

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),

**General Electric Company
159 Plastics Avenue
Pittsfield, MA 01201**

is authorized to discharge from the facility located at

**General Electric Company
159 Plastics Avenue
Pittsfield, MA 01201
(See also: Attachment A)**

to receiving waters named the

**Housatonic River, Unkamet Brook
(Housatonic River Watershed)**

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

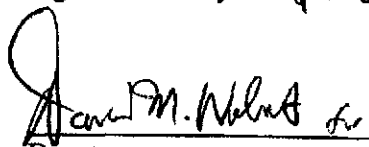
This permit will become effective on December 1, 2008.

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


This permit supersedes the permit issued on September 30, 1988, which became effective on February 7, 1992, was modified on May 21, 1992, and expired on February 7, 1997.

This permit consists of 24 pages in Part I including effluent limitations, monitoring requirements, Attachments A (list of outfalls), B (toxicity protocol), C (Best Management Practices requirements), D (PCB method specification), E (Example Effluent Monitoring Summary Table) and 25 pages in Part II including Standard Conditions and Definitions.

Signed this 30th day of September, 2006



Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA



Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from the 64G treatment system (which discharges through the outfall serial number 005 to the Housatonic River). The discharge consists of treated groundwater and city water (used for fire protection testing), treated water from storm sewer cleaning (see BMP 1 in Attachment C), and treated water generated as part of consent decree response actions. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge and collected at a point that includes the final effluent from the 64G treatment system, prior to combining with other 005 flow components.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow* ¹	MGD	Report	—	Report	Continuous	Recorder
Flow* ⁴	MGD	Report	—	Report		
Oil and Grease	mg/l	Report	—	Report	2/Month	Grab
TSS	mg/l	Report	—	Report	2/Month	24-Hour Composite* ⁶
pH	st. units	(See Part I.A. footnote *21.)		Report	2/Month	Grab
PCBs, total * ^{14,*15}	ug/l	Report	—	Report	2/Month	24-Hour Composite* ⁶
Volatile Organic Compounds (VOCs), total * ²⁰	ug/l	Report	—	Report	2/Month	Grab
Semivolatiles (SVOCs), total * ²⁰	ug/l	Report	—	Report	2/Month	Grab
Whole Effluent Toxicity, LC ₅₀ * ¹⁶	%	—	—	Report	1/Quarter * ^{18,*19}	24-Hour Composite* ⁶
Whole Effluent Toxicity, IC ₂₅ and C-NOEC * ¹⁷	%	—	—	Report	1/Quarter* ^{18*19}	24-Hour Composite* ⁶

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E..

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent from outfall serial number **005** to the Housatonic River. The discharge consists of treated effluent from the 64G treatment plant (see Part I.A.1. above for specific flow components) and treated groundwater and storm water from the 64T treatment plant. The discharge will be limited and monitored by the permittee as specified below^{*4}. Samples shall be representative of the discharge through outfall 005 to the Housatonic River^{*5}. When outfall 005 is flooded, the permittee may sample using flow proportioned samples from the 64T and 64G discharges. ******

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Rainfall/Precipitation ^{*11} ,	inches	Report	Report	Report	Continuous	Recorder
Flow ^{*1}	MGD	Report	—	Report	Continuous	Recorder
Flow ^{*4}	MGD	Report	—	Report		
Oil and Grease ^{*5}	mg/l	—	—	15	2/Month	Grab
Oil and Grease ^{*5}	lbs/day	—	—	135		
TSS ^{*5}	mg/l	Report	—	Report	2/Month	24-Hour Composite ^{*6}
TSS ^{*5}	lbs/day	188	—	270		
pH	st. units	(See Part I.A.footnote *21)			2/Month	Grab
PCBs, total ^{*5,*14} ,	ug/l	Report	—	Report	2/Month	24-Hour Composite ^{*6}
PCBs, total ^{*5,}	lbs/day	0.01	—	0.03		

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

****** The permittee shall note the days each month that the outfall is flooded on the outfall's monthly summary table.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- During the period beginning the effective date and lasting through expiration, during **dry weather** the permittee is authorized to discharge treated effluent from outfall serial number **005**, including treated groundwater from the 64G treatment plant and treated groundwater from the 64T treatment plant. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge through outfall 005 to the Housatonic River during **dry weather**.^{*2} When outfall 005 is flooded, the permittee may sample using flow proportioned samples from the 64T and 64G discharges.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow ^{*4}	MGD	Report	—	Report	Continuous	Recorder
Oil and Grease	mg/l	—	—	15	2/Month	Grab
TSS	mg/l	Report	—	Report	2/Month	24-Hour Composite ^{*6}
TSS	lbs/day	Report	—	Report		
pH	st. units	(See Part I.A. footnote *21)			2/Month	Grab
PCBs, total ^{*13, *15}	ug/l	0.014	—	Report	2/Month	24-Hour Composite ^{*6}
PCBs, total	lbs/day	Report	—	Report		
Volatile Organic Compounds (VOCs), total ^{*20}	ug/l	Report	—	Report	2/Month	Grab
Semivolatiles (SVOCs), total ^{*20}	ug/l	Report	—	Report	2/Month	Grab

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- During the period beginning the effective date and lasting through expiration, during **wet weather** the permittee is authorized to discharge treated effluent to the Housatonic River from outfall serial number **005**, including treated groundwater from the 64G treatment plant and treated groundwater and stormwater from the 64T treatment plant. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge through outfall 005 to the Housatonic River during **wet weather**.^{*7} When outfall 005 is flooded, the permittee may sample using flow proportioned samples from the 64T and 64G discharges.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Rainfall/Precipitation ^{*12}	inches	Report	Report	Report	Continuous	Recorder
Flow ⁴	MGD	Report	—	Report	Continuous	Recorder
Oil and Grease	mg/l	—	—	15	2/Month	Grab ^{*9}
TSS	mg/l	Report	—	Report	2/Month	Composite ^{*8}
TSS	lbs/day	Report	—	Report		
pH	st. units	(See Part I.A. footnote *21.)		Report	2/Month	Grab ^{*9}
PCBs, total ^{*14}	ug/l	Report	—	Report	2/Month	Composite ^{*8}
PCBs, total	lbs/day	Report	—	Report		

