of no more than 0.5 feet per second (fps). The mesh or slot size shall be no greater than 3.0 mm. The wedgewire screen units must be positioned as close to the west bank of the Hooksett Pool segment of the Merrimack River and the CWIS as possible, while 1) meeting all operational specifications required by this permit; 2) meeting the conditions of any other permits for the equipment; and 3) assuring that the equipment performs as designed.

2. To minimize impingement mortality from April 1 through August 15, the Permittee shall maintain a through-screen velocity at the wedgewire screens no greater than 0.5 fps. The Permittee shall verify that the through-screen velocity at the wedgewire screen surface is 0.5 fps or less through measurement or calculation, and that the ratio of through-screen velocity to ambient sweeping current velocity is maintained at 1:1 or greater under all river and plant operating conditions when the wedgewire screens are deployed. The Permittee shall report the average monthly and daily maximum through-screen intake velocity at the screens in the discharge monitoring report.

3. To minimize impingement mortality from August 16 through March 31, the Permittee shall operate traveling screens with low pressure (<30 psi) spray wash systems to remove fish and a fish return sluice that returns all live fish and other aquatic organisms collected or trapped on the intake screens to the river with minimal stress.

    a. A new fish return sluice with the following features shall be installed for each CWIS. The new fish return sluice shall be in place and operational at all times.

        (1) Maximum water velocities of 3-5 ft/s within the sluice;

        (2) A minimum water depth of 4-6 inches at all times;

        (3) No sharp radius turns (i.e., no turns greater than 45 degrees);

        (4) A point of discharge to the river that is slightly below the low water level at all times;

        (5) A removable cover to prevent access by birds, etc;

        (6) Escape openings in the removable cover along the portion of the sluice that could potentially be submerged; and,

        (7) A slope not to exceed 1/16-foot drop per linear foot, unless the plant can demonstrate that this is not feasible.

    b. The Permittee shall complete an impingement technology performance optimization study demonstrating that operation of the system of technologies, operational measures, and best management practices has been optimized to minimize impingement mortality. The study shall begin once the fish return system is operational and shall include a minimum of two years of biological monitoring. The optimization study shall be consistent with the requirements in 40 CFR § 122.21(r)(6)(ii) and include a description of the screens and associated equipment, pressure sprays and operation, fish return mechanism, rotation speed and frequency, and best management practices to limit impinged organisms exposure to chlorinated wash water, as well as a description of how any operational measures (e.g., flow reductions, seasonal operation) contribute to the system's performance. The results of the optimization study shall be submitted to EPA and NHDES within four months of the completion of two years of biological monitoring.

4. The Permittee shall at all times properly operate and maintain the wedgewire screen intake system in compliance with conditions (1) and (2) of this section except when operation of the wedgewire screens would result in unavoidable loss of human life, personal injury, or severe property damage. Severe property damage means substantial physical damage to property or damage to cooling water intake-related equipment that causes it to become inoperable. When operation of the wedgewire screen intake system would cause loss of human life, injury, or severe property damage, the Permittee may cease use of the wedgewire screens and operate an emergency intake (i.e., divert water withdrawals from the wedgewire screens to the existing CWIS and traveling screens). The Permittee shall minimize the use of the emergency intake system to the greatest extent possible. Within 24 hours of the start of each use of the emergency

intake system, the Permittee must notify EPA and NHDES of the reason for operation of the emergency intake and identify all steps taken or to be taken to address the cause and minimize the use of the emergency intake. The Permittee shall notify EPA and NHDES within twenty-four hours of the resumption of full operation of the wedgewire screens. During operation of the emergency intake the Permittee must operate the traveling screens consistent with the requirements of Part I.E.2, above.

5. No change in the location, design or capacity of the present structure, unless specified by this permit, can be made without prior approval by EPA.

6. During deicing, the Permittee must employ an alternative water source that is not chlorinated, dechlorinate the deicing water, or perform deicing only at times when chlorination of the condensers is not taking place. In addition, each screen shall be continuously rotated during deicing to reduce the amount of time impinged organisms are subjected to elevated temperatures.

