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"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Mirant Canal, LLC

is authorized to discharge from the facility located at:

Mirant Canal Station
9 Freezer Road
Sandwich, Massachusetts 02563

to receiving waters named the **Cape Cod Canal to Atlantic Ocean**

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

This permit shall become effective on the first day of the calendar month following 60 days after signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on June 23, 1989.

This permit consists of: 21 pages of Part I including Sections A-C with Effluent Limitations, Monitoring Requirements, and State Permit Conditions and Part II Requirements containing General Conditions and Definitions.

Signed this 31st day of July, 2008

Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency (EPA)
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Massachusetts Department of Environmental Protection (MassDEP)
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The term "Regional Administrator" means the Regional Administrator of Region I of the U.S. Environmental Protection Agency (EPA) and the term "Commissioner" means the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) or their designees.

2. During the period beginning on the effective date and lasting through expiration, the Permittee is authorized to discharge from **outfall serial number: 001**: non-contact condenser cooling water, treated station effluent (internal outfalls 010, 011 and 012), and stormwater. Such discharges shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Average Monthly	Maximum Daily	Instantaneous Maximum	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	Report	518	---	Continuous	Recorder or Pump capacity curve and operational hours
Total Residual Oxidants (mg/l)	---	0.1	0.2[1]	1 sample per Unit during each chlorination event	Grab
Whole Effluent Toxicity (WET)	Report	Report		Quarterly	24-Hour Composite
pH (standard units)	≥6.5 and ≤8.5			Weekly	Grab, report maximum and minimum values
Temperature (°F)	---		107	Continuous	Recorder
Temperature Rise (ΔT)[2]	---	33		Continuous	Calculation

[1] A TRO limit of 0.2 mg/L shall not be exceeded at any time (instantaneous maximum). This limit only applies to the extent that the Permittee utilizes once-through cooling water.

[2] ΔT equals the discharge temperature(°F) minus the inlet temperature (°F).

a. Effluent samples shall be taken within the last 10 feet of the 750-foot open discharge flume prior to discharging through the diffuser to the Cape Cod Canal.

b. Chlorination may be conducted for no more than two hours per day for each condenser unit and simultaneous multi-unit chlorination is permitted. If the daily sampling and applicator checks disclose any unresolved abnormality with the applicators or feed rates, all subsequent dosing of chlorine is prohibited until the abnormality is corrected.

c. The water temperature in the upper 15 ft of the water column above the discharge diffuser shall not exceed 86°F at any time. The Permittee shall measure and record the temperature of the water 15 feet below the water surface, directly above the discharge diffuser, during slack tide, once per week from July 1 through September 30 and during the generation of electricity, for the duration of the permit. This information shall be submitted to the EPA and MassDEP annually along with the annual Heat Load Report.

d. The Permittee shall use the procedures and protocols contained in Attachment A to this permit when conducting the WET testing. If there is any discharge of metal cleaning wastes during each sampling quarter, the WET samples shall be collected at times when metal cleaning waste is being discharged. The Permittee is required to report the results of chronic (and modified acute) WET tests on a quarterly basis. Reports shall include documentation of waste streams discharged during sample collection. If after eight consecutive sampling periods (two years), no test shows a $LC_{50} < 100$ % and a C-NOEC < 20%, the Permittee may request a reduction in toxicity testing. A variance from the above WET testing schedule may be allowed upon written approval by EPA with concurrence from MassDEP.

e. During the period beginning on the effective date and and lasting through expiration, the Permittee shall submit monthly **TRO Monitoring Reports** providing the data for all samples collected and analyzed for the previous month.

f. If the Permittee installs and operates cooling tower technology to meet the requirements of Part I.A.13.g of this permit, cooling tower blowdown shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	Report	Report	Continuous when in use	Recorder or Pump capacity curve and operational hours
Free Available Chlorine (mg/l)	0.2[1]	0.5	Daily	Grab
The 126 priority pollutants (mg/l) contained in chemicals added for cooling tower maintenance (except Cr and Zn)[2]	No detectable amount	No detectable amount	Yearly	Composite
Total Recoverable Chromium (mg/L)	0.2	0.2	2/month	Composite
Total Recoverable Zinc (mg/L)	1.0	1.0	2/month	Composite

[1] This limit is the average of analyses made over a single period of chlorine release (<2 hours); not an average monthly limit.

[2] The Permittee may demonstrate through engineering calculations that each of the 126 priority pollutants in 40 C.F.R. Part 423.15(j)(1) is not detectable in the final discharge by the analytical methods in 40 C.F.R. part 136.