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- 5. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent through outfall serial number **05A** (an overflow from the 005 drainage system) to the Housatonic River **during wet weather**. The discharge consists of flow from the 64W oil/water separator, which includes groundwater (infiltration), city water (used for fire protection testing) and storm water. **Discharges during dry weather are prohibited**. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge through outfall 05A **during wet weather**.⁷ Samples are not required when outfall 05A is flooded.**

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Rainfall / Precipitation ^{*12}	inches	Report	—	Report	Per Discharge Event	Total
Flow ^{*3}	MGD	Report	—	Report	Continuous	Recorder
Flow ^{*4}	MGD	Report	—	Report		
Number of Activations ^{*10}	#	Report	—	—	Per Discharge Event	Observation
Oil and Grease	mg/l	—	—	15	1/Month	Grab ^{*9}
Oil and Grease	lbs/day	Report	—	Report		
TSS	mg/l	Report	—	Report	1/Month	Composite ^{*8}
TSS	lbs/day	Report	—	Report		
pH	st. units	(See Part I.A. footnote *21)			1/Month	Grab ^{*9}
PCBs, total ^{*14}	ug/l	Report	—	Report	1/Month	Composite ^{*8}
PCBs, total	lbs/day	Report	—	Report		

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

** The permittee shall note the days each month that the outfall is flooded on the outfall's monthly summary table.

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6. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent through outfall serial number **05B** (untreated overflow from the 005 drainage system) to the Housatonic River during **wet weather**. The discharge consists of untreated groundwater infiltration, city water (used for fire protection testing) and storm water to the Housatonic River. **Discharges during dry weather are prohibited**. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharges and collected **during wet weather** conditions.^{*7}

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Rainfall/Precipitation ^{*12}	inches	Report	—	Report	Per Discharge Event	Total
Flow ^{*3}	MGD	Report	—	Report	Continuous	Recorder
Flow ^{*4}	MGD	Report	—	Report		
Number of Activations ^{*10}	#	Report	—	—	Per Discharge Event	Observation
Oil and Grease	mg/l	—	—	15	1/Month	Grab ^{*9}
TSS	mg/l	Report	—	Report	1/Month	Composite ^{*8}
pH	st. units	(See Part I.A. footnote *21.)			1/Month	Grab ^{*9}
PCBs, total ^{*14}	ug/l	Report	—	Report	1/Month	Composite ^{*8}

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for these discharges during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

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7. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 006 to the Housatonic River during **dry weather**, consisting of treated groundwater infiltration and city water (used for fire protection testing) from oil/water separator 64X. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge **during dry weather** conditions.*²

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>		<u>Monitoring Requirement</u>		
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow* ¹	MGD	Report	—	Report	Continuous	Recorder
Flow* ⁴	MGD	Report	—	Report	Continuous	Recorder
Oil and Grease	mg/l	—	—	15	2/Month	Grab
TSS	mg/l	Report	—	Report	2/Month	24-Hour Composite* ⁶
TSS	lbs/day	Report	—	Report		
pH	st. units	(See Part I.A. footnote *21.)		Report	2/Month	Grab
PCBs, total* ¹³	ug/l	0.014	—	Report	2/Month	24-Hour Composite* ⁶
PCBs, total	lbs/day	Report	—	Report	2/Month	
Volatile Organic Compounds (VOCs), total* ²⁰	ug/l	Report	—	Report	2/Month	Grab
Semivolatiles (SVOCs), total* ²⁰	ug/l	Report	—	Report	2/Month	Grab

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

8. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent through outfall serial number 006 to the Housatonic River during **wet weather**, including effluent from the 64X oil water separator, consisting of groundwater infiltration, city water (used for fire protection testing) and storm water to the Housatonic River. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge and collected **during wet weather**.⁶

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Rainfall / Precipitation ^{*12}	inches	Report	—	Report	Per Discharge Event	Total
Flow ^{*4}	MGD	Report	—	Report	Continuous	Recorder
Oil and Grease	mg/l	—	—	15	2/Month	Grab ^{*9}
TSS	mg/l	Report	—	Report	2/Month	Composite ^{*8}
TSS	mg/l	Report	—	Report		
pH	st. units	(See Part I.A.footnote *21.)			2/Month	Grab ^{*9}
PCBs, total ^{*13}	ug/l	Report	—	Report	2/Month	Composite ^{*8}
PCBs, total	ug/l	Report	—	Report		

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

9. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent from outfalls serial numbers **06A** and **SR05** (flows from the 006 drainage system that exceed the capacity of OWS64X and its related piping capacity) consisting of untreated groundwater infiltration, city water (used for fire protection testing) and storm water to the Housatonic River during wet weather. The discharges will be limited and monitored by the permittee as specified below. **Discharges during dry weather are prohibited.** Samples shall be representative of the discharge and collected during wet weather.*7

Effluent Characteristic	Outfall	Units	Discharge Limitation		Monitoring Requirement	
			Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency
Rainfall/Precipitation *12	06A, SR05	inches	Report*	—	Report*	Total
Flow*4	SR05	MGD	Report	—	Report	Recorder
Flow*3	06A	MGD	Report	—	Report	Recorder
Flow*4	06A	MGD	Report	—	Report	Recorder
Number of Activations *10	06A, SR05	#	Report	—	—	Per Discharge Event Observation
Oil and Grease	06A	mg/l	Report	—	15	1/Month Grab*9
TSS	06A	mg/l	Report	—	Report	1/Month Composite*8
TSS	06A	lbs/day	Report	—	Report	
pH	06A	st. units	(See Part I.A. footnote *21.)			1/Month Grab*9
PCBs, total *14	06A	ug/l	Report	—	Report	1/Month Composite*8
PCBs, total	06A	lbs/day	Report	—	Report	

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for these discharges during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

10 During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from internal outfall **09B** (discharge from oil/water separator 119W which discharges through outfall serial number **009**) to Unkamet Brook. The discharge includes city water (used for fire protection testing), ground water infiltration, and storm water. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge from OWS 119W^{*5}.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency
Rainfall/Precipitation ^{*12}	inches	Report	Report	Report	Continuous Recorder
Flow ^{*1}	MGD	Report	—	Report	Continuous Recorder
Flow ^{*4}	MGD	Report	—	Report	
Oil and Grease ^{*5}	mg/l	—	—	15	2/Month Grab
Oil and Grease ^{*5}	lbs/day	—	—	438	
TSS ^{*5}	mg/l	Report	—	Report	2/Month 24-Hour Composite ^{*6}
TSS ^{*5}	lbs/day	213	—	876	
pH	st. units	(See Part I.A. footnote *21.)		2/Month	Grab
PCBs, total ^{*14}	ug/l	Report	—	Report	2/Month 24-Hour Composite ^{*6}
PCBs, total	lbs/day	Report	—	Report	

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

11. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated and untreated effluent from outfall serial number 009 to Unkamet Brook, including city water (used for fire protection testing) and ground water infiltration, to Unkamet Brook during **dry weather**. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge and collected during **dry weather** *2 at sampling point 009 (the combined discharges from OWS 119W and flow bypassed around OWS 119W).

