

## NPDES PERMIT MODIFICATION

issued to

Styron LLC  
1761 Route 12  
Gales Ferry, Connecticut 06335

**Location Address:**

1761 Route 12  
Gales Ferry, Connecticut 06335

**Facility ID:** 072-005

**Permit ID:** CT0003131

**Receiving Waterbodies:** Thames River  
Tom Allyn Pond

**Permit Expires:** July 15, 2014

**Water Body Segment ID:** CT-E1-015-SB (Thames River, Middle)

### SECTION 1: GENERAL PROVISIONS

- (A) This permit modification is issued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes (“CGS”), and Regulations of Connecticut State Agencies (“RCSA”) adopted thereunder, as amended, and section 402(b) of the Clean Water Act, as amended, 33 USC 1251, *et. seq.*, and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer an NPDES permit program.
- (B) Styron LLC (“Permittee”) shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsections (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (l)(2) of section 22a-430-3.

Section 22a-430-3 General Conditions

- (a) Definitions
- (b) General
- (c) Inspection and Entry
- (d) Effect of a Permit
- (e) Duty
- (f) Proper Operation and Maintenance
- (g) Sludge Disposal
- (h) Duty to Mitigate
- (i) Facility Modifications; Notification
- (j) Monitoring, Records and Reporting Requirements
- (k) Bypass
- (l) Conditions Applicable to POTWs
- (m) Effluent Limitation Violations (Upsets)
- (n) Enforcement
- (o) Resource Conservation
- (p) Spill Prevention and Control
- (q) Instrumentation, Alarms, Flow Recorders
- (r) Equalization

Section 22a-430-4 Procedures and Criteria

- (a) Duty to Apply
  - (b) Duty to Reapply
  - (c) Application Requirements
  - (d) Preliminary Review
  - (e) Tentative Determination
  - (f) Draft Permits, Fact Sheets
  - (g) Public Notice, Notice of Hearing
  - (h) Public Comments
  - (i) Final Determination
  - (j) Public Hearings
  - (k) Submission of Plans and Specifications. Approval.
  - (l) Establishing Effluent Limitations and Conditions
  - (m) Case by Case Determinations
  - (n) Permit issuance or renewal
  - (o) Permit Transfer
  - (p) Permit revocation, denial or modification
  - (q) Variances
  - (r) Secondary Treatment Requirements
  - (s) Treatment Requirements for Metals and Cyanide
  - (t) Discharges to POTWs - Prohibitions
- (C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the Permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.
- (D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.
- (E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Environmental Protection (“Commissioner”). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.
- (F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the Permittee pursuant to this permit will result in compliance or prevent or abate pollution.
- (G) Nothing in this permit shall relieve the Permittee of other obligations under applicable federal, state and local law.
- (H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the Regulations of Connecticut State Agencies.
- (I) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (i.e., section 22a-92 of the CGS).
- (J) In addition to Styron LLC, two other entities operate at the site: Americas Styrenics LLC (a joint venture between Styron LLC and Chevron Phillips Chemical Company LP) and The Dow Chemical Company (a separate and distinct entity). Both of these entities initiate wastewater discharges that are authorized by this permit. The Permittee acknowledges and agrees that it shall not use as a defense to any violation of this Permit that a discharge from either Americas Styrenics LLC or The Dow Chemical Company caused such violation.

## SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and sections 22a-430-3(a) and 22a-430-6 of the RCSA, except for “No Observable Acute Effect Level” (NOAEL) which is redefined below.

(B) In addition to the above, the following definitions shall apply to this permit:

“---” in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR

“40 CFR” means Title 40 of the Code of Federal Regulations.

“Annual” in the context of any sampling frequency found in Section 5, shall mean the sample must be collected in the month of June.

“Average Monthly Limit” means the maximum allowable “Average Monthly Concentration” as defined in section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g., mg/l); otherwise, it means “Average Monthly Discharge Limitation” as defined in section 22a-430-3(a) of the RCSA.

“Chronic-No Observed Effect Concentration (C-NOEC) means the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, it means the lowest concentration where there is no observable effect.

“Critical Test Concentration” (CTC) means the specified effluent dilution at which the Permittee is to conduct a single-concentration Aquatic Toxicity test.

“Daily Concentration” means the concentration of a substance as measured in a daily composite sample, or, the arithmetic average of all grab sample results defining a grab sample average.

“Daily Quantity” means the quantity of waste discharged during an operating day.

“g/d” means grams per day

“GSA” as a sample type shall mean “Grab Sample Average” as defined in section 22a-430-3(a) of the RCSA.

“EC” means “Effect Concentration”.

“EC<sub>50</sub>” means the concentration of effluent that would cause an observable adverse effect (e.g., death, immobilization or serious incapacitation) in 50% of the test organisms.

“IC” means “Inhibition Concentration”.

“IC<sub>25</sub>” means the concentration of effluent which has an inhibitory effect on 25% of the test organisms for the monitored effect, as compared to the control (expressed as % effluent).

“Instantaneous Limit” means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

“Instream Waste Concentration” (IWC) means the concentration of a discharge in the receiving water after mixing has occurred.

“LC” means Lethal Concentration

“LC<sub>50</sub>” means the concentration of effluent which causes mortality to 50% of the organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than 50% mortality.

“Maximum Daily Limit”, means the maximum allowable “Daily Concentration” (defined above) when expressed as a concentration (e.g., mg/l); otherwise, it means the maximum allowable “Daily Quantity” as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity, it means “Maximum Daily Flow” as defined in section 22a-430-3(a) of the RCSA.

“No Observable Acute Effect Level” (NOAEL) means any concentration equal to or less than the critical test concentration in a single concentration (pass/fail) toxicity test conducted pursuant to section 22a-430-3(j)(7)(A)(i) of RCSA demonstrating 90% or greater survival of test organisms at the CTC.

“Quarterly”, in the context of a sampling frequency, means sampling is required in the months of March, June, September, and December.

“Range During Month” (“RDM”), as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

“Range During Sampling” (“RDS”), as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of: 1) a Composite Sample, or, 2) a Grab Sample Average. For those Permittees with continuous monitoring and recording pH meters, Range During Sampling means the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

“Semi-Annual” in the context of a sampling frequency, means the sample must be collected in the months of June and December.

“Twice/month” when used as a sample frequency shall mean two samples per calendar month collected no less than 12 days apart.

### **SECTION 3: COMMISSIONER'S DECISION**

- (A) The Commissioner, has issued a final determination and found that: with respect to DSN 001, modification of the existing system to treat the discharge will protect the waters of the state from pollution; and with respect to DSN 002, DSN 003, DSN 004, DSN 005, DSN 007, and DSN G001 such discharges will not cause pollution of any of the waters of the state. The Commissioner's decision is based on Application No. 201005696 for permit reissuance received on September 16, 2010 and the administrative record established in the processing of that application.
- (B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, this permit.
- (C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or CGS or regulations adopted thereunder which are then applicable.

### **SECTION 4: GENERAL EFFLUENT LIMITATIONS**

- (A) No discharge shall contain, or cause in the receiving stream, a visible oil sheen or floating solids; or, cause visible discoloration or foaming in the receiving stream.

- (B) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.
- (C) For discharges to freshwater, the temperature of any discharge shall not increase the temperature of the receiving stream above 85 °F, or, in any case, raise the normal temperature of the receiving stream more than 4 °F. For discharges to coastal and marine waters, The temperature of any discharge shall not increase the temperature of the receiving stream above 83 °F, or, in any case, raise the temperature of the receiving stream by more than 4 °F. The incremental temperature increase in coastal and marine waters is limited to 1.5 °F during the period including July, August and September.