3. During the period beginning on the effective date and lasting through expiration, the Permittee is authorized to discharge from **outfall serial number: 002**: intake screen washwater and condenser cooling water. Such discharges shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	2.5	4.4	Continuous	Recorder or Pump capacity curve and operational hours
pH (standard units)	≥6.5 and ≤8.5		Weekly	Grab, report monthly range
Temperature (°F)	---	90	Continuous	Recorder
Temperature Rise (ΔT)[1]	---	33	Continuous	Calculation

[1] ΔT equals the discharge temperature(°F) minus the inlet temperature (°F).

a. Temperature and pH shall be monitored at the Cape Cod Canal end of the outfall 002 discharge flume within 2 feet of the water surface when condenser cooling water is discharging.

b. There shall be no condenser water discharge at this location during times the screen wash is in operation until upgrades are made to the fish return system as required by Part 1.A.13.e of this permit.

c. There shall be no condenser water discharge at this location during the chlorination of any Unit condensers.

d. The outfall 002 discharge flume shall provide sufficient water depth to return impinged organisms to the Cape Cod Canal with minimal stress.

e. Upon completion of the upgrades to the fish return system as required by Part I.A.13.e. of this permit, the Permittee shall monitor and report average monthly and maximum daily flows for the discharges composed solely of intake screen washwater.

4. During the period beginning on the effective date and lasting through expiration, the Permittee is authorized to discharge from internal **outfall serial number: 010**: Unit 1 floor drains (*consisting of vacuum and pump seal water, fuel heater room discharges, and boiler leaks*). Such discharges shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	0.072	0.144	Continuous when in use	Recorder or Pump capacity curve and operational hours
Total Suspended Solids (mg/l)	30	100	Daily	Composite
Oil and Grease (mg/l)	10.0	15.0	Daily	Grab

a. Effluent samples shall be taken from the discharge side of the oil/water separator prior to mixing with other streams and prior to discharging into the final effluent flume.

5. During the period beginning on the effective date and lasting through expiration, the Permittee is authorized to discharge from internal **outfall serial number: 011**: metal cleaning waste streams (*consisting of air preheater wash, boiler fireside wash, precipitator wash, boiler chemical cleaning, stack and breach wash, equipment cleaning and feedwater heater chemical cleaning, metal cleaning sludge dewatering filtrate*). Such discharges shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	Report	Report	Continuous	Recorder or Pump capacity curve and operational hours
Total Copper (mg/l)	1.0	1.0	Daily	Composite
Total Iron (mg/l)	1.0	1.0	Daily	Composite
Total Mercury (mg/L)	Report	Report	Daily	Composite
Total Suspended Solids (mg/l)	30	100	Daily	Composite
Oil and Grease (mg/l)	10.0	15.0	Daily	Grab

a. Effluent samples shall be taken from the spigot on the discharge line of one of the two waste neutralization tanks prior to discharging into the final effluent flume for each day metal cleaning wastes are discharged.

b. Low volume or fly ash wastewater shall not be combined with metal cleaning wastewater prior to discharge to the final effluent flume.

c. The Permittee shall undertake reasonable best efforts to obtain and to use bulk caustic manufactured using a mercury-free process.

d. The total average monthly combined flow from outfall locations 011 and 012 shall not exceed 0.32 MGD and the total maximum daily combined flow from outfall locations 011 and 012 shall not exceed 0.52 MGD.

6. During the period beginning on the effective date of the permit and lasting through expiration, the Permittee is authorized to discharge from internal **outfall serial number 012:** ash sluice wastewater and low volume waste streams (*consisting of floor drains, water treatment wastes (demineralizer and condensate polisher), boiler blowdown, laboratory wastewater, and boiler seal water*). Such discharges shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow Rate (million gallons per day)	Report	Report	Continuous	Recorder or Pump capacity curve and operational hours
Total Suspended Solids (mg/l)	30	100	Twice per Month	Composite
Oil and Grease (mg/l)	15.0	15.0	Twice per Month	Grab

a. Effluent samples shall be taken from either the spigot on the discharge line of one of the two waste neutralization tanks or directly from one of the waste ponds, prior to discharging into the final effluent flume.

b. The total average monthly combined flow from outfall locations 011 and 012 shall not exceed 0.32 MGD and the total maximum daily combined flow from outfall locations 011 and 012 shall not exceed 0.52 MGD.

7. During the period beginning on the effective date and lasting through expiration, the Permittee shall submit three annual **Heat Load Reports** providing the following information:

a. Hourly average intake and discharge temperatures over the past year (January 1st to December 31st).

b. Net heat load (in BTUs) each hour over the past year (January 1st to December 31st). Net heat load means the total actual waste heat to the Cape Cod Canal and shall be calculated as follows: $Q = C_p m(\Delta T)$

Where Q = Heat Load, BTU/Hour
C_p = Heat Capacity (Specific Heat) of water with salinity of seawater = 0.94 BTU/pound°F
m = mass of water (discharged)
= flow rate x density of seawater
= flow rate, gallons per hour (gph) x 8.55 pounds/gallon
ΔT = discharge - intake temperature, °F

c. Amount of water discharged each hour over the past year (January 1st to December 31st).