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement		
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow *1	MGD	Report	—	Report	Continuous	Recorder
Flow *4	MGD	Report	—	Report		
Oil and Grease	mg/l	Report	—	15	2/Month	Grab
TSS	mg/l	Report	—	Report	2/Month	24-Hour Composite *6
TSS	lbs/day	Report	—	Report		
pH	st. units	(See Part I.A. footnote *21.)			2/Month	Grab
PCBs, total *13	ug/l	0.014	—	Report	2/Month	Grab
PCBs, total	lbs/day	Report	—	Report		

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In addition to the specific reporting required on the DMR, the permittee shall attach a summary of all samples collected for this discharge during the reporting period, showing the results of each sample per calendar day. An example summary table is shown in Attachment E.

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A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

12. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated and untreated effluent from outfall serial number 009 to Unkamet Brook **during wet weather**, including city water (used for fire protection testing), ground water infiltration, and storm water. The discharge will be limited and monitored by the permittee as specified below. Samples shall be representative of the discharge and collected **during wet weather**^{*7} at sampling point 009 (the combined discharges from OWS 119W and flow bypassed around OWS 119W).

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency
Flow ^{*4}	MGD	Report	—	Report	Continuous Recorder
Oil and Grease	mg/l	—	—	15	2/Month Grab ^{*9}
TSS	mg/l	Report	—	Report	2/Month Composite ^{*8}
TSS	lbs/day	Report	—	Report	
pH	st. units	(See Part I.A. footnote *21)			2/Month Grab ^{*9}
PCBs, total ^{*14}	ug/l	Report	—	Report	2/Month Composite ^{*8}
PCBs, total	lbs/day	Report	—	Report	

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Footnotes:

- *1 Report the average monthly and maximum daily flows.
- *2 Dry weather is defined as any day on which less than 0.1 inches of total precipitation falls and no snow melt occurs.
- *3. Report the monthly average and maximum daily flows. The monthly average flow is defined as the average flow per day of discharge.
- *4 Report the average monthly and maximum daily flows for the day(s) that PCB samples were taken.
- *5 This sampling will determine compliance with technology-based limits. The sampling shall be conducted as part of a routine sampling plan, in which samples are collected on the same day(s) of the month without regard to weather conditions. If the weather on the day of the sampling meets the definition of a dry weather day, the collected data may be used towards satisfying the dry weather monitoring requirements for the outfall.
- *6 A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day (e.g., 7 a.m. Monday - 7 a.m. Tuesday). For intermittent discharges, the number of hourly grab samples may be reduced to correspond to the period of discharge.
- *7. Wet weather is defined as any day on which more than 0.1 inches of total precipitation falls or on which snow melt occurs, and the interval from the preceding measurable storm is at least 24 hours. The 24-hour storm interval is waived when the preceding measurable storm did not yield a measurable discharge, or if the permittee is able to document that less than a 24 hour interval is representative for local storm events during the sampling period.
- *8. Wet weather composite sampling shall be done on a wet weather day. The permittee will collect flow proportioned samples over the duration of the storm (or collect samples at equal time intervals and combine them proportional to flow) and shall collect the first aliquot within the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the permittee will sample during the first hour of discharge and describe why collecting a grab sample during the first 30 minutes was *impracticable*. The permittee will submit this information with the discharge monitoring report.
- *9. Wet weather grab samples shall be taken during the first 30 minutes of the discharge. If it is not practicable to take the sample during the first 30 minutes, the permittee will sample during the first hour of discharge and describe why collecting a grab sample during the first 30 minutes was *impracticable*. The permittee will submit this information with the discharge monitoring report.
- *10 Report the number of calendar days during the month that the outfall discharged.
- *11. The permittee will maintain a rainfall rain gauge on-site when the air temperature is above freezing, and will report the National Weather Service data for Pittsfield, MA, when the air temperature is below freezing. Report on the DMR the average and daily maximum precipitation

that fell on the days PCB samples were taken.

- *12. The average and daily maximum precipitation that fell on the days that sampling occurred shall be reported on the DMR
- *13. The total PCB monthly average compliance limit for this discharge is set at 0.065 ug/l, and the minimum level (ML) is defined as 0.065 ug/l. The permittee will: (1) use Modified Method 8082, attached to this permit as **Attachment D**, (2) meet all the specifications within **Attachment D**, (3) make every effort to achieve a minimum detection level (MDL) of 0.014 ug/l using Modified Method 8082, and (4) provide the result of total PCBs as the sum of all Aroclors. Sample results less than 0.065 ug/l shall be reported as zero on the discharge monitoring report; numerical results of all samples, including results less than the ML, shall be reported in an attachment to the discharge monitoring report (DMR).
- *14. The total PCB minimum level (ML) for total PCBs is defined as 0.065 ug/l. The permittee will: (1) use Modified Method 8082, attached to this permit as **Attachment D**, (2) meet all the specifications within **Attachment D**, (3) make every effort to achieve a minimum detection level (MDL) of 0.014 ug/l using Modified Method 8082, and (4) will provide the result of total PCBs as the sum of all Aroclors. Sample results less than 0.065 ug/l shall be reported as zero on the discharge monitoring report; numerical results of all samples, including results less than the ML shall be reported in an attachment to the discharge monitoring report (DMR).
- *15. Interim requirements and a schedule for attaining an effluent minimum level concentration of (0.065 ug/l) may be found in Section D of this permit.
- *16. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) will cause no more than a 50% mortality rate.
- *17. C-NOEC (chronic-no observed effect concentration) and the IC₂₅ concentrations are defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results exhibit a non-linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect.
- *18. The permittee will: (1) conduct chronic (and modified acute) toxicity tests quarterly, (2) test the daphnid, Ceriodaphnia dubia in accordance to the schedule in the table below, (3) calculate the percent minimum significant difference (PMSD) as defined within the 2002 EPA National Toxicity Guidance Document (i.e., a measurement of the test's sensitivity), (4) calculate and report both the IC₂₅ and C-NOEC endpoints, and (5) select and report as the final test endpoint that which most closely represents the appropriate test result based on the interpretation of the dose response curve (refer to EPA 821-B-00-004, July 2000, Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)). The tests must be performed in accordance with test procedures and protocols specified in **Attachment B** of this permit.