7. Compliance Schedule. Permit requirements under CWA § 316(b) must be complied with as soon as practicable. 40 CFR §§ 125.94(b)(1) and (2), 125.98(c). In order to comply with Part I.E.1, 2, and 3 of this permit, the Permittee needs to install and operate new equipment. As a result, the Permittee needs a period of time to install this equipment and achieve compliance. Therefore, this permit sets forth below a schedule according to which the Permittee shall attain compliance with the permit's BTA requirements under CWA § 316(b). Specifically, steps for the installation and operation of equipment required to comply with Part I.E,1, 2, and 3 of this permit shall be completed as soon as practicable but no later than the schedule of milestones set forth below. The Permittee shall notify EPA in writing of compliance or non-compliance with the requirements for each milestone no later than 14 days following each specified deadline.

   a. Design

      (1) Within six months of the effective date of this permit, the Permittee shall submit to EPA and NHDES a preliminary design of the wedgewire screens to be installed at Merrimack Station. The design must include justifications for 1) the proposed screen slot size based on consideration of each option's ability to reduce impingement mortality and entrainment, minimize through-screen velocity, avoid screen clogging, fouling or other maintenance issues, and any other relevant considerations; 2) the proposed material or alloy chosen for the equipment in order to reduce bio-fouling; and 3) the Permittee's choice of either traditional cylindrical wedgewire screens or wedgewire half-screens in order to reduce entrainment and impingement mortality. The preliminary design shall also provide data establishing the through-screen velocities that will be maintained by the Facility under various river and plant operating conditions, while also identifying the ratios of through-screen velocities to ambient sweeping current velocities that will be maintained under the different river and plant operating conditions. The screen slot size selected will be subject to EPA approval and based upon consideration of the results of the Permittee's "confirmatory study" during the spring/summer of 2017, as well as any other pertinent information.

      (2) Data collection, including but not limited to topographic and bathymetric surveys, geotechnical exploration, and other design and aquatic construction variables that need to

be evaluated for installation of the wedgewire screens to satisfy the BTA requirements of this Final Permit, shall be completed no later than six months from the effective date of the permit.

(3) Within two months after receipt of correspondence from EPA approving the Permittee's preliminary design, including the screen slot size and through-screen velocity for the wedgewire screens, the Permittee shall submit a final design for the wedgewire screens and all other technologies needed to satisfy the BTA requirements of this Final Permit.

b. Permitting

(1) Within four months of submitting the final design, the Permittee shall complete submission of all permit applications and notices necessary to obtain authorization for installation and construction of the wedgewire screens and all other technologies needed to satisfy the BTA requirements of this Final Permit, including any permits or authorizations required from the U.S. Army Corps of Engineers (ACOE), the United States Fish and Wildlife Service (USFWS), the NHDES, the New Hampshire Fish & Game, any local conservation commissions, and any other relevant regulatory authorities, as necessary. This task shall include all necessary engineering to support development and submission of adequate permit applications and the collection of all necessary supplementary data.

c. Construction

(1) Within four months of submitting the final design, the Permittee shall select and enter into an Engineering, Procurement and Construction agreement (or agreements) with all needed contractors.

(2) The Permittee shall provide a status report to EPA and NHDES within six months of completing the submission of all permit applications and notices necessary to obtain authorization for installation and construction of the wedgewire screens and all other technologies and for each six month period following until all permits and approvals are obtained.

(3) The Permittee shall comply with the conditions of all permits and approvals related to installing the wedgewire screens and any other technologies needed to satisfy the BTA requirements of this Final Permit. In addition, EPA will work with representatives of Merrimack Station and, as appropriate, the New England ISO to schedule any necessary power plant downtime associated with installing the wedgewire screens or other equipment needed to comply with the BTA requirements of this permit – though no such downtime is currently anticipated – so as to minimize or eliminate any effects on the adequacy of the region's supply of electricity.

(4) No later than 12 months from obtaining all necessary permits and approvals the Permittee shall submit a status report to EPA and NHDES on the progress toward completion and indicate a projected completion date.