## **SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- (A) The discharges are restricted by, and shall be monitored in accordance with, the tables below. In addition, the discharges shall not exceed and shall otherwise conform to the specific terms and conditions listed below:
  - (1) All samples shall be comprised of only the wastewater described in this table. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.
  - (2) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples which may be collected and analyzed by the Department of Environmental Protection personnel, the Permittee, or other parties.
  - (3) The limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.
  - (4) The monitoring requirements begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st day of the following month.

**Table A**

**Discharge Serial Number:** 001-1 **Monitoring Location:** 1

**Wastewater Description:** Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage

**Monitoring Location Description:** Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve

**Discharge is to:** Thames River **Dilution:** 20:1 **Instream waste concentration:** 5%

PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported		
Acute Aquatic Toxicity, <i>Mysidopsis bahia</i>	%	NA	LC <sub>50</sub> ≥100%	Quarterly	Daily Composite	LC <sub>50</sub> >33.3%	NR	Grab		
Acute Aquatic Toxicity, <i>Menidia beryllina</i>	%	NA	LC <sub>50</sub> ≥100%	Quarterly	Daily Composite	LC <sub>50</sub> >33.3%	NR	Grab		
Chronic Aquatic Toxicity, <i>Mysidopsis bahia</i>	%	NA	C-NOEC>5%	Quarterly	Daily Composite	NA	NR	NA		
Chronic Aquatic Toxicity, <i>Menidia beryllina</i>	%	NA	C-NOEC>5%	Quarterly	Daily Composite	NA	NR	NA		
Acenaphthene	µg/l	6.1	8.9	Annually	Daily Composite	13.3	NR	NA	5	
Acenaphthene	g/d	0.6	0.9	Annually	Daily Composite	NA	NR	NA		
Acenaphthylene	µg/l	12	33	Annually	Daily Composite	50	NR	NA	10	
Acenaphthylene	g/d	1.2	3.2	Annually	Daily Composite	NA	NR	NA		
Acrylonitrile	µg/l	0.66 <sup>4</sup>	1.32 <sup>4</sup>	Twice/month	Grab	NA	NR	NA	20	✓
Acrylonitrile	g/d	0.06	0.13	Twice/month	Grab	NA	NR	NA		
Anthracene	µg/l	4.92 <sup>4</sup>	7.18	Annually	Daily Composite	10.8	NR	NA	5	
Anthracene	g/d	0.5	0.7	Annually	Daily Composite	NA	NR	NA		
Benzene	µg/l	21	76	Quarterly	Grab	NA	NR	NA	5	
Benzene	g/d	2.0	7.5	Quarterly	Grab	NA	NR	NA		
Benzo(a)anthracene	µg/l	0.49 <sup>4</sup>	0.71 <sup>4</sup>	Annually	Daily Composite	1.07 <sup>4</sup>	NR	NA	10	
Benzo(a)anthracene	g/d	0.05	0.07	Annually	Daily Composite	NA	NR	NA		
3,4-Benzofluoranthene	µg/l	0.49 <sup>4</sup>	0.71 <sup>4</sup>	Annually	Daily Composite	1.07 <sup>4</sup>	NR	NA	5	
3,4-Benzofluoranthene	g/d	0.05	0.07	Annually	Daily Composite	NA	NR	NA		
Benzo(k)fluoranthene	µg/l	0.49 <sup>4</sup>	0.71 <sup>4</sup>	Annually	Daily Composite	1.07 <sup>4</sup>	NR	NA	10	
Benzo(k)fluoranthene	g/d	0.05	0.07	Annually	Daily Composite	NA	NR	NA		
Benzo(a)pyrene	µg/l	0.049 <sup>4</sup>	0.071 <sup>4</sup>	Annually	Daily Composite	0.107 <sup>4</sup>	NR	NA	10	
Benzo(a)pyrene	g/d	0.005	0.007	Annually	Daily Composite	NA	NR	NA		
Bis(2-ethylhexyl)phthalate	µg/l	5.9	8.6	Quarterly	Daily Composite	12.9	NR	NA	5	✓
Bis(2-ethylhexyl) phthalate	g/d	0.6	0.8	Quarterly	Daily Composite	NA	NR	NA		
Carbon tetrachloride	µg/l	4.4 <sup>4</sup>	6.4 <sup>4</sup>	Quarterly	Grab	NA	NR	NA	5	
Carbon tetrachloride	g/d	0.43	0.63	Quarterly	Grab	NA	NR	NA		
Chlorobenzene	µg/l	8	16	Annually	Grab	NA	NR	NA	5	
Chlorobenzene	g/d	0.8	1.5	Annually	Grab	NA	NR	NA		
Chloroethane	µg/l	58	151	Annually	Grab	NA	NR	NA	5	
Chloroethane	g/d	5.7	14.7	Annually	Grab	NA	NR	NA		

**Table A**

**Discharge Serial Number:** 001-1 **Monitoring Location:** 1

**Wastewater Description:** Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage

**Monitoring Location Description:** Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve

**Discharge is to:** Thames River **Dilution:** 20:1 **Instream waste concentration:** 5%

PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported		
Chloroform	µg/l	12	26	Annually	Grab	NA	NR	NA	5	
Chloroform	g/d	1.2	2.5	Annually	Grab	NA	NR	NA		
2-Chlorophenol	µg/l	17	55	Annually	Daily Composite	83	NR	NA	10	
2-Chlorophenol	g/d	1.7	5.4	Annually	Daily Composite	NA	NR	NA		
Chrysene	µg/l	4.92 <sup>4</sup>	7.18	Annually	Daily Composite	10.8	NR	NA	5	
Chrysene	g/d	0.5	0.7	Annually	Daily Composite	NA	NR	NA		
Di-n-butyl phthalate	µg/l	15	32	Annually	Daily Composite	48	NR	NA	10	
Di-n-butyl phthalate	g/d	1.5	3.1	Annually	Daily Composite	NA	NR	NA		
1,2-Dichlorobenzene	µg/l	43	92	Annually	Grab	NA	NR	NA	5	
1,2-Dichlorobenzene	g/d	4.2	8.9	Annually	Grab	NA	NR	NA		
1,3-Dichlorobenzene	µg/l	17	25	Annually	Grab	NA	NR	NA	5	
1,3-Dichlorobenzene	g/d	1.7	2.4	Annually	Grab	NA	NR	NA		
1,4-Dichlorobenzene	µg/l	8 <sup>4</sup>	16	Annually	Grab	NA	NR	NA	5	
1,4-Dichlorobenzene	g/d	0.8	1.5	Annually	Grab	NA	NR	NA		
1,1-Dichloroethane	µg/l	12	33	Annually	Grab	NA	NR	NA	5	
1,1-Dichloroethane	g/d	1.2	3.2	Annually	Grab	NA	NR	NA		
1,2-Dichloroethane	µg/l	38	119	Annually	Grab	NA	NR	NA	5	
1,2-Dichloroethane	g/d	3.7	11.6	Annually	Grab	NA	NR	NA		
1,1-Dichloroethylene	µg/l	3.2 <sup>4</sup>	4.7 <sup>4</sup>	Annually	Grab	NA	NR	NA	5	
1,1-Dichloroethylene	g/d	0.3	0.5	Annually	Grab	NA	NR	NA		
1,2-trans-Dichloroethylene	µg/l	12	30	Annually	Grab	NA	NR	NA	5	
1,2-trans-Dichloroethylene	g/d	1.2	3.0	Annually	Grab	NA	NR	NA		
2,4-Dichlorophenol	µg/l	22	63	Annually	Daily Composite	94	NR	NA	10	
2,4-Dichlorophenol	g/d	2.1	6.1	Annually	Daily Composite	NA	NR	NA		
1,2-Dichloropropane	µg/l	86	129	Annually	Grab	NA	NR	NA	10	
1,2-Dichloropropane	g/d	8.4	12.6	Annually	Grab	NA	NR	NA		
1,3-Dichloropropylene	µg/l	16	25	Annually	Grab	NA	NR	NA	5	
1,3-Dichloropropylene	g/d	1.6	2.4	Annually	Grab	NA	NR	NA		
Diethyl phthalate	µg/l	46	114	Annually	Daily Composite	171	NR	NA		
Diethyl phthalate	g/d	4.4	11.1	Annually	Daily Composite	NA	NR	NA		