Test Dates: Second Week in	Submit Results By:	Test Species:	Acute Limit: LC ₅₀	Chronic Limit: C-NOEC and IC ₂₅
March June September December	April 30 th July 31 st October 31 st January 31 st	<u>Ceriodaphnia dubia</u> (Daphnid)	Report	Report

After submitting **two years** of WET test results, all of which demonstrate an IC25 of 100%, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

- *19. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee will follow procedures outlined in **Attachment B** Section IV, DILUTION WATER in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment B**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee will revert to obtaining approval as outlined in **Attachment B**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" will be transmitted to the permittee as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment B**.
- *20. Report all volatile organic compounds and semivolatile organic compounds detected using EPA Method 624 and attach the results to the discharge monthly reports.
- *21. The pH of the effluent will not be less than 6.5 or greater than 9.0 at any time, unless these values are exceeded due to natural causes.

PART I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

13. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge uncontaminated groundwater and storm water from the following outfall serial numbers: YD10, YD11, and YD12 (discharges to Unkamet Brook), YD6, YD7, YD8, YD9, YD13, YD14, and YD16 (discharges to the Housatonic River). Discharges during dry weather are prohibited.

For one year from the effective date of the permit, the permittee must inspect the authorized outfalls once per month during dry weather. If discharges are occurring, the flow rate must be estimated and grab samples collected for pH, TSS, and PCBs (using Modified Method 8082). A summary of these inspections, including all monitoring data, must be attached to the DMR. Based on the sampling results, EPA may extend this monitoring requirement via certified letter or reopen the permit to include effluent limitations on dry weather discharges.

Wet weather monitoring of the authorized outfalls must be conducted as required in Part C.2.b.

The following five requirements (Parts I.A.14.-18.) apply to all discharges at this site:

14. The discharge will not cause objectionable discoloration of the receiving waters.
15. The effluent will contain neither a visible oil sheen, foam, nor floating solids at any time.
16. The permittee will demonstrate adequate laboratory controls and appropriate quality assurance procedures, in accordance with 40 C.F.R. § 122.41(e).
17. All samples and measurements taken for the purpose of monitoring will be representative of the monitored activity, in accordance with 40 C.F.R. § 122.41(j).
18. The discharge will not cause or contribute to an exceedance of the instream temperature requirements under 314 CMR 4.05(3)(b)2 of the Massachusetts Water Quality Standards.
19. All existing manufacturing, commercial, mining, and silvaculture dischargers must notify the Director as soon as they know or have reason to believe:
- a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2, 4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

- (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. § 122.21(g)(7); or
 - (4) The level established by the Director in accordance with 40 C.F.R. § 122.44(f).
 - b. That activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a 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 (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) The level established by the Director in accordance with 40 C.F.R. § 122.44(f).
 - c. That the permittee has begun or expects to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.
- 20. Except as part of treatment plant operations at the 64G and 64T treatment plants, the permittee shall not add chemicals to any of the discharges at the facility.
- 21. This permit may be modified, or revoked and reissued, on the basis of new information in accordance with 40 CFR § 122.62.
- 22. Toxics Control
 - a. The permittee will not discharge any pollutant or combination of pollutants in toxic amounts.
 - b. Any toxic components of the effluent will not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards
- 23. Numerical Effluent Limitations for Toxicants

EPA or the MassDEP may use the results of the toxicity tests and chemical analysis conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 C.F.R. § 122.
- 24. Floor Drains

Within ninety (90) days of the effective date of the permit, the permittee must: (1) verify the location of each floor drain at active operations buildings at the GE Pittsfield site (e. g., Building 100), and (2) permanently remove or seal those floor drains within the building that do not directly discharge to the sewer system. **Within one hundred and eighty (180) days** of the effective date of the permit, the permittee must: (1) verify the location of each floor drain at inactive operations buildings at the GE Pittsfield site that are not otherwise scheduled for demolition under the Brownfields Program (i.e., Buildings 7, 9, 9B, 10, 12, 12T, 14, 52, 53, 64, 78, 106, 107, 108, 119, 121), and (2) permanently remove or seal those floor drains within each of these buildings that do not directly discharge to the sewer system. Office buildings are not subject to the terms of this requirement. In addition, other buildings scheduled for future demolition under the Brownfields Program are not subject to the terms of this requirement.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in **Attachment A** of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and will be reported in accordance with Part II, Section D.1.e.(1) of the General Requirements of this permit (Twenty-four hour reporting).

To ensure that all point source discharges of pollutants owned or operated by the permittee are included in the permit, the permittee shall complete a survey of its site to confirm that there are no point source discharges of pollutants from its site that are not included in the permit. This survey shall evaluate whether there are any pipes, ditches, swales, or other discrete conveyances that discharge pollutants either directly to waters of the United States or to conveyance systems owned and operated by others that discharge to waters of the United States. A report of the survey, including a map showing any additional discharges, including flow components (e.g. storm water, groundwater infiltration), estimated flows, and sampling for TSS and PCBs shall be submitted to MassDEP and EPA **within 120 days of the effective date of the permit**.

C. BEST MANAGEMENT PRACTICES

1. The permittee must implement the Best Management Practices (BMP) requirements upon the effective date of the permit, which include: (1) BMPs described in **Attachment C**, and (2) the Storm Water Pollution Prevention Plan (SWPPP) described below. When the permit becomes effective, all of the BMP requirements will be enforceable.
2. The permittee must maintain and implement a storm water pollution prevention plan (SWPPP) for storm water runoff areas discharging to point sources authorized by this permit. The permittee's storm water discharges are subject to the best management practices established in the permittee's Storm Water Pollution Prevention Plan (SWPPP) and as described in **Attachment C**. The permittee must submit an updated SWPPP to EPA and the MassDEP **within 6 (six) months** of the effective date of this permit. The updated SWPPP must be implemented **within 60 (sixty) days** of

the submittal date, along with any modifications that are agreed upon by EPA, MassDEP and GE. The plan shall be updated annually and a copy submitted to EPA and MassDEP by **March 1** each year.