d. This data shall be presented in electronic form, able to be read by a spreadsheet program such as Excel or Lotus 123, in tabular form as demonstrated below:

Date (MM/DD/YY HH:MM)[1]	Intake Temperature (°F)	Discharge Temperature[2] (°F)	Total Discharge Flow (gph)	Hourly Heat Load (BTU)
10/22/01 0:00				
10/22/01 1:00				
10/22/01 2:00				
⇓				
10/22/01 23:00				

[1] Use of military format is recommended for documenting hours (0:00-23:00).
[2] Temperature shall be measured at the end of the discharge flume.

e. The annual Heat Load report shall be submitted by February 28th and shall contain all data outlined above from January through December of the previous year.

f. The annual Heat Load Report is not required if a closed-cycle cooling system for both electrical generating Units 1 and 2 is in operation to achieve the standard specified in Part I.A13.g of this permit.

8. The Permittee shall submit to the Regional Administrator by January 7, 2009, **the information required by 40 C.F.R. §§ 122.21(r)(2) and (3)** which includes:

   i. Source Water Physical Data
   ii. Cooling Water Intake Structure Data

9. Biological Monitoring - Sampling and Reporting Requirements

   a. During operation of Canal Station, the Permittee shall conduct biological studies using methods described below. The Permittee shall begin monitoring 30 days after the effective date of this permit.

   b. Ichthyoplankton (fish eggs and larvae): Occurrence and Abundance of Species Entrained

      i. Entrainment monitoring shall be conducted weekly during the months of March through August, and twice per month during September through February.

      ii. Three entrainment samples shall be collected each sampling week (once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm) for each separate cooling water intake structure. Both of the cooling water circulating pumps for each operating unit must be operated continuously during the sample period.

      iii. Entrainment samples shall be collected from a representative location within the intake structure.

      iv. Sampling shall be conducted using a 0.333-mm mesh, 60-cm diameter plankton net. Each sample shall represent approximately 100 m^3 of water. Exact filtration volume shall be determined using a digital flow meter mounted in the mouth of the net and recorded for each event. After each sample, the nets shall be washed down and the sample transferred from the cod end to a jar containing sufficient formalin to produce a 5 to 10% solution.

      v. In the laboratory, all fish eggs and larvae shall be identified to the lowest practical taxa. Subsampling with a plankton splitter shall be used if the count of eggs and larvae in a sample is greater than 400 organisms so that a minimum of 200 eggs and larvae will be present in any subsample.

      vi. Ichthyoplankton counts shall be converted to densities per 100 m^3 based on the flow through the sampling net and the data shall be presented in the annual Biological Monitoring Report. Estimates of total numbers based

on Station flow rates shall also be provided. Entrainment losses shall be converted from weekly estimates of density per unit volume, to monthly and yearly loss estimates based on design plant flow. In addition, loss estimates should be converted to adult equivalents for species in which regionally specific larval survival rates are available.

c. Finfish: Occurrence and Abundance of Species Impinged

i. Impingement monitoring shall be conducted weekly during the months of March through August, and twice per month during September through February. Sampling shall be completed on the same day as entrainment monitoring, if possible.

ii. Three impingement samples shall be collected each sampling week (once on Monday morning at 8:00 am, once on Wednesday afternoon at 2:00 pm, and once on Friday night at 8:00 pm) for each screen within the two separate cooling water intake structures. Sampling shall only be conducted for each intake structure when both pumps are operating continuously during the sampling period.

iii. Sampling shall be conducted using 3/8-inch (9.5 mm) stainless steel baskets placed in the screenwash return sluiceways. Each collection shall cover a period of at least two hours following an initial cleansing screenwash and the exact time period shall be recorded. The trash racks shall also be cleaned during each sampling period and its contents examined for any fish, mammals, reptiles or invertebrates.

iv. All fish will be immediately examined for initial condition (live, dead, injured). Any fish that is alive or injured at the time of collection shall be placed in a 20-gallon holding tank supplied with continuously running ambient seawater. Latent survival shall be determined after 48 hours.

v. All fish shall be identified, counted, and measured (to the nearest mm total length) and the data shall be presented in the annual Biological Monitoring Report. In large collections, 25 individuals per species will be measured and the remainder counted. Twenty-four hour and monthly totals shall be extrapolated and reported.

vi. Impingement estimation shall be conducted using the number of fish impinged in a 24 hour period. The number of fish by species shall be counted and based upon the sampling interval, a 24 hour estimate shall be calculated. Monthly totals shall be calculated from 24 hour estimates and annual impingement rates shall be extrapolated from monthly estimates.

d. The Permittee shall inspect and remove sediment build-up on the face of the Unit 2 intake sill to return the sill to its original design capability. After this has been completed and for the duration of the permit, the Permittee shall evaluate and report the number of impinged organisms for each individual intake structure separately.