**Table A**

**Discharge Serial Number:** 001-1 | **Monitoring Location:** 1

**Wastewater Description:** Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage

**Monitoring Location Description:** Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve

**Discharge is to:** Thames River | **Dilution:** 20:1 | **Instream waste concentration:** 5%

PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported		
2,4-Dimethylphenol	µg/l	10	20	Annually	Daily Composite	30	NR	NA	10	
2,4-Dimethylphenol	g/d	1.0	2.0	Annually	Daily Composite	NA	NR	NA		
Dimethyl phthalate	µg/l	11	26	Annually	Daily Composite	40	NR	NA	10	
Dimethyl phthalate	g/d	1.0	2.6	Annually	Daily Composite	NA	NR	NA		
4,6-Dinitro-o-cresol	µg/l	44 <sup>4</sup>	156	Annually	Daily Composite	234	NR	NA	50	
4,6-Dinitro-o-cresol	g/d	4.3	15.2	Annually	Daily Composite	NA	NR	NA		
2,4-Dinitrophenol	µg/l	40 <sup>4</sup>	69	Annually	Daily Composite	104	NR	NA	50	
2,4-Dinitrophenol	g/d	3.9	6.7	Annually	Daily Composite	NA	NR	NA		
2,4-Dinitrotoluene	µg/l	9.1 <sup>4</sup>	13.3	Annually	Daily Composite	19.9	NR	NA	10	
2,4-Dinitrotoluene	g/d	0.9	1.3	Annually	Daily Composite	NA	NR	NA		
2,6-Dinitrotoluene	µg/l	143	360	Annually	Daily Composite	540	NR	NA	10	
2,6-Dinitrotoluene	g/d	14.0	35.2	Annually	Daily Composite	NA	NR	NA		
Ethylbenzene	µg/l	18	61	Twice/month	Grab	NA	NR	NA	5	✓
Ethylbenzene	g/d	1.8	5.9	Twice/month	Grab	NA	NR	NA		
Fluoranthene	µg/l	1.28 <sup>4</sup>	1.87 <sup>4</sup>	Annually	Daily Composite	2.80 <sup>4</sup>	NR	NA	10	
Fluoranthene	g/d	0.1	0.2	Annually	Daily Composite	NA	NR	NA		
Fluorene	µg/l	12	33	Annually	Daily Composite	50	NR	NA	10	
Fluorene	g/d	1.2	3.2	Annually	Daily Composite	NA	NR	NA		
Hexachlorobenzene	µg/l	0.00077 <sup>4</sup>	0.00112 <sup>4</sup>	Annually	Daily Composite	0.0017 <sup>4</sup>	NR	NA	5	
Hexachlorobenzene	g/d	0.00008	0.00011	Annually	Daily Composite	NA	NR	NA		
Hexachlorobutadiene	µg/l	11	28	Annually	Daily Composite	41	NR	NA	10	
Hexachlorobutadiene	g/d	1.1	2.7	Annually	Daily Composite	NA	NR	NA		
Hexachloroethane	µg/l	8.9	13.0	Annually	Daily Composite	19.5	NR	NA	5	
Hexachloroethane	g/d	0.9	1.3	Annually	Daily Composite	NA	NR	NA		
Methyl chloride	µg/l	48 <sup>4</sup>	107	Annually	Grab	NA	NR	NA	50	
Methyl chloride	g/d	4.7	10.4	Annually	Grab	NA	NR	NA		
Methylene chloride	µg/l	22	50	Quarterly	Grab	NA	NR	NA	5	
Methylene chloride	g/d	2.2	4.9	Quarterly	Grab	NA	NR	NA		
Naphthalene	µg/l	12	33	Annually	Daily Composite	50	NR	NA	10	
Naphthalene	g/d	1.2	3.2	Annually	Daily Composite	NA	NR	NA		



**Table A**

Discharge Serial Number: 001-1						Monitoring Location: 1				
<b>Wastewater Description:</b> Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage										
<b>Monitoring Location Description:</b> Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve										
Discharge is to: Thames River			Dilution: 20:1			Instream waste concentration: 5%				
PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported		
Nitrobenzene	µg/l	15	38	Annually	Daily Composite	57	NR	NA	10	
Nitrobenzene	g/d	1.5	3.7	Annually	Daily Composite	NA	NR	NA		
2-Nitrophenol	µg/l	23	39	Annually	Daily Composite	58	NR	NA	20	
2-Nitrophenol	g/d	2.2	3.8	Annually	Daily Composite	NA	NR	NA		
4-Nitrophenol	µg/l	40 <sup>4</sup>	70	Annually	Daily Composite	105	NR	NA	50	
4-Nitrophenol	g/d	4.0	6.8	Annually	Daily Composite	NA	NR	NA		
Phenanthrene	µg/l	12	33	Annually	Daily Composite	50	NR	NA	10	
Phenanthrene	g/d	1.2	3.2	Annually	Daily Composite	NA	NR	NA		
Phenol	µg/l	8 <sup>4</sup>	15	Annually	Daily Composite	22	NR	NA	10	
Phenol	g/d	0.8	1.4	Annually	Daily Composite	NA	NR	NA		
Pyrene	µg/l	14	38	Annually	Daily Composite	56	NR	NA	5	
Pyrene	g/d	1.4	3.7	Annually	Daily Composite	NA	NR	NA		
Tetrachloroethylene	µg/l	12	31	Annually	Grab	NA	NR	NA	5	
Tetrachloroethylene	g/d	1.2	3.1	Annually	Grab	NA	NR	NA		
Toluene	µg/l	15	45	Quarterly	Grab	NA	NR	NA	5	
Toluene	g/d	1.4	4.4	Quarterly	Grab	NA	NR	NA		
Total Chromium	µg/l	624	1557	Quarterly	Daily Composite	2335	NR	NA	5	✓
Total Chromium	g/d	60.9	152.0	Quarterly	Daily Composite	NA	NR	NA		
Total Copper	µg/l	66	96	Quarterly	Daily Composite	144	NR	NA	5	✓
Total Copper	g/d	6.4	9.4	Quarterly	Daily Composite	NA	NR	NA		
Total Cyanide	µg/l	14	20	Annually	Grab	NA	NR	NA	10	
Total Cyanide	g/d	1.3	2.0	Annually	Grab	NA	NR	NA		
Total Lead	µg/l	180	266	Quarterly	Daily Composite	399.2	NR	NA	5	✓
Total Lead	g/d	17.6	26	Quarterly	Daily Composite	NA	NR	NA		
Total Nickel	µg/l	185	269	Quarterly	Daily Composite	404	NR	NA	5	✓
Total Nickel	g/d	18	26	Quarterly	Daily Composite	NA	NR	NA		
Total Zinc	µg/l	562	1397	Twice/month	Daily Composite	2095	NR	NA	10	✓
Total Zinc	g/d	54.9	136.4	Twice/month	Daily Composite	NA	NR	NA		
1,2,4-Trichlorobenzene	µg/l	38	79	Annually	Daily Composite	118	NR	NA	10	
1,2,4-Trichlorobenzene	g/d	3.7	7.7	Annually	Daily Composite	NA	NR	NA		