- a. The contents of the SWPPP must meet all of the requirements of Section 4 of the Storm Water Multi-Sector Permit for Industrial Activities, and must also include up-to-date mapping of the storm water collection system, showing all storm water collection pipes, pipe type (e.g. concrete, clay, perforated) pipes sizes, connections, manhole locations, and treatment units. The SWPPP must also include routine inspections of active and plugged outfalls to ensure the integrity of the seals on plugged outfalls to ensure that storm drains not authorized to discharge during dry weather are not discharging under those conditions, and to ensure that there is no breakout of groundwater in the vicinity of the outfalls.
- b. The permittee must include within their SWPPP, a plan for sampling all of the storm water discharges listed under Part I.A.13. of this permit **once each year**. At a minimum the following parameters must be sampled: average and peak flow, oil and grease, PCBs (using Modified Method 8082), TSS, and zinc (pollutant samples shall be all collected as storm duration flow composite samples, see footnote *8 in Part I.A.).
3. The permittee must attach all BMP sampling results to their monthly discharge monitoring reports (includes "**Attachment C**" and SWPPP requirements.)
4. By **March 1 of each year**, the permittee must submit a report to MassDEP and EPA summarizing the activities conducted under the BMP and SWPPP during the previous year, including the submittal of any storm water sampling performed during the year which was not previously submitted.

D. COMPLIANCE SCHEDULE

1. PCB Limits and Capability Studies

To achieve compliance with the dry weather discharge monthly average PCB effluent limitation for outfall 005 (0.014 ug/l), the permittee shall complete the activities in the following compliance schedule. Interim effluent limitations for dry weather discharges through outfall 005 are included in the schedule. The PCB interim compliance limit for the dry weather discharge from outfall 005 shall be a monthly average total PCBs concentration of 0.15 ug/l until compliance with the ML (0.065 ug/l) is achieved in accordance with the schedule set forth below. Total PCBs will be measured using the Modified Method 8082 (protocol attached to the permit as "**Attachment D**"), with a minimum detection level of approximately 0.014 ug/l.

Within 9 months following the effective date of the permit, GE shall complete a PCB treatment capability study of the 64G treatment system which will evaluate whether the existing facility is capable of achieving a monthly average limit of 0.065 ug/l.

Within 9 months following the effective date of the permit, the permittee shall complete a dry weather discharge monitoring program and treatment plant capability study for treatment plant

64T that demonstrates whether the dry weather discharge from this facility achieves the final PCB compliance limit of 0.065 ug/l. This study shall include continuous flow measurement of outfall 64T and at least twice per month dry weather sampling of PCBs (using modified method 8082), oil and grease, TSS and pH. These data shall be attached to the permittee's DMR submittal each month. A summary report shall be submitted to EPA and MassDEP **within 10 months of effective date of the permit**. The summary report shall include a summary of the collected effluent data, a description of any modifications made to the 64T treatment plant during the study period and a determination whether 64T treatment plant can consistently achieve an effluent PCB concentration of 0.065 ug/l during dry weather.

Following completion of the 64G PCB treatment capability study and the 64T dry weather monitoring program/capability study, the discharge limit will be established as follows:

- If 64G monitoring data and the 64T dry weather monitoring data required above each demonstrate a 100% capability of achieving a monthly average limit of 0.065 ug/l, the deadline for attaining the monthly average total PCB limit of 0.065 ug/l for outfall 005 during dry weather shall be **30 days** after the submittal of the required reports**. Compliance capability will be determined using EPA's modified delta log normal method.
- If either the 64G or 64T do not demonstrate a 100% compliance capability with a monthly average limit of 0.065 ug/l, then the interim compliance limit will remain at 0.15 ug/l until GE upgrades the 64G and/or 64T facilities to achieve a monthly average PCB concentration of 0.065 ug/l in accordance with the treatment capability studies. Any treatment capability study shall include a plan and schedule pertaining to treatment facility upgrades and/or dry weather flow reductions, subject to EPA and MassDEP approval, for achieving the average limit of 0.065 mg/l as soon as possible in accordance with 40 C.F.R. § 122.47. Any such schedule shall include interim status reports on the progress toward achieving the limit at six (6) month intervals, calculated from the date the treatment capability is submitted. GE shall comply with the 0.065 ug/l average limit on outfall 005 during dry weather **30 days** after the date required to complete the upgrade(s).

** If subsequent actions undertaken by GE to meet groundwater or NAPL-related Performance Standards or other requirements of the Consent Decree require a significant increase in the 64G treatment plant flow rates above the flow rates that occurred during the 64G treatment plant capability study, and if EPA's On-Scene Coordinator concurs that the increased flows are from such Consent Decree work, then GE must meet an interim compliance limit of 0.15 ug/l for the period during which such increased flow rates are necessary. GE must comply with the interim limit during the period of increased flows, and shall endeavor to achieve a goal of a monthly PCB concentration of 0.065 ug/l. At the end of the period of increased flows, the final limit of 0.065 ug/l shall again apply.

2. Optimization Study and Improvements

Following completion of the 64G and 64T PCB treatment capability studies and achievement of the final PCB compliance limit of 0.065 ug/l (as described in item 1 of this

section), GE shall commence a PCB treatment optimization study of the 64G treatment system. The optimization study shall evaluate further enhancements of the treatment plant, with the goal of further reducing the discharge of PCBs to the detection limit (MDL) of 0.014 ug/l.

This study shall evaluate the cost and effectiveness of enhancement alternatives including:

- Operational adjustments to the existing treatment plant, including increased frequency of activated carbon replacement.
- Additional or different activated carbon columns.
- Enhance treatment prior to activated carbon columns.
- Filtration following activated carbon columns.