e. This biological monitoring shall be conducted for the duration of this permit unless authorization to discontinue or modify portions of the sampling program is granted by the Regional Administrator and the Commissioner.

f. A **Biological Monitoring Report** shall be submitted annually by February 28th. Each annual report shall provide and summarize the previous year's information in narrative. The report shall also include graphical representations, where appropriate and all quality control procedures.

i. The annual report conclusions will indicate the trends of the various parameters analyzed and identify any anomalies that appear in the annual historical data comparison. These differences will be explained, if possible. The Permittee will make recommendations for any remediation considered necessary or for any programs to better understand the anomaly.

ii. The annual report will provide the status of the present monitoring programs, the expected effort in the ensuing six months, and an alert to EPA and the State of any anomalies or patterns that may be evident in the data collection.

g. The Station is required to submit a written explanation if any aspect of the biological monitoring program is not conducted. The report shall be submitted as part of the Discharge Monitoring Report for the month the sampling was not done. The explanation for not monitoring must include all specific sampling activities that did not take place, along with the justification for suspending the identified sampling. This information also must be included in the annual Biological Monitoring Report.

10. Within 30 days of the effective date of this permit, the Permittee shall submit to EPA and MassDEP a copy of its **Marine Mammals Monitoring Program and Response Protocol**. The program shall include reporting requirements for any sightings of marine turtles and whales, seals or other marine mammals, in the vicinity of Mirant Canal Station and its cooling water intake structures.

a. The Permittee shall implement the Marine Mammals Monitoring Program and Response Protocol for the duration of this permit.

b. All sightings of marine mammals and sea turtles in the vicinity of Mirant Canal Station and its cooling water intake structures shall be reported in the annual Biological Monitoring Report.

11. Discharge Related Mortality

a. From the paved walkway, the Permittee shall visually inspect the shoreline areas adjacent to the discharge canal (Outfall 001) to the limits of Mirant Canal's property for any sign of environmental stress and/or fish mortality at least once daily, for the duration of the permit. A fish shall be considered dead if it exhibits a loss of equilibrium.

b. In the event of fish mortalities in the discharge or thermal plume, the Permittee shall make a reasonable attempt to collect a representative sample of the dead fish from the receiving waters or from the shoreline within four hours after the fish mortalities have been observed and hold them up to one week for review by the Division of Marine Fisheries, while also complying with all the monitoring and reporting requirements in this permit.

c. If the Permittee observes 25 or more dead fish within any 24 hour period, the Permittee shall:

i. Report to the Regional Administrator 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) Characterization of fish killed: All dead fish shall be enumerated and recorded by species. Report the species, size ranges, and approximate number of organisms involved in the incident. In addition, from a representative sample of 25% of each fish species killed, up to a maximum of 25 total fish specimens from each species, shall be sampled as follows:

(a) Length: The dead fish shall be measured to the nearest centimeter total length.

(2) The time and date of the occurrence.

(3) The operational mode of the specific facility system that was in operation that may have caused the occurrence.

(4) The opinion of the Permittee as to the reason the incident occurred.

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

ii. Immediately collect a water sample of the discharge to be analyzed for Total Residual Oxidants (TRO). Suspend all unit chlorination operations immediately after collection of water samples for TRO.

iii. Immediately initiate a separate hourly record showing: (1) the discharge temperature; (2) the dissolved oxygen levels at the intake structures and at the discharge; (3) the number of dead fish observed by species; and (4) the Total Residual Oxidants (TRO) level of the discharge. The record shall also contain as much of this data that is available from up to 24 hours prior to the event, in order to provide information as to the possible causes of the fish mortality event.

iv. If at the end of the 24 hour period from the initial observation, fish mortalities do not exceed 25 or more dead fish within any 24 hour period from the areas near the shoreline discharge locations, the Permittee will cease special monitoring and return to normal station operation (including unit chlorination).

12. Unusual Impingement Event

a. The Permittee shall rotate and visually inspect the intake screens of the cooling water intake structures for Units 1 and 2 at least every eight hours that the unit circulation pumps are operated, for the duration of the permit.

b. If the Permittee observes on the cooling water intake screens, or estimates, based on temporally-limited observations, 40 or more dead fish within any 8 hour period, the Permittee shall:

i. Initiate continuous screen washes until the impingement rate decreases to less than five fish per hour.

ii. Report to the Regional Administrator 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 dead fish shall be enumerated and recorded by species. Report the species, size ranges, and approximate number of organisms

involved in the incident. In addition, from a representative sample of 25% of each fish species killed, up to a maximum of 25 total fish specimens 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.