**Table A**

**Discharge Serial Number:** 001-1 | **Monitoring Location:** 1

**Wastewater Description:** Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage

**Monitoring Location Description:** Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve

**Discharge is to:** Thames River | **Dilution:** 20:1 | **Instream waste concentration:** 5%

PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported		
1,1,1-Trichloroethane	µg/l	12	30	Annually	Grab	NA	NR	NA	5	
1,1,1-Trichloroethane	g/d	1.2	3.0	Annually	Grab	NA	NR	NA		
1,1,2-Trichloroethane	µg/l	12	30	Annually	Grab	NA	NR	NA	5	
1,1,2-Trichloroethane	g/d	1.2	3.0	Annually	Grab	NA	NR	NA		
Trichloroethylene	µg/l	12	30	Annually	Grab	NA	NR	NA	5	
Trichloroethylene	g/d	1.2	3.0	Annually	Grab	NA	NR	NA		
Vinyl chloride	µg/l	58	151	Annually	Grab	NA	NR	NA	5	
Vinyl chloride	g/d	5.7	14.7	Annually	Grab	NA	NR	NA		
Ammonia (as Nitrogen)	mg/l	NA	---	Quarterly	Daily Composite	---	NR	NA		✓
Biochemical Oxygen Demand (5-day)	mg/l	16	44	Twice/month	Daily Composite	66	NR	NA		✓
Biochemical Oxygen Demand (5-day)	g/d	1,782	4,269	Twice/month	Daily Composite	NA	NR	NA		
Bromoform	mg/l	---	---	Quarterly	Grab	---	NR	NA		
1,3-Butadiene	µg/l	---	---	Twice/month	Grab	---	NR	NA		✓
Chemical Oxygen Demand	mg/l	NA	----	Twice/month	Daily Composite	---	NR	NA		
Chlorine, Total Residual	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	0.020	✓
Fecal Coliform	cfus/ 100 ml	NA	NA	NR	NA	See note 5	Monthly	Grab		
Flow rate <sup>1</sup> (Average Daily)	gpd	25,775	NA	Continuous/ Monthly	Daily Flow	NA	NR	NA		
Flow, Maximum during 24 hour period <sup>1</sup>	gpd	NA	39,200	Continuous/ Monthly	Daily Flow	NA	NR	NA		
Flow (Total, Day of Sampling)	gpd	NA	39,200	Twice/ Monthly	Daily Flow	NA	NR	NA		
Iron, Total	mg/L	---	---	Monthly	Daily Composite	NA	NR	NA		
Oil & Grease, Total	mg/l	10	---	Twice/month	Grab Sample Average	20	NR	NA		✓
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-9.0	Twice/Month	RDS		✓
pH, Maximum	S.U.	NA	NA	NR	NA	9.0	Continuous/ Monthly	Continuous		
pH, Minimum	S.U.	NA	NA	NR	NA	6.0	Continuous/ Monthly	Continuous		

**Table A**

**Discharge Serial Number:** 001-1 **Monitoring Location:** 1

**Wastewater Description:** Latex process wastewater, Latex equipment cleaning wastewater, Latex railcar washwater, Latex area cooling tower blowdown, Latex area laboratory wastewater, Latex containment area stormwater, Latex area fire suppression test water, Latex emergency non-contact cooling water, Polystyrene pattie cooling wastewater, Polystyrene equipment/pad cleaning wastewater, Polystyrene waterbath, Polystyrene equipment cooling wastewater, Polystyrene railcar washwater, Styrofoam fines dewatering wastewater, Styrofoam air compressor blowdown, Site-wide safety showers/eyewashes, Site-wide potentially contaminated stormwater, Site-wide potentially contaminated fire suppression test water, Air dryer condensate wastewater, Boiler blowdown and cleaning wastewater, Boiler make-up treatment system wastewaters, and Domestic sewage

**Monitoring Location Description:** Filterhouse Sample Port and Flow Meter prior to the Diverter Control Valve

**Discharge is to:** Thames River **Dilution:** 20:1 **Instream waste concentration:** 5%

PARAMETER	UNITS	Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
						Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported		
Phosphorus, Total	mg/l	---	---	Monthly	Daily Composite	NA	NR	NA		
Selenium, Total	mg/l	---	---	Quarterly	Daily Composite	---	NR	NA		
Styrene	µg/l	388	779	Twice/Month	Grab	---	NR	NA	5	✓
Surfactants (MBAS)	mg/l	---	---	Quarterly	Daily Composite	---	NR	NA		✓
Temperature	°F	NA	NA	NR	NA	---	Monthly	Grab		
Total Suspended Solids	mg/l	28	89	Twice/Month	Daily Composite	134	NR	NA		
Total Suspended Solids	g/d	3,115	8,765	Twice/Month	Daily Composite	NA	NR	NA		✓

**Table A Footnotes and Remarks:**

**Footnotes:**

- <sup>1</sup> For this parameter, the Permittee shall maintain at the facility a record of the total flow for each day of discharge and shall report the Average Daily Flow and the Maximum Daily Flow for each month.
- <sup>2</sup> The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.
- <sup>3</sup> "Minimum Level" refers to Section 6(A)(4) of this permit.
- <sup>4</sup> The noted permit limit is below the Minimum Level (ML). Therefore, compliance with this limit will be determined based on the ML. The Permittee shall conduct analysis for this parameter in accordance with an approved method. If the measured value is less than the ML, the results shall be reported in accordance with Section 6(A)(6) and the results will be considered to be in compliance with the permit limit. If the measured value is greater or equal to the ML, the actual results obtained shall be reported on the DMR and these results will be considered a violation of the permit limit.
- <sup>5</sup> The effluent shall be monitored for fecal coliform from May 1<sup>st</sup> through September 30<sup>th</sup>. The geometric mean of the fecal coliform bacteria values for the effluent sample(s) collected in a period of thirty (30) days during the period from May 1<sup>st</sup> through September 30<sup>th</sup> shall not exceed a monthly geometric mean of 200 cfus per 100 milliliters, nor shall any sample(s) exceed 400 cfus per 100 milliliters as a daily maximum.

**Remarks:**

1. Abbreviations used for units are as follows: cfus means colony forming units; gpd means gallons per day; g/d means grams/day; mg/l = milligrams/liter; lbs/day means pounds per day; SU means Standard Units; µg/l means micrograms/liter. Other abbreviations are as follows: NA means Not Applicable; ND means Non-Detectable; NR means Not Reportable; RDM means Range During Month; RDS means Range During Sampling.
2. Results for acute aquatic toxicity shall be reported on the DMR as the LC<sub>50</sub> value obtained from the first 48 hours of a valid chronic toxicity test.
3. Results for chronic aquatic toxicity shall be reported on the DMR as C-NOEC (Chronic-No Observed Effect Concentration). The C-NOEC is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, it means the lowest concentration where there is no observable effect.

**Table B**

**Discharge Serial Number:** 002-1 **Monitoring Location:** 1  
**Wastewater Description:** Fire suppression test water  
**Monitoring Location Description:** At DSN 002, end of pipe  
**Discharge is to:** Tom Allyn Pond **In-stream waste concentration = 1.7%**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported		
Acute Aquatic Toxicity <sup>4</sup> , <i>Daphnia pulex</i> CTC = 1.7%	%	NA	NA	NR	NA	NOAEL ≥ 90%	Annually	Grab		
Acute Aquatic Toxicity <sup>4</sup> , <i>Pimephales promelas</i> CTC = 1.7%	%	NA	NA	NR	NA	NOAEL ≥ 90%	Annually	Grab		
Chlorine, Total Residual	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.020	✓
Copper, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Flow, Maximum during 24 hour period <sup>1</sup>	gpd	NA	---	Daily/Monthly	Daily Flow	NA	NR	NA		
Flow (Total, Day of Sampling)	gpd	NA	---	Semi-annual	Daily Flow	NA	NR	NA		
Iron, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Lead, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Nickel, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Oil & Grease, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
pH, Day of Sampling	SU	NA	NA	NR	NA	6.0-9.0	Annually	Grab		
Total Suspended Solids	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Zinc, Total	mg/l	NA	NA	NR	NA	---	Semi-Annual	Grab	0.010	✓

**Table B Footnotes and Remark:**

**Footnotes:**

<sup>1</sup> For this parameter, the Permittee shall maintain at the facility a record of the total flow and duration of discharge for each day of discharge of fire suppression test water and shall report the Maximum Daily Flow for each sampling month.