(5) No later than 16 months from obtaining all necessary permits and approvals, the Permittee shall complete site mobilization and modifications, installation, tie-in, testing, startup and commissioning of the wedgewire screens and all other technologies needed to satisfy the BTA requirements of this Final Permit for the cooling water intake structures serving Units 1 and 2 at Merrimack Station.

d. Installation of Fish Return Sluices

Within six months of the effective date of the permit, the Permittee shall install fish return sluices consistent with the requirements of Part I.E.3.a, above.

F. STATE PERMIT CONDITIONS

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

2. This NPDES Discharge Permit is issued by EPA under Federal and State law. Upon final issuance by EPA, the New Hampshire Department of Environmental Services-Water Division (NHDES-WD) may adopt this permit, including all terms and conditions, as a State permit pursuant to RSA 485-A:13.

3. Each Agency shall have the right to enforce the terms and conditions of this. Any modification, suspension or revocation of this Permit shall be effective only with respect to the Agency taking such action and shall not affect the validity or status of the Permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation.

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

G. SPECIAL PERMIT CONDITIONS

1. Change in pH range

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

2. Discharges of Chemicals and Additives

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

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

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
(5) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC50 in percent for aquatic organism(s)).

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

3. To the extent practicable, and subject to approval by ISO-New England, the Permittee shall schedule the annual Unit 2 maintenance outage to occur between May 15 and June 15.

4. The Permittee shall institute a best management practice (BMP) of shutting down the intake pumps associated with a particular generating unit to the extent practicable when that generating unit is not operating, and water is not needed for fire prevention or other emergency conditions.

5. Reduction in WET Test Frequency

If after four consecutive sampling periods, i.e., one year, one test of which must contain metal cleaning waste, no test shows a LC50 < 100 %, the Permittee may request a reduction in toxicity testing. A reduction in the above WET testing frequency may be allowed upon written approval by EPA with concurrence from NHDES. Until written notice is received by certified mail from

the EPA indicating that the Whole Effluent Testing requirement has been changed, the Permittee is required to continue testing at the frequency specified in this Permit.

H. UNAUTHORIZED DISCHARGES

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

2. Bottom ash transport water generated after December 30, 2023 is prohibited from being discharged to the slag settling pond or the Merrimack River.

3. The discharge of any sludge and/or bottom deposits from any storage tank or basin at the Facility to the receiving water is prohibited. The Permittee shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of solids.

4. Water drawn from fuel oil tanks shall not be discharged into any Merrimack Station wastewater treatment system or discharged directly to the Merrimack River.

5. Pursuant to 40 CFR 423.13(a), there shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid.

6. No deicing water shall be discharged from the intake forebays to the Merrimack River. The Permittee shall adjust the deicing water flow rates, as required, to ensure no deicing water is discharged from the intake forebays to the Merrimack River.

    a. While deicing water is in use the intake forebays shall be inspected visually to determine whether deicing water is being discharged to the Merrimack River. If it is determined deicing water is being discharged to the Merrimack River, the Permittee shall take immediate action to adjust the deicing water flow rate to stop its discharge to the Merrimack River.

    b. A log of the daily forebay inspections shall be kept; specifically recording whether there was any adjustment to the deicing water flow. The log must be made available to EPA and NHDES inspectors on request.

ATTACHMENT A

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

IV. DILUTION WATER

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

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

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

and

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

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

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

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

V. TEST CONDITIONS

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

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

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

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

Footnotes:

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

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

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

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

Footnotes:

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

VI. CHEMICAL ANALYSIS

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

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

Notes:

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

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

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

TABLE OF CONTENTS

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

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

(1) Criminal Penalties

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

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

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

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

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

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

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

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

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

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

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

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

7. Duty to Reapply

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

8. State Authorities

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

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

9. Other Laws

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

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

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

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

d. *Prohibition of bypass.*

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

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

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

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

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

5. Upset

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

improper operation.

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

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

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

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

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

e. *Twenty-four hour reporting.*

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

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

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

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

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

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

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

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

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

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

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

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

Bypass see B.4.a.1 above.

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

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

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

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

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

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

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

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

Direct Discharge means the "discharge of a pollutant."

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

Discharge

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

Agency.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Municipality

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

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

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Upset see B.5.a. above.

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

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

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

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

2. Commonly Used Abbreviations

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

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