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

13. Cooling Water Intake Structure Requirements to Minimize Adverse Impacts from Impingement and Entrainment

a. The Permittee shall maintain the Unit 2 intake sill as designed to minimize impingement by periodically removing sediment build-up. The date of each cleaning shall be included in the annual Biological Monitoring Report.

b. The Permittee shall equip all traveling intake screens with fish holding buckets to hold collected organisms in at least 2 inches of water while they are lifted to the fish return system.

c. The Permittee shall ensure that a low pressure (< 30 psi) screen spray wash is in operation as part of each screenwash system in a manner such that most organisms are not exposed to high pressure screen spray. The low pressure spray shall be engineered to deliver aquatic organisms from the fish holding buckets to the return trough, with minimal stress.

d. During chlorination, each screen shall:
   1) be continuously rotated to reduce the amount of time impinged organisms are subjected to high levels of chlorine; and
   2) either use an alternative water source that is not chlorinated for screen washing or dechlorinate the screen wash water.

e. The Permittee shall reconfigure the fish return system such that, once returned to the Cape Cod Canal, the fish are transported away from any intake structure based on the tidal flow in the Cape Cod Canal. The fish return trough shall be engineered to provide the return of aquatic organisms to the Cape Cod Canal always at sufficient depth for fish locomotion, with minimal stress, including

during all periods of low tide level. There shall be no vertical drop of fish from the end of the fish return trough to the surface of the Cape Cod Canal.

f. After completion of the reconfigured fish return system and for the duration of the permit, the Permittee shall operate all screens continuously when the corresponding circulating water pumps are in operation.

g. The design, location, construction and capacity of the Permittee's CWIS shall reflect the best technology available (BTA) for minimizing the adverse environmental impacts of entrainment due to the CWIS. In order to satisfy this BTA standard, the Permittee shall reduce current levels of entrainment of marine organisms through the facility's CWISs to an extent comparable to what would be achieved by the use of closed-cycle cooling for all electrical generating units, with the closed-cycle cooling system optimized to maximize cooling water intake flow reductions to the extent practicable in light of site-specific constraints (e.g., restrictions on chloride discharges). The Permittee shall fulfill this BTA requirement by either of the methods specified in paragraph13.g.i or paragraph 13.g.ii below.

i. The Permittee shall utilize a closed-cycle cooling system for electrical generating Units 1 and 2 to achieve the standard specified in paragraph 13.g above; or

ii. The Permittee shall utilize another method of achieving the standard specified in paragraph 13.g above. In quantifying the entrainment reduction performance of a technological alternative to closed-cycle cooling, the percentage of entrainment reduction achieved shall be reduced by any increase in impingement mortality that results from use of the alternative method.

iii. If the Permittee utilizes a method of entrainment reduction under paragraphs I.A.13.g.i - ii, above, that would achieve the same level of impingement mortality reduction as the steps required by paragraphs I.A.13.a - f, above, then the Permittee may seek a permit modification to remove the unnecessary requirements.

h. If the Permittee later concludes that the requirements specified above in paragraph 13.g do not ensure that the design, location, construction and capacity of the facility's CWIS will reflect the BTA for minimizing adverse environmental impacts, the Permittee may request that EPA modify this permit under 40 C.F.R. § 122.62 to provide alternative BTA limits that will ensure that the requirements of Section 316(b) of the Clean Water Act, 33 U.S.C. § 1326(b), are satisfied in light of consideration of the factors specified in 40 C.F.R. § 125.3(d)(3). EPA will

process any requested permit modification consistent with applicable law, including 40 C.F.R. §§ 122.62 and 124.5. (See also Permit Condition II.A.4 ("Reopener").)

i. Any change in the location, design or capacity of the present structures (excluding those required in Part I.A.13 of this permit) shall be approved by the Regional Administrator and the Commissioner. The construction of these modifications shall be done in accordance with appropriate federal, state, and local regulation governing construction of waterways and banks.

14. Other Cooling Water Intake Structure Requirements

a. No discharge shall occur from the heated backwash process that Canal Station performs for the removal of debris from the condenser tubes. A log shall be maintained that documents the times and duration of the heated backwash operation. Logs shall be kept on the property of the Station for at least five years and shall be made available upon request.

b. All live fish, shellfish, and other aquatic organisms collected or trapped on the intake screens shall be returned to their natural habitat with minimal stress. All other material, except natural debris (e.g. seaweed), shall be removed from the intake screens and disposed of in accordance with all existing federal, state, and/or local laws and regulations that apply to waste disposal. Such material shall not be returned to the receiving waters.

c. A log shall be maintained that documents the times and duration of operation of the traveling screens for each unit. Logs shall be kept on the property of the Station for at least five years and shall be made available upon request.