<sup>2</sup> The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

<sup>3</sup> Minimum Level refers to Section 6(A)(4) of this permit.

<sup>4</sup> The results of the aquatic toxicity tests shall be recorded in % survival on the DMR.

**Remark:**

Fire suppression test water consists of discharges from the following systems: Wet Pipe Sprinkler Systems 18, 21, and 26; Deluge Systems 19, 20, 25, and 34; Hydrant Systems 52, 50, 10, 12, and 13.

**Table C**

**Discharge Serial Number:** 003-1 **Monitoring Location:** 1

**Wastewater Description:** Fire suppression test water

**Monitoring Location Description:** NA. No monitoring required

**Discharge is to:** On-site containment lagoon

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported	

No monitoring required

**Table C Footnotes and Remarks:**

**Remarks:**

1. Fire suppression test water consists of discharges from the following systems: Hydrant (w/ monitoring nozzle) Systems 67 and 68; Deluge Systems 35, 36, 39; Foam Systems 44, 45, 46, 47.
2. No monitoring for this outfall is required because the discharge is not readily measurable. The discharge from DSN 002, DSN 004, and DSN 005 has been determined to be similar in nature to this discharge.

**Table D**

**Discharge Serial Number:** 004-1 | **Monitoring Location:** 1  
**Wastewater Description:** Fire suppression test water  
**Monitoring Location Description:** At DSN 004, end of pipe  
**Discharge is to:** Tom Allyn Pond | **In-stream waste concentration =** 6.2%

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level <sup>3</sup>	Monitoring required with toxicity test
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported		
Acute Aquatic Toxicity <sup>4</sup> , <i>Daphnia pulex</i> CTC=6.2%	%	NA	NA	NR	NA	NOAEL ≥ 90%	Annually	Grab		
Acute Aquatic Toxicity <sup>4</sup> , <i>Pimephales promelas</i> CTC = 6.2%	%	NA	NA	NR	NA	NOAEL ≥ 90%	Annually	Grab		
Chlorine, Total Residual	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.020	✓
Copper, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Flow, Maximum during 24 hour period <sup>1</sup>	gpd	NA	---	Daily/Monthly	Daily Flow	NA	NR	NA		
Flow (Total, Day of Sampling)	gpd	NA	---	Semi-annual	Daily Flow	NA	NR	NA		
Iron, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Lead, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Nickel, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Oil & Grease, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-9.0	Annually	Grab		
Total Suspended Solids	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Zinc, Total	mg/l	NA	NA	NR	NA	---	Semi-annual	Grab	0.010	✓

**Table D Footnotes and Remark:**

**Footnotes:**

<sup>1</sup> For this parameter the Permittee shall maintain at the facility a record of the total flow and duration of discharge for each day of discharge of fire suppression test water and shall report the Maximum Daily Flow for each sampling month.

<sup>2</sup> The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

<sup>3</sup> Minimum Level refers to Section 6(A)(4) of this permit.

<sup>4</sup> The results of the toxicity tests shall be recorded in % survival on the DMR.

**Remark:**

1. Fire suppression test water consists of discharges from the following systems: Hydrant (w/ monitoring nozzle) Systems 61, 63, and 38; Wet Pipe Sprinkler Systems 29, 31, 32; Deluge Systems 28, 30; Foam Systems 43, 40, 41, 33; Hydrant Systems 16, 15, 18, 17, 19.

**Table E**

**Discharge Serial Number:** 005-1 **Monitoring Location:** 1  
**Wastewater Description:** Fire suppression test water  
**Monitoring Location Description:** At DSN 005, end of pipe  
**Discharge is to:** Tom Allyn Pond **In-stream waste concentration = 1.7%**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test <sup>3</sup>	Monitoring required with toxicity test
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported		
Acute Aquatic Toxicity <sup>4</sup> , <i>Daphnia pulex</i> CTC=1.7%	%	NA	NA	NR	NA	NOAEL ≥90%	Annually	Grab		
Acute Aquatic Toxicity <sup>4</sup> , <i>Pimephales promelas</i> CTC=1.7%	%	NA	NA	NR	NA	NOAEL ≥90%	Annually	Grab		
Chlorine, Total Residual	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.020	✓
Copper, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Flow, Maximum during 24 hour period <sup>1</sup>	gpd	NA	---	Daily//Monthly	See below	NA	NR	NA		
Flow (Total, Day of Sampling)	gpd	NA	---	Semi-annual	Daily Flow	NA	NR	NA		
Iron, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Lead, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Nickel, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab	0.005	✓
Oil & Grease, Total	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-9.0	Annually	Grab		✓
Total Suspended Solids	mg/l	NA	NA	NR	NA	---	Annually	Grab		✓
Zinc, Total	mg/l	NA	NA	NR	NA	---	Semi-annual	Grab	0.010	✓

**Table E Footnotes and Remark:**

**Footnotes:**

<sup>1</sup> For this parameter the Permittee shall maintain at the facility a record of the total flow and duration of discharge for each day of discharge of fire suppression test water and shall report the Maximum Daily Flow for each sampling month.

<sup>2</sup> The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

<sup>3</sup> Minimum Level refers to Section 6(A)(4) of this permit.

<sup>4</sup> The results of the toxicity tests shall be recorded in % survival on the DMR.

**Remark:**

1. Fire suppression test water consists of discharges from the following systems: Dry Pipe Sprinkler Systems 4, 5, 16; Wet Pipe Sprinkler Systems 1, 2, 3, 8, 9,10, 13, 14, 38; Deluge System 37; Hydrant Systems 02, 03.



**Table F**

**Discharge Serial Number:** 007-1 **Monitoring Location:** 1  
**Wastewater Description:** Fire suppression test water  
**Monitoring Location Description:** NA. No monitoring required.  
**Discharge is to:** Thames River

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported	

No monitoring required

**Table F Remarks:**

**Remarks:**

1. Fire suppression test water consists of discharges from the following systems: Wet Pipe Sprinkler Systems 11 and 27; Hydrant Systems 4, 14, 05, 20.
2. No monitoring for this outfall is required because the discharge is not readily measurable. The discharge from DSN 005 has been determined to be similar in nature to this discharge.

**Table G**

**Discharge Serial Number:** G001-1 **Monitoring Location:** 1  
**Wastewater Description:** Fire suppression test water  
**Monitoring Location Description:** NA. No monitoring required.  
**Discharge is to:** Thames River

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency	Sample Type or measurement to be reported	

No monitoring required

**Table G Remarks:**

**Remarks:**

1. Fire suppression test water consists of discharges from the following systems: Wet Pipe Spinkler System 13.
2. No monitoring for this outfall is required because the discharge is not readily measurable.