Within 18 months of the effective date of the permit, or 9 months after the date on which GE completes any 64G or 64T treatment capability enhancements necessary to achieve a total PCB limit of 0.065 ug/l (as described in item 1 of this section), whichever is later, GE shall report the results of the optimization study to EPA and MassDEP. The report shall document the findings of the study and provide a recommended enhancement alternative(s) that will result in effluent concentration less than the MDL of 0.014 ug/l. The plan shall also include an implementation schedule for completing the enhancements and shall document the capital costs for, and the estimated reduction in PCBs that would be achieved by those enhancements. GE shall implement the recommended enhancements in accordance with the schedule proposed in the optimization study report, subject to EPA and MassDEP approval, for achieving the monthly average limit of 0.014 mg/l at outfall 005 under dry weather conditions as soon as possible in accordance with 40 C.F.R. § 122.47.

E. AMBIENT MONITORING PLAN

By one year from the effective date of the permit, the permittee shall develop and submit to EPA and MassDEP an ambient monitoring plan designed to show the effect of its wet weather discharges on water quality in the designated receiving waters. The plan shall include at least two rounds of wet weather ambient sampling per year and shall include sampling stations in the Housatonic River and Unkamet Brook upstream and downstream of its authorized discharges and from other instream sampling stations sufficient to determine the impact of each authorized discharge on instream water quality. The instream sampling shall coincide with wet weather sampling from the wet weather discharges authorized by this permit.

The plan shall be implemented in the second year of the permit and be conducted each year thereafter.

F. PERMIT REOPENER

The results of sampling required by the permit and the results of the ambient water quality monitoring program shall constitute new information within the meaning of 40 C.F.R. § 122.62(a)(2) and shall be assessed by EPA during the term of the permit. If the results demonstrate that the permit as written is insufficiently stringent to comply with applicable water quality standards for toxics, including PCBs, EPA shall re-open and modify the permit's terms to

impose additional BMPs and/or numeric effluent limitations sufficient to ensure compliance with such water quality standards.

G. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during each calendar month will be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the **28th day of the following month.**

Signed and dated originals of these, and all other reports required herein, will be submitted to the Director and the State at the following addresses:

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

The State Agency is:

Massachusetts Department of Environmental Protection
Western Regional Office - Bureau of Resource Protection
436 Dwight Street
Springfield, MA 01103

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit will also be submitted to the State at:

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

H. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) 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 MassDEP pursuant to M.G.L. Chap.21, §43.

Each Agency will have the independent right to enforce the terms and conditions of this Permit. Any modification, suspension or revocation of this Permit will be effective only with respect to the Agency taking such action, and will 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 will remain in full force and effect under Federal law as an 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 will remain in full force and effect under State law as a Permit issued by the Commonwealth of Massachusetts.

Attachment A
 Discharge Outfalls
 NPDES Permit No. MA0003891
 General Electric Company
 Pittsfield, MA

<u>Outfall: Description of Discharge:</u>	<u>Location (Latitude/Longitude):</u>	<u>Receiving Water:</u>
<p>005 Dry weather and wet weather discharge.</p> <p>Dry weather discharge includes treated groundwater, treated water from storm sewer cleaning (see BMP 1 in Attachment C), related water generated as part of consent decree response actions, and treated city water (used for fire protection testing) from 64G and treated groundwater infiltration, city water (used for fire protection testing) and unknown dry weather flow from City storm drain system from 64T.</p> <p>Wet weather discharge includes dry weather flow Components listed above, plus treated storm water runoff from 64T.</p>	42 26' 59" / 73 13' 53"	Housatonic River
<p>05A Wet weather discharge</p> <p>Overflow from outfall 005 drainage system. Treated discharge from OWS 64W of wet weather flows exceeding the capacity of 64T.</p>	42 26' 59" / 73 13' 53"	Housatonic River
<p>05B Wet weather discharge</p> <p>Overflow from outfall 005 drainage system. Untreated flows exceeding the capacity of OWS 64-W.</p>	42 26' 59" / 73 13' 53"	Housatonic River

Attachment A
 Discharge Outfalls
 NPDES Permit No. MA0003891
 General Electric Company
 Pittsfield, MA

<u>Outfall: Description of Discharge:</u>	<u>Location (Latitude/Longitude):</u>	<u>Receiving Water:</u>
006 Dry and wet weather discharge. Dry weather flow includes discharge from OWS 64-X of groundwater infiltration, city water (used for fire protection testing) and unknown dry weather flow from city storm drain. Wet weather flow consists of discharge from OWS 64-X including dry weather flow components listed above plus facility and city storm water runoff.	42 27' 04" / 73 13' 44"	Housatonic River
06A Wet weather discharge Overflow from 006 drainage area. Consists of untreated flows exceeding the capacity of OWS 64-X.	42 27' 04" / 73 13' 44"	Housatonic River
SRO5 Wet weather discharge Overflow from 006 drainage area. Consists of untreated Flows exceeding the capacity of OWS 64-X.	—	Housatonic River
009 Dry weather and wet weather discharge Dry weather flow consists of discharge from OWS 119, including groundwater infiltration, city water (used for fire protection testing) and untreated groundwater infiltration. Wet weather flow consists of dry weather flow components listed above plus storm water. Storm water is treated in OWS 119-W to its hydraulic capacity, flows exceeding the capacity of OWS 119-W are discharged untreated.	42 27' 42" / 73 12' 30"	Unkamet Brook

Attachment A
 Discharge Outfalls
 NPDES Permit No. MA0003891
 General Electric Company
 Pittsfield, MA

<u>Outfall: Description of Discharge:</u>	<u>Location (Latitude/Longitude):</u>	<u>Receiving Water:</u>
YD10 facility and city storm water	--	Unkamet Brook
YD11 storm water	--	Unkamet Brook
YD12 storm water	--	Unkamet Brook
YD6 storm water	--	Housatonic River
YD7 storm water	--	Housatonic River
YD8 storm water	--	Housatonic River
YD9 storm water	--	Housatonic River
YD13 storm water	--	Housatonic River
YD14 storm water	--	Housatonic River
YD16 storm water	--	Housatonic River

ATTACHMENT B

FRESHWATER CHRONIC TOXICITY TEST PROCEDURE AND PROTOCOL USEPA Region 1

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

III. SAMPLE COLLECTION AND USE

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
One Congress St., Suite 1100
Boston, MA 02114-2023

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
One Congress Street, Suite 1100
Boston, MA 02114-2023

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

V.1. Use of Reference Toxicity Testing

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

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

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

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

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

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥ 3 standard deviations for IC25s and LC50 values and \geq two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

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

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

VI. CHEMICAL ANALYSIS

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

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

<u>Parameter</u>	<u>Effluent</u>	<u>Receiving Water</u>	<u>ML (mg/l)</u>
Hardness ^{1, 4}	x	x	0.5
Total Residual Chlorine (TRC) ^{2, 3, 4}	x		0.02

Alkalinity ⁴	x	x	2.0
pH ⁴	x	x	--
Specific Conductance ⁴	x	x	--
Total Solids ⁶	x		--
Total Dissolved Solids ⁶	x		--
Ammonia ⁴	x	x	0.1
Total Organic Carbon ⁶	x	x	0.5
Total Metals ⁵			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02

Other as permit requires

Notes:

1. Hardness may be determined by:

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

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

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

3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing

4. Analysis is to be performed on samples and/or receiving water, as designated in the table above, from all three sampling events.