15. Water Quality Requirements

a. Discharges and water withdrawals shall not impair any Class SB use of the Cape Cod Canal and shall not violate any applicable narrative criteria from the state water quality standards, although discharges may exceed numeric temperature criteria included in state water quality standards to the extent that such discharges comply with temperature and flow limits specified herein pursuant to section 316(a) and 316(b) of the Clean Water Act.

b. The thermal plumes from the station shall: (a) not block zones of fish passage, (b) not interfere with spawning of indigenous populations, (c) not change the balanced indigenous population of the receiving water, and (d) have minimal contact with surrounding shorelines.

c. Pollutants which are not limited by the permit, but have been specifically disclosed in the last permit application, may be discharged at the frequency and level disclosed in the application, provided that such discharge does not violate sections 307 and 311 of the Act or applicable water quality standards.

d. Discharges to the Cape Cod Canal shall be adequately treated to insure that the surface water remains free from pollutants in concentrations or combinations that settle to form harmful deposits, float as foam, debris, scum or other visible pollutants. They shall be adequately treated to insure that the surface waters remain free from pollutants which produce odor, color, taste, or turbidity in the receiving water which is not naturally occurring and would render it unsuitable for its designated uses.

e. The effluent shall not contain metals and/or materials in concentrations or in combinations which are hazardous or toxic to aquatic life or which would impair the uses designated by the classification of the receiving waters.

16. Except as specified in Parts I.A.2 through I.A.6 herein the Permittee shall not discharge to the Cape Cod Canal a final effluent to which it has added any pollutants.

a. There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid. The Permittee shall dispose of all known PCB equipment, articles, and wastes in accordance with 40 C.F.R. 761. The Permittee shall submit to EPA and MassDEP a certification that this disposal has been accomplished within 30 days of such disposal.

b. Chlorine may be used as a biocide for Units 1 and 2. No other biocide shall be used without explicit approval from EPA and the Commissioner. Bromine may be used as a chlorine adjunct only upon approval of EPA and MassDEP.

c. The Permittee may propose to conduct feasibility studies involving new chemicals not currently approved for water discharge. The Permittee shall gain approval from the Regional Administrator and the Commissioner before any such studies take place. A report summarizing the results of any such studies shall be submitted to the Regional Administrator and the Commissioner regarding discharge frequency, concentration, and the impact, if any, on the indigenous populations of the receiving water. The Regional Administrator or the Commissioner may require, among other parameters, Whole Effluent Toxicity testing as part of feasibility studies.

d. The Permittee shall comply with all existing federal, state, and local laws and regulations that apply to the reuse or disposal of solids, such as those periodically removed from the solids settling tanks. At no time shall these solids be

discharged to the Cape Cod Canal.

e. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Regional Administrator as soon as they know or have reason to believe (40 C.F.R. §122.42):

i. 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 ug/l);

(2) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

(3) Any other notification level established by the Regional Administrator in accordance with 40 C.F.R. §122.44(f) and Massachusetts regulations.

ii. 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 ug/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 C.F.R. §122.21(g)(7); or

(4) Any other notification level established by the Regional Administrator in accordance with 40 C.F.R. §122.44(f) and Massachusetts regulations.

17. This permit may be modified in accordance with 40 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 Section 122.62(a)(3).

B. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate discharge monitoring report (DMR) forms postmarked no later than the 15th day of the month following the effective date of the permit. The Permittee shall provide written explanations of all violations in DMR cover letters.

Mirant Canal, LLC may assert a business confidentiality claim with respect to part or all of the information submitted to EPA in the manner described at 40 C.F.R. Part 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent, and by means, of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no such claim accompanies the information when it is submitted to EPA, it may be made available to the public by EPA without further notice to Mirant Canal, LLC. Effluent information shall not be regarded as confidential.

Signed and dated originals of the DMRs, and all other reports required herein, shall be submitted to each Permit Issuing Authority at the following addresses:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Southeast Regional Office
20 Riverside Drive
Lakeville, MA 02347

In addition, copies of all Discharge Monitoring Reports and all other notifications and reports required by this permit shall be submitted to the following address:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

In addition, annual Heat Load Reports, annual Biological Monitoring Reports, Marine Mammals Monitoring Program and Response Protocol and all Discharge Related Mortality and Unusual Impingement Event notifications and Reports required by this permit shall also be submitted to:

Sharon DeMeo (Telephone: 617-918-1995)
U.S. Environmental Protection Agency
One Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023

and

Jack Schwartz (Telephone: 978-282-0308 X122)
Massachusetts Division of Marine Fisheries
30 Emerson Avenue
Gloucester, MA 01930

C. STATE PERMIT CONDITIONS

1. This discharge permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection pursuant to M.G.L. Chap. 21, §43 and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 C.M.R. 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP for this permit under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 C.M.R. 3.07. Any additional requirements contained in Massachusetts' water quality certification are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 C.M.R. 3.11.

3. Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

MARINE CHRONIC
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable silverside chronic (and modified acute) and sea urchin chronic toxicity tests in accordance with the appropriate test protocols described below:

- **Inland Silverside (Menidia beryllina) Larval Growth and Survival Test.**

- **Sea Urchin (Arbacia punctulata) 1 Hour Fertilization Test.**

Chronic and acute toxicity data shall be reported as outlined in Section VIII. The chronic Menidia test can be used to calculate an LC50 at the end of 48 hours of exposure when both an acute (LC50) and a chronic (C-NOEC) test is specified in the permit.

II. METHODS

Methods to follow are those recommended by EPA in:

Klemm, D.J. et al. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters To Marine and Estuarine Organisms, Second Edition. Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, July 1994, EPA/600/4-91/003.

Any exceptions are stated herein.

III. SAMPLE COLLECTION

For each sampling event involving the Menidia beryllina, three discharge samples shall be collected. Fresh samples are necessary for Days 1, 3, and 5 (see Section V. for holding times). A single sample is necessary for the Arbacia punctulata test. The sample shall be analyzed chemically (see Section VI). The initial sample (Day 1) is used to start the tests, and for test solution renewal on Day 2. The second sample is collected for use at the start of Day 3, and for renewal on Day 4. The third sample is used on Days 5, 6, and 7. The initial (Day 1) sample will be analyzed chemically (see Section VI). Day 3 and 5

renewal samples will be held until test completion. If either the Day 3 or 5 renewal sample is of sufficient potency to cause lethality to 50 percent or more test organisms in any of the dilutions for either species, then a chemical analysis shall be performed on the appropriate sample(s) as well.

Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for the chemical and physical analyses. The remaining sample shall be 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 oxidants (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 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

All samples held overnight shall be refrigerated at 4°C.

IV. DILUTION WATER

Grab samples of receiving water used for chronic toxicity testing shall be collected from one or several distances away from the discharge. It may be necessary to test receiving water at several distances in a separate chronic test to determine the extent of the zone of toxicity. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall 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 conductivity, salinity, total suspended solids, organic carbon, and pH 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 alternative dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection
U. S. Environmental Protection Agency-New England
JFK Federal Building (CAA)
Boston, MA 02203

It may prove beneficial to the permittee 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 AND TEST ACCEPTABILITY CRITERIA

EPA New England requires that tests be performed using four replicates of each control and effluent concentration because the on-parametric statistical tests cannot be used with data from fewer replicates. Also, if a reference toxicant test was being performed concurrently with an effluent or receiving water test and fails, both tests must be repeated.

The following tables summarize the accepted Menidia and Arbacia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN, ARBACIA PUNCTULATA, FERTILIZATION TEST[1]

1. Test type	Static, non-renewal
2. Salinity	30 o/oo ± 2 o/oo by adding dry ocean salts
3. Temperature	20 ± 1°C
4. Light quality	Ambient laboratory light during test preparation
5. Light intensity	10-20 uE/m^2/s, or 50-100 ft-c (Ambient Laboratory Levels)
6. Test vessel size	Disposal (glass) liquid scintillation vials (20 ml capacity), presoaked in control water
7. Test solution volume	5 ml
8. Number of sea urchins	Pooled sperm from four males and pooled eggs from four females are used per test
9. Number of egg and sperm cells per chamber	About 2000 eggs and 5,000,000 sperm cells per vial
10. Number of replicate chambers per treatment	4
11. Dilution water	Uncontaminated source of natural seawater or deionized water mixed with artificial sea salts
12. Dilution factor	Approximately 0.5
13. Test duration	1 hour and 20 minutes
14. Effects measured	Fertilization of sea urchin

	eggs
15. Number of treatments per test[2]	5 and a control. An additional dilution at the permitted effluent concentration (% effluent) is required.
16. Acceptability of test	Minimum of 70% fertilization in controls. Effluent concentrations exhibiting greater than 70% fertilization, flagged as statistically significantly different from the controls, will not be considered statistically different from the controls for NOEC reporting.
17. Sampling requirements	For on-site tests, samples are to be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
18. Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA/600/4-91/003, July 1994.

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

EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA, GROWTH AND SURVIVAL TEST[1]

1.	Test type	Static, renewal
2.	Salinity	5 o/oo to 32 o/oo ± 2 o/oo by adding artificial sea salts
3.	Temperature	25 ± 1°C
4.	Light quality	Ambient laboratory light
5.	Light intensity	10-20 uE/m^2/s, or 50-100 ft-C (Ambient Laboratory Levels)
6.	Photoperiod	16 hr light, 8 hr darkness
7.	Test vessel size	600 - 1000 mL beakers or equivalent (glass test chambers should be used)
8.	Test solution volume	500-750 mL/replicate loading and DO restrictions must be met)
9.	Renewal of test solutions	Daily using most recently collected sample.
10.	Age of test organisms	Seven to eleven days post hatch; 24 hr range in age.
11.	Larvae/test chamber	15 (minimum of 10)
12.	Number of replicate chambers	4 per treatment
13.	Source of food	Newly hatched and rinsed Artemia nauplii less than 24 hr old
14.	Feeding regime	Feed once a day 0.10 g wet wt Artemia nauplii per replicate on days 0-2; feed 0.15 g wet wt Artemia nauplii per replicate on days 3-6
15.	Cleaning	Siphon daily, immediately before test solution renewal and feeding