**Table H**

**Discharge Serial Number:** 001-1 **Monitoring Location:** G  
**Wastewater Description:** Influent to the wastewater treatment system  
**Monitoring Location Description:** At Pit 1A **Discharge is to:** DSN 001

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported
Acenaphthene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Acenaphthylene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Acrylonitrile	µg/l	NA	NA	NA	NR	---	Quarterly	Grab
Anthracene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Benzene	µg/l	NA	NA	NA	NR	---	Quarterly	Grab
Benzo(a)anthracene	µg/l	NA	NA	NA	NR	---	Annually	Grab
3,4-Benzofluoranthene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Benzo(k)fluoranthene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Benzo(a)pyrene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Bis(2-ethylhexyl)phthalate	µg/l	NA	NA	NA	NR	---	Annually	Grab
Carbon tetrachloride	µg/l	NA	NA	NA	NR	---	Quarterly	Grab
Chlorobenzene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Chloroethane	µg/l	NA	NA	NA	NR	---	Annually	Grab
Chloroform	µg/l	NA	NA	NA	NR	---	Annually	Grab
2-Chlorophenol	µg/l	NA	NA	NA	NR	---	Annually	Grab
Chrysene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Di-n-butyl phthalate	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,2-Dichlorobenzene	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,3-Dichlorobenzene	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,4-Dichlorobenzene	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,1-Dichloroethane	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,2-Dichloroethane	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,1-Dichloroethylene	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,2-trans-Dichloroethylene	µg/l	NA	NA	NA	NR	---	Annually	Grab
2,4-Dichlorophenol	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,2-Dichloropropane	µg/l	NA	NA	NA	NR	---	Annually	Grab
1,3-Dichloropropylene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Diethyl phthalate	µg/l	NA	NA	NA	NR	---	Annually	Grab
2,4-Dimethylphenol	µg/l	NA	NA	NA	NR	---	Annually	Grab
Dimethyl phthalate	µg/l	NA	NA	NA	NR	---	Annually	Grab
4,6-Dinitro-o-cresol	µg/l	NA	NA	NA	NR	---	Annually	Grab
2,4-Dinitrophenol	µg/l	NA	NA	NA	NR	---	Annually	Grab
2,4-Dinitrotoluene	µg/l	NA	NA	NA	NR	---	Annually	Grab
2,6-Dinitrotoluene	µg/l	NA	NA	NA	NR	---	Annually	Grab
Ethylbenzene	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Fluoranthene	µg/l	NA	NA	NR	NA	---	Annually	Grab

**Table H**

**Discharge Serial Number:** 001-1 **Monitoring Location:** G  
**Wastewater Description:** Influent to the wastewater treatment system  
**Monitoring Location Description:** At Pit 1A **Discharge is to:** DSN 001

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported
Fluorene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Hexachlorobenzene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Hexachlorobutadiene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Hexachloroethane	µg/l	NA	NA	NR	NA	---	Annually	Grab
Methyl chloride	µg/l	NA	NA	NR	NA	---	Annually	Grab
Methylene chloride	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Naphthalene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Nitrobenzene	µg/l	NA	NA	NR	NA	---	Annually	Grab
2-Nitrophenol	µg/l	NA	NA	NR	NA	---	Annually	Grab
4-Nitrophenol	µg/l	NA	NA	NR	NA	---	Annually	Grab
Phenanthrene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Phenol	µg/l	NA	NA	NR	NA	---	Annually	Grab
Pyrene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Tetrachloroethylene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Toluene	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Total Chromium	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Total Copper	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Total Cyanide	µg/l	NA	NA	NR	NA	---	Annually	Grab
Total Lead	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Total Nickel	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Total Zinc	µg/l	NA	NA	NR	NA	---	Twice/month	Grab
1,2,4-Trichlorobenzene	µg/l	NA	NA	NR	NA	---	Annually	Grab
1,1,1-Trichloroethane	µg/l	NA	NA	NR	NA	---	Annually	Grab
1,1,2-Trichloroethane	µg/l	NA	NA	NR	NA	---	Annually	Grab
Trichloroethylene	µg/l	NA	NA	NR	NA	---	Annually	Grab
Vinyl chloride	µg/l	NA	NA	NR	NA	---	Annually	Grab
Ammonia (as Nitrogen)	mg/l	NA	NA	NR	NA	---	Annually	Grab
Bromoform	mg/l	NA	NA	NR	NA	---	Quarterly	Grab
1,3-Butadiene	µg/l	NA	NA	NR	NA	---	Quarterly	Grab
Flow (Total, Day of Sampling)	gpd	---	---	Twice/month	Daily flow	NA	NR	NA
pH, Day of Sampling	S.U.	NA	NA	NR	NA	---	Twice/month	Grab
Selenium, Total	mg/l	NA	NA	NR	NA	---	Quarterly	Grab
Styrene	µg/l	NA	NA	NR	NA	---	Quarterly	Grab

**Table H**

**Discharge Serial Number:** 001-1 **Monitoring Location:** G

**Wastewater Description:** Influent to the wastewater treatment system

**Monitoring Location Description:** At Pit 1A **Discharge is to:** DSN 001

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency <sup>2</sup>	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/Reporting Frequency <sup>2</sup>	Sample Type or measurement to be reported

**Table H Footnotes and Remark:**

**Footnotes:**

<sup>1</sup> For this parameter the Permittee shall maintain at the facility a record of the total influent flow for each day of sampling and shall report the Average Monthly Influent Flow and Maximum Daily Influent Flow for each sampling month.

<sup>2</sup> The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

**Remark:**

The Permittee shall ensure that the lowest practicable detection limits shall be achieved for the samples from this monitoring point.

**Table I****Discharge Serial Number:** 04G**Monitoring Location:** N**Description:** Aeration Basin at the Wastewater Treatment System**Monitoring Location Description:** From the Biox Unit

PARAMETER	UNITS	Maximum Daily Limit	Sampling Frequency	Sample Type
Dissolved Oxygen	mg/L	---	Twice per month	Grab
Sludge Volume Index	mg/L	---	Twice per month	Grab
Total Suspended Solids	mg/L	---	Twice per month	Grab

**Table I Remarks:****Remarks:**

1. The results for this monitoring point shall be maintained on-site and not submitted on DMRs.
2. The above-noted parameters are monitored for process-control purposes only. Therefore, the Permittee has the option to measure “Sludge Volume Index” and “Total Suspended Solids” in accordance with *The RTW Operations Toolset*, provided that this generates data equivalent to approved methods.

## SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

### (A) Chemical Analysis

- (1) Chemical analyses to determine compliance with limits and conditions established in this permit shall be performed using the methods approved pursuant to the 40 CFR 136 for the analysis of pollutants having approved methods under that part unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have approved methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in Section 6(A)(2) of this permit, unless an alternative method has been specifically approved in writing by the Commissioner.
- (2) The following analytical methods shall be used to determine the concentrations of the parameters listed below, using the most current version of the method:

PARAMETER	METHOD OF ANALYSIS
1,3-Butadiene	EPA Method 624
Styrene	EPA Method 624
Sludge Volume Index	See Table I, Remark 2
Total Suspended Solids (DSN 04G only)	See Table I, Remark 2

- (3) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.
- (4) The Minimum Levels specified in the Tables in Section 5 represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the noted parameters. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.
- (5) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible consistent with the requirements of this section of the permit.
- (6) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this section and which indicate that a parameter was not detected shall be reported as "less than x" where 'x' is the numerical value equivalent to the analytical method detection limit for that analysis.
- (7) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero (0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.
- (8) The analytical method used to determine the concentration of polynuclear aromatic hydrocarbons (PAHs) shall be EPA Method 625.

## SECTION 7: TOXICITY MONITORING

(A) *Acute Toxicity Monitoring: DSN 001 (Grab Samples Only)*. The Permittee shall conduct acute aquatic toxicity testing to determine compliance with the permit limits in accordance with the following:

- (1) **TEST METHOD:** Acute aquatic toxicity monitoring shall be performed as prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012), or the most current version, with any exceptions or clarifications noted below.