5. Analysis is to be performed on the initial sample(s) only unless the situation arises as stated in Section III, paragraph 4

6. Analysis to be performed on initial samples only

VII. TOXICITY TEST DATA ANALYSIS AND REVIEW

A. Test Review

1. Concentration / Response Relationship

A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported. The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-013.

Guidance for this review can be found at

<http://www.epa.gov/waterscience/WET/guide/index.html>. In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are

anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

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

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

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.
- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The following link: [Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program](#) can be used to locate the USEPA website containing this document. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater than the PMSD lower bound, then the treatment is considered statistically significant.
- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

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

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

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

2. *Pimephales promelas*

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

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

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

3. *Ceriodaphnia dubia*

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

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

- Summary of test sensitivity and concentration response evaluation

In addition to the summary sheets the report must include:

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

Attachment C
Best Management Practices Plan
NPDES Permit No. MA0003891
General Electric Company
Pittsfield, MA

BEST MANAGEMENT PRACTICES PLAN¹

A. DESCRIPTION OF BMP ACTIVITIES

1. Cleaning and Inspection of Existing Storm Sewer Components²

BMP 1.A - Debris Removal from Manholes and Catch Basins

- Initial inspection and removal of accumulated debris from all storm sewer manholes (MHs) and catch basins (CBs) in Drainage Basins 005, 006, and 007 (total of approx. 211 MHs and 121 Cbs).
- Quarterly inspections for one year of 10 to 15 “select” MHs and CBs in Drainage Basins 005 and 006. Removal of accumulated debris as needed (i.e., when observed debris thickness exceeds approximately 6 inches and prior to the catch basin exceeding 50% of the sediment storage capacity).³
- Annual inspection of select MHs and CBs in Drainage Basins 005 and 006 (debris removal as needed).
- Provide summary of completed inspection/cleaning activities in annual BMP report.

BMP 1.B - Debris Removal from Oil/Water Separators

- Removal of accumulated debris from OWSs 64W, 64X, 64Z, and 119W.
- Performance of annual inspection (including debris thickness measurements) of each active OWS.
- Removal of accumulated debris from OWSs every 2 years, or sooner if average thickness of debris observed during annual inspections exceeds 6 inches.
- Provide summary of completed inspection/cleaning activities in annual BMP report.

BMP 1.C - Pipeline Cleaning and Inspection

- For sections of piping within the 005/006 drainage basin where groundwater infiltration/inflow (I/I) is identified through the observation of dry weather flows attributable to I/I (if any), collect representative water samples for volatile organic

compound (VOC) analysis prior to any pipe cleaning activities. Following the identification of dry weather groundwater I/I flows, if any, and the subsequent cleaning or potential repair/rehabilitation of the subject piping, collect another round of water samples for VOC analysis for comparative purposes.

- Hydraulic pressure washing of the interior surfaces of approximately 6,500 linear feet (LF) of existing storm sewer piping to remove accumulated debris (Figure 1).⁴
- Video inspection (following pipe washing) of approximately 3,200 LF of existing storm sewer piping to assess pipe integrity (Figure 1).⁵
- Submit a report summarizing the results of the cleaning and inspection activities, including a plan and schedule for construction necessary to correct pipeline defects.

2. Enhancements to Oil/Water Separators

BMP 2.A - Short-Term OWS Enhancements

- Modify each OWS discharge from an underflow to overflow arrangement.
- Make reasonable best efforts to increase the water storage volume and solids settling capabilities within each OWS through changes to the physical configuration (e.g., weir plates, baffles, etc.).
- Make reasonable best efforts to install continuous flow monitoring equipment at the OWS discharges (note – OWS 64W already has provisions for continuous discharge flow monitoring).
- Following completion of short-term enhancements described above, conduct sampling and analysis to assess “baseline” effectiveness of each OWS. For (3) different events (selected to represent various flow conditions within each OWS), collect influent and effluent samples from each OWS. Analyze samples for total PCBs (using modified Method 8082) and total suspended solids (TSS). Record OWS flow information and other pertinent operating conditions.

BMP 2.B - Longer-Term OWS-Related Activities

- Conduct a pilot study at OWS 64Z to evaluate potential for increased solids removal. Potential activities include addition of pre-treatment solids removal equipment, installation of additional structures within OWS to promote solids settling, etc.
- To assess potential effectiveness of above activities, conduct sampling and analysis of OWS 64Z flow during (3) different events (to represent various flow conditions). Collect influent and effluent samples with analysis for total PCBs (using modified

Method 8082) and TSS. Samples taken for the study shall be 24 hour flow weighted composites. Record OWS flow information and other pertinent operating conditions.

- Make reasonable best efforts implement permanent improvements to solids settling capabilities at OWS 64Z. Also, evaluate potential improvements to OWSs 64W and 64X.
- Identify and evaluate potential measures to optimize stormwater management within Drainage Basins 005 and 006 through physical modifications related to the East Street Diversion Structure and existing OWS 64Z discharge/bypass piping network.
- Install continuous flow measurement at any OWS where not installed pursuant to BMP 2.A within 18 months of the effective date of the permit.

3. Physical Modifications to Drainage Basins

BMP 3.A - Modify 60s Complex to Reduce Storm Water Runoff Bypasses

- Reduce storm water discharges and minimize bypasses of the oil/water separators by implementing measures that reduce the areas of impervious cover at the site. Such measures shall include, where practicable and appropriate, adding soil/vegetation cover over impervious areas such as building floor slabs, paved areas, etc.; designing new surface cover in a manner that facilitates infiltration, including surface grading and contouring; and intentionally compromising the integrity of building floor slabs (but *not* paved areas).
- Make reasonable best efforts to modify, abandon, or replace existing storm sewer piping (including existing Sewer Relief Overflows) to reflect new drainage area conditions following building demolition and other activities in the area.