16.	Aeration[2]	None

17.	Dilution water	Uncontaminated source of natural seawater; or deionized water mixed with artificial sea salts.
18.	Effluent concentrations[3]	5 and a control. An additional dilution at the permitted effluent concentration (% effluent) is required.
19.	Dilution factor	$\geq$ 0.5
20.	Test duration	7 days
21.	Effects measured	Survival and growth (weight)
22.	Acceptability of test	The average survival of control larvae is a minimum of 80%, and the average dry wt of unpreserved control larvae is a minimum of 0.5 mg, or the average dry wt of preserved control larvae is a minimum of 0.43 mg if preserved not more than 7 days in 4% formalin or 70% ethanol.
23.	Sampling requirements	For on-site tests, samples are collected daily and used within 24 hours of the time they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
24.	Sample Volume Required	Minimum of 6 liters/day.

Footnotes:

[1] Adapted from EPA/600/4-91/003, July 1994.

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

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

VI. CHEMICAL ANALYSIS

As part of each daily renewal of the Menidia test, pH, dissolved oxygen, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. It must also be done at the start of the Arbacia test. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Quantification Level (mg/L)
pH	x	x	---
Salinity	x	x	PPT (o/oo)
Total Residual Oxidants*1	x	x	0.05
Total Solids and Suspended Solids	x	x	

Ammonia	x	x	
	0.1		
Total Organic Carbon	x	x	
	0.5		
Total Metals			
Cd	x		0.001
Cr	x		0.005
Pb	x		0.005
Cu	x		0.0025
Zn	x		0.0025
Ni	x		0.004
Al	x		0.02

Superscripts:

*1 Total Residual Oxidants

Either of the following methods from the 18th Edition of the APHA (1992) Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

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

or use USEPA Manual of Methods Analysis of Water or Wastes, Method 330.5.

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 flow chart on page 56 of EPA/600/4-91/003 for appropriate point estimation method to use on a given data set.

Chronic No Observed Effect Concentration (C-NOEC)

Methods of Estimation:

- Dunnett's Procedure
- Bonferroni's T-Test
- Steel's Many-One Rank Test
- Wilcoxin Rank Sum Test

Reference flow charts on pages 191, 192, and 321 of EPA/600/4-91/003 for the appropriate method to use on a given data set.

In the case of two tested concentrations causing adverse effects but an intermediate concentration not causing a statistically significant effect, report the C-NOEC as the lowest concentration where there is no observable effect. The definition of NOEC in the EPA Technical Support Document only applies to linear dose-response data.

VIII. TOXICITY TEST REPORTING

A report of 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; and
- 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
(January, 2007)

TABLE OF CONTENTS

NPDES PART II STANDARD CONDITIONS
(January, 2007)

PART II. 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) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the 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, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements 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.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

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 notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator 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 Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. 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).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR 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 CFR 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 as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §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.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, 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 Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. 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 and with the requirements of storm water pollution prevention plans. 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 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 be reasonably 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 provision of Paragraphs B.4.c. and 4.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.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) 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
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator 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;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(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.

PART II. 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 for 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 five years (or longer as required by 40 CFR Part 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 except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator 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 results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. 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.

2. Inspection and Entry

The permittee shall allow the Regional Administrator 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 CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required 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 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§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 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 Regional Administrator 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 Regional Administrator. The Regional Administrator 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 CWA. (See 40 CFR Part 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.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the 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 submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission 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.

(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 CFR §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 Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, 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.

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 Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §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 noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. 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 Regional Administrator. 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.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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 to, 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 and 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.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

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" measured during the calendar week divided by the number of "daily discharges" measured during the 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.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

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) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the 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.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard 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 (See "Point Source" definition).

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 Regional Administrator 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".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge 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 (CWA), 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 which is not a land application unit, surface impoundment, injection well, or waste pile.

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

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

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 tribe organization, or a designated and approved management agency under Section 208 of the CWA.

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 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 rig 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 Regional Administrator 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 Regional Administrator shall consider the factors specified in 40 CFR §§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 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).

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

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

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 CFR §122.2).

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 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (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 any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

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

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

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR 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 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, 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 EPCRA Section 313, 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 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 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 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

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 which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

Toxic pollutants 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 wastewater 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 wastewater 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 Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR 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 CFR Part 503.

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

Waters of the United States 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 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 the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration 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. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 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 sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

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

Industrial wastewater is wastewater generated in a commercial or industrial process.

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 with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

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.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

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

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is 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; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

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 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

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.

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

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

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

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. 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)	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
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
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)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". 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.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is 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.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.