- (2) **SAMPLE COLLECTION & HANDLING:**
- (a) Grab samples shall be chilled immediately following collection. Samples shall be held at 4 °C until aquatic toxicity testing is initiated.
  - (b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for aquatic toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.
  - (c) Tests for aquatic toxicity shall be initiated within 36 hours of sample collection.
- (3) **TEST SPECIES & TEST DURATION:** Monitoring for aquatic toxicity shall be conducted as follows:
- (a) For 48-hours utilizing neonatal *Mysidopsis bahia* (1-5 days old with no more than 24-hours range in age).
  - (b) For 96-hours utilizing larval *Menidia beryllina* (9-14 days old with no more than 24-hours range in age).
- (4) **TEST CONDITIONS:**
- (a) Tests for aquatic toxicity shall be conducted as prescribed for static non-renewal acute tests.
  - (b) At a minimum, pH, specific conductance, salinity, alkalinity, hardness, and total residual chlorine shall be measured in the highest concentration of effluent test solution and in the dilution (control) water at the beginning of the test and at test termination. If total residual chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination. Salinity shall be measured in each test concentration at the beginning of the test and at test termination.
  - (c) For tests with saltwater organisms that require salinity adjustment of the effluent, chemical analyses shall be conducted on an aliquot of the effluent sample collected for Aquatic Toxicity testing and on an aliquot of the effluent following salinity adjustment. Both sets of results shall be reported on the Aquatic Toxicity Monitoring Report (ATMR).
  - (d) Multi-concentration (definitive) testing, with LC<sub>50</sub> as the endpoint, shall be conducted to determine compliance with limits on Aquatic Toxicity and monitoring conditions and shall incorporate, at a minimum, the following effluent concentrations: 100%, 75%, 50%, 25%, 12.5%, and 6.25%.
  - (e) Organisms shall not be fed during the tests.
  - (f) Aquatic toxicity tests shall be conducted at a salinity of 25 ppt ±2 ppt.
  - (g) Sodium lauryl sulfate or sodium dodecyl sulfate shall be used as the reference toxicant.
  - (h) Synthetic seawater for use as dilution water or controls shall be prepared with deionized water and artificial sea salts as described in EPA-821-R-02-012.
  - (i) If the salinity of the source water is more than 5 ppt, or lower than the culture water used for rearing the organisms, a second set of controls matching the salinity of the culture water shall be added to the test series. Test validity shall be determined using the controls adjusted to match the source water salinity.

- (j) The actual effluent concentrations in definitive tests with saltwater organisms shall be used in calculating test results.
- (5) **CHEMICAL ANALYSIS:** Chemical analyses of the parameters identified in the Section 5 tables under “Monitoring Required With Toxicity Test” shall be conducted on an aliquot of the same sample tested for aquatic toxicity.
- (6) **ACCEPTABILITY CRITERIA:** Compliance shall be demonstrated when the results of a valid definitive aquatic toxicity test indicates that the LC<sub>50</sub> value for the test is greater than the aquatic toxicity limit.

(B) *Acute Toxicity Monitoring: DSN 002, DSN 004, and DSN 005.* The Permittee shall conduct acute toxicity testing for these discharge points in accordance with the following:

- (1) **TEST METHOD:** Samples for monitoring of acute aquatic toxicity shall be performed as prescribed in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA-821-R-02-012), or the most current version with any exceptions or clarifications noted below:
- (2) **SAMPLE COLLECTION & HANDLING:**
  - (a) Grab samples shall be chilled immediately following collection. Samples shall be held at 4 °C until aquatic toxicity testing is initiated.
  - (b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for aquatic toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.
  - (c) Tests for aquatic toxicity shall be initiated within 36 hours of sample collection.
- (3) **TEST SPECIES & TEST DURATION:** Monitoring for aquatic toxicity to determine compliance with the permit limit shall be conducted as follows:
  - (a) For 48-hours utilizing neonatal *Daphnia pulex* (less than 24-hours old).
  - (b) For 48-hours utilizing larval *Pimephales promelas* (1-14 days old with no more than 24-hours range in age).
- (4) **TEST CONDITIONS:**
  - (a) Tests for aquatic toxicity shall be conducted as prescribed in the referenced test manual for static non-renewal acute tests.
  - (b) At a minimum, pH, specific conductance, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If Total Residual Chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination.
  - (c) Single-concentration tests shall be conducted at the specified Critical Test Concentration (CTC) noted in the Section 5 tables as prescribed in section 22a-430-3(j)(7)(A)(i) of the Regulations of Connecticut State Agencies, except that five replicates of undiluted effluent and five replicates of effluent diluted to the CTC shall be included.



- (d) For freshwater testing, synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L ( $\pm 5$  mg/L as CaCO<sub>3</sub>) shall be used as dilution water.
  - (e) Organisms shall not be fed during the tests.
  - (f) Copper nitrate shall be used as the reference toxicant.
- (5) **CHEMICAL ANALYSIS:** Chemical analyses of the parameters identified in the Section 5 tables under "Monitoring Required With Toxicity Test" shall be conducted on an aliquot of the same sample tested for aquatic toxicity.
  - (6) **ACCEPTABILITY CRITERIA:** Compliance shall be demonstrated when the results of a valid aquatic toxicity test indicates there is 90% or greater survival in the effluent at the specified CTC.

(C) *Chronic (and Modified Acute) Toxicity Monitoring: DSN 001.* The Permittee shall conduct chronic toxicity testing for this discharge point in accordance with the following:

- (1) **TEST METHOD:** Chronic toxicity monitoring shall be performed as prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, EPA 821-R-02-014, or the most current version, with any exceptions or clarifications noted below:
- (2) **SAMPLE COLLECTION & HANDLING:**
  - (a) Composite samples shall be chilled as they are collected. Samples shall be held at 4 °C until aquatic toxicity testing is initiated.
  - (b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.
  - (c) Tests for aquatic toxicity shall be initiated within 36 hours of sample collection.
- (3) **TEST SPECIES & TEST DURATION:** Monitoring for aquatic toxicity to determine compliance with the chronic acute toxicity permit limit shall be conducted as follows:
  - (a) For seven days utilizing neonatal *Mysidopsis bahia* (1-5 days old with no more than 24-hours range in age).
  - (b) For seven days utilizing larval *Menidia beryllina* (9-14 days old with no more than 24-hours range in age).

Survival results of the first 48 hours (for *Mysidopsis bahia*) and the first 96 hours (for *Menidia beryllina*), shall be used for determining compliance with acute toxicity limits.
- (4) **CHRONIC ENDPOINTS:**
  - (a) *Mysidopsis bahia*: Survival, growth, and egg development
  - (b) *Menidia beryllina*: Survival and growth
- (5) **DILUTION WATER:** Thames River water collected immediately upstream of the area influenced by the discharge shall be used as site water control (0% effluent) and dilution water in the toxicity tests. The Permittee shall document the dilution water sampling location by providing USGS coordinates and/or a map of the location.

- (6) **TEST CONDITIONS:**
- (a) Tests for Aquatic Toxicity shall be conducted as prescribed in the referenced test manual for static with daily renewal and in accordance with Attachment A of the permit. Daily composite samples of the discharge and grab samples of the Thames River for use as site water control and dilution water shall be collected on: Day 0 (for test solution renewal on Day 1 and Day 2 of the test); Day 2 (for test solution renewal on Day 3 and Day 4 of the test); and Day 4 (for test solution renewal on Days 5, 6, and 7 of the test). Samples shall not be dechlorinated, pH or hardness adjusted, or chemically altered in any way.
  - (b) Tests concentrations shall be comprised of 5%, 10%, 20%, 40%, 80%, and 100% effluent samples, laboratory water control, and dilution site water.
  - (c) The 100% effluent sample shall not be de-chlorinated, filtered, or altered in any way.
  - (d) Laboratory control water shall be adjusted to a salinity of 25 ppt  $\pm$ 2 ppt.
  - (e) Dilution site water shall be collected upstream of the discharge or docking area.
- (7) **CHEMICAL ANALYSIS:** The 100% effluent sample and the Thames River water used in the chronic toxicity test, shall, at a minimum, be analyzed for those parameters identified in Section 5, Table A under "Monitoring Required With Toxicity Test" and the following parameters: specific conductance, alkalinity, hardness, salinity, and nitrate. Analysis of the effluent shall be the same sample as the sample tested for aquatic toxicity.
- (8) **ACCEPTABILITY CRITERIA:** Compliance with the acute toxicity limit shall be demonstrated when the results of a valid definitive aquatic toxicity test indicate that the LC<sub>50</sub> value for the test is greater than the aquatic toxicity limit. Compliance with the chronic toxicity limit shall be demonstrated when the C-NOEC results are greater than 5% effluent.
- (9) **REPORTING:** A report detailing the result of the chronic and modified acute toxicity monitoring shall be submitted no later than 60 days following the day sampling was concluded for that test. The report shall include a summary of the test results which includes, at a minimum, percent survival in each replicate test chamber and all supporting chemical/physical measurements performed in association with the toxicity test. Endpoints to be reported are: 48-hour and 96-hour LC<sub>50</sub>, 7-day LC<sub>50</sub> (survival), 7-day C-NOEC (survival), 7-day C-LOEC (survival), 7-day C-NOEC (growth), 7-day C-LOEC (growth), 7-day C-NOEC (fecundity), 7-day C-LOEC (fecundity).

## SECTION 8: REPORTING REQUIREMENTS

- (A) The results of chemical analyses and any aquatic toxicity test required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing) at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance  
Water Permitting and Enforcement Division (Attn: DMR Processing)  
Connecticut Department of Environmental Protection  
79 Elm Street  
Hartford, CT 06106-5127

- (B) Complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC<sub>50</sub> values and 95% confidence intervals for definitive test periods, C-LOEC (Chronic Lowest Observable Effluent Concentration) and C-NOEC (Chronic No Observable Effluent Concentration) for survival, growth and/or reproduction, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, including measured daily flow and

hours of operation for the days of sample collection, shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the following address. The ATMR shall be received at this address within 60 days of test completion.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)  
Connecticut Department of Environmental Protection  
79 Elm St.  
Hartford, CT 06106-5127

- (C) If this permit requires monitoring of a discharge on a calendar basis (e.g., monthly, quarterly, etc.), but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those Permittees whose required monitoring is discharge dependent (e.g., per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

#### **SECTION 9: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS**

- (A) If any sample analysis indicates that an Aquatic Toxicity effluent limitation in Section 5 of this permit has been exceeded, or that the test was invalid, another sample of the effluent shall be collected and tested for Aquatic Toxicity and associated chemical parameters, as described above in Sections 5, 6 and 7, and the results reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. In the case of intermittent discharges, another sample of the effluent shall be collected and re-tested when the next discharge occurs and the results submitted within 30 days. Results of all tests, whether valid or invalid, shall be reported.
- (B) If any two consecutive test results or any three test results in a twelve month period indicates that an Aquatic Toxicity Limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report to Bureau of Materials Management and Compliance Assurance (Attn: Aquatic Toxicity) for the review and approval of the Commissioner in accordance with section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the Permittee shall comply with any schedule approved by the Commissioner.
- (C) The Permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division, within 72 hours and in writing within thirty days of the discharge of any substance listed in the application but not listed in the permit if the concentration or quantity of that substance exceeds two times the level listed in the application.

#### **SECTION 10: COMPLIANCE SCHEDULE**

- (A) On February 27, 2007, the Permittee submitted to the Department an evaluation of the impact of the discharge of the boilerhouse wastewaters on the on-site containment lagoon. Based on the information provided, this discharge has the potential to cause exceedences of certain water quality standards. Therefore, the Permittee shall perform investigations and implement remedial actions in accordance with the following:
- (1) On or before forty-five (45) days after issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner, or verify staff expertise to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants or staff members. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner, or retain staff expertise acceptable to the Commissioner, until this permit compliance schedule is fully

complied with, and, within ten days after retaining any consultant other than one originally identified under this paragraph, the Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant(s) retained or staff member utilized shall be a qualified professional engineer licensed to practice in Connecticut. The Permittee shall submit to the Commissioner a description of a consultant's or staff's education, experience and training which is relevant to the work required by this consent order within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant or staff member unacceptable.

- (2) On or before sixty (60) days after issuance of this permit, the Permittee shall submit for the Commissioner's review and written approval a scope of study and schedule for investigating alternatives that provide for the boilerhouse wastewater discharge to be either eliminated from this permit or treated prior to discharge. The alternatives provided in the scope of study shall include, at a minimum, hauling the wastewater; installing a system to treat the boilerhouse wastewaters; and relocating of the boilerhouse discharge into the Permittee's existing wastewater treatment system.
- (3) The Permittee shall perform the investigation and other actions specified in the approved scope of study and in any approved supplemental plan(s) in accordance with the approved schedule(s).
- (4) Except as may be provided in the investigation schedule approved by the Commissioner, on or before thirty days after the approved date for completion of the investigation described in paragraph 10(A)(2) of this section, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report developed in accordance with the approved scope of study. Such report shall describe in detail the investigation performed; evaluate the alternatives for remedial actions, including but not limited to the measures described under paragraph 10(A)(2) of this section and any other alternative specified by the Commissioner; state in detail the most expeditious schedule for performing each alternative, and list all permits and approvals required for each alternative, including but not limited to any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes; provide for detailed cost estimates and economic comparisons of each potential alternative; propose a preferred alternative for each discharge with supporting justification therefore; and propose a detailed program and schedule to perform the preferred remedial actions, including but not limited to a schedule for applying for and obtaining all permits and approvals required for such remedial actions. The schedule shall provide for completion of the recommended alternatives as soon as possible, but in no event later than 180 days after issuance of this permit unless otherwise approved in writing by the Commissioner.
- (5) Unless another deadline is specified by the Commissioner, on or before sixty (60) days after approval of the report described in paragraph 10(A)(4) of this section, the Permittee shall submit plans and specifications to implement the preferred remedial action. The Permittee shall also submit by this date an updated list of all permits and approvals required for such action and a schedule for applying for and obtaining such permits and approvals, and submit applications for all permits and approvals required under section 22a-430 of the Connecticut General Statutes for such actions. The Permittee shall use best efforts to obtain all required permits and approvals.
- (6) The Permittee shall implement all remedial actions required by this permit in accordance with the approved plans and specifications as soon as possible, but, in no event shall the approved remedial actions be completed by later than 545 days after permit issuance. Within fifteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.
- (7) The Permittee shall submit to the Commissioner quarterly status reports effective upon permit issuance through to project completion and shall be due on the following dates: March 1<sup>st</sup>, June 1<sup>st</sup>, September 1<sup>st</sup>; and December 1<sup>st</sup>. Such reports shall include, but not be limited to, a detailed description of progress made by the Permittee in performing actions required by this section of the permit in accordance with the above schedule, including, but not limited to, development of engineering plans and specifications, construction activity, contract bidding, operational changes,

preparation and submittal of permit applications, and any other actions specified in the program approved pursuant to this section.

- (8) The Permittee shall use best efforts to submit to the Commissioner all documents required by this section of the permit in a complete and approvable manner. If the Commissioner notifies the Permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.
- (B) The Permittee shall investigate and reduce the level of zinc in discharges DSN 004