B. ANTICIPATED IMPLEMENTATION SCHEDULE

- *Certain BMP activities will be completed within an approximate 4- to 6-month timeframe, including initial cleaning and assessment of manholes, catch basins, piping, and OWSs (i.e., BMPs 1.A, 1.B, 1.C); short-term physical modifications to OWSs (i.e., BMP 2A); and physical piping changes within Drainage Basin 004 (i.e., BMP 3A). The specific schedule for these activities is dependent on weather and flow conditions. Pipe defects revealed in the inspection and cleaning activities will generally be repaired within 120 days of discovery.*
- The pilot study of OWS 64Z (part of BMP 2.B) will be performed following the completion of initial cleaning and assessment activities, and implementation of short-term enhancements. Once initiated, a minimum 6 to 9 month duration is anticipated, to ensure an adequate period of non-winter conditions.
- The specific scope and timing/schedule for the performance of remaining BMPs (i.e.,

remainder of BMP 2.B, and BMP 3.B) is uncertain and dependent on the results of the other BMPs and/or completion of various CD- and Brownfields-related activities, as well as EPA's use of certain areas within Drainage Basin 005. A preliminary timeframe of one to three years is estimated.

- GE will prepare an annual BMP summary report for submittal to the Agencies. That report will describe all completed activities, and provide relevant information and data as appropriate. Other information (e.g., proposed additional BMPs, schedule updates, etc.) will also be provided in the annual summary. This summary is due on March 1 of each year following the effective date of the permit (see Part I.C.4. of permit)

Notes

1. In addition to the activities identified in this table, GE will continue to perform BMPs within the GE facility as identified in its *Stormwater Pollution Prevention Plan*.
2. Solid debris may be placed at GE's On-Plant Consolidation Area(s) subject to space limitations, or must be disposed of properly off-site.; water will be treated at GE's 64G Groundwater Treatment Facility (64G GWTF),
3. "Select" MHs and CBs subject to future inspections to be determined based on initial inspection and cleaning activities, as well as location within overall storm sewer network. Scope of future inspections may vary; for example, in response to results of annual inspections and/or ongoing CD and Brownfields activities.
4. Pipe sections subject to cleaning include piping that: was historically cleaned and/or sliplined; is located in potential PCB source areas (e.g., subsurface areas with non-aqueous phase liquids, elevated PCB concentrations in soil, etc.); is located in close proximity to existing discharge outfalls; or likely to remain active following CD and Brownfields activities. In addition, based on the results of the MH and CB cleaning and inspection activities (BMP 1.A), additional piping may be identified for hydraulic cleaning.
5. Initial pipe sections subject to video inspection, as shown on Figure 1, include piping that: was previously sliplined; is located in potential PCB source areas and the water table; and is likely to remain active following CD and Brownfields activities.

ATTACHMENT D

PCB Method Specification

Justification and Approval for Using SW-846 Method 8082 in Place of CWA Method 608

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, requires that specific analytical methods be used to generate reports required for each discharge regulated under the National Pollutant Discharge Elimination System (NPDES). These methods are listed in 40 CFR Part 136.3. Paragraph (a) provides that under certain circumstances other "more advantageous" test procedures may be used when such procedures have been approved by the Regional Administrator, providing the Director of the State in which the discharge is located does not object. 40 CFR 136.3(c) authorizes the Regional Administrator to approve the use of methods of analysis for additional pollutants or parameters. Under this provision, the Regional Administrator has the authority to require the use of alternate procedures when an approved method is unable to achieve the practical quantitation limit (PQL) required by the permit and an alternate method is able to achieve it.

PCB methods are listed in Table IC, "List of Approved Test Procedures for Non-Pesticide Organic Compounds". Method 608, found in 40 CFR 136 Appendix A, is a gas chromatographic (GC) procedure which utilizes electron capture detection (ECD). It has a practical quantitation limit (PQL) of $0.5\mu\text{g/L}$. It is a prescriptive method and does not permit modifications to achieve lower PQLs, such as the use of alternate sample extract clean-up procedures to improve GC/ECD chromatography and peak resolution in the presence of interferences. It was used for many years as the only method for the analysis of PCBs in wastewater. However, many contract laboratories no longer use it because improved methods are available. Method 608 was used as a model for methods 8080 and 8081, the original RCRA SW-846 methods for PCBs and pesticides.

Method 8082, "Polychlorinated Biphenyls by Gas chromatography," is found in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846. SW-846 methods are performance based methods that allow method modifications to improve chromatography and sensitivity, including the extraction of larger sample volumes, the concentration of sample extracts to smaller volumes, and the injection of larger volumes of sample extracts.. Such modifications permit much lower PQLs to be achieved. Method 8082 can be modified to meet a $0.065\mu\text{g/L}$ total PCB reporting limit that will support the GE Housatonic River NPDES permit. It may also be modified to allow identification and quantitation of individual PCB congeners at much lower detection limits (e.g., $0.014\mu\text{g/L}$) when required.

Because method 8082 is performance based, each laboratory is required to demonstrate that any modifications to the published method are substantiated by acceptable, documented quality control criteria (e.g., MDL determinations), that method performance is controlled and consistent from sample to sample, lot to lot, and day to day operations and that the modifications serve the requirements of the permit.

EPA has reviewed various standards operating procedures (SOPs) that General Electric - Pittsfield submitted for the analysis of PCBs, including SOPs received on May 27, 2008:

SGS Environmental Services SOP for the Analysis of Low level PCBs by modified Method 8082, ID # 8082, Date 02/01/08

SGS Environmental Services SOP for Modified Method 3520 for low level PCB Preparation in Water, ID # 3520 Water Prep., Date 02/01/08

Note: method 3520 is a sample preparation procedure used to prepare samples for analysis by method 8082.

With the receipt of certain supplemental information from General Electric, EPA has received satisfactory answers to all its review questions. GE's use of the submitted SGS SOPs, including the two mentioned above, for the analysis of PCB Aroclors is approved.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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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.

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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.

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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.

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- (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

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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

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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

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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.

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- 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.

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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.

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- (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

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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

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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).

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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.

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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.

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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.

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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.

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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,

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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.

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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.

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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 of 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.

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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.

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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.)

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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

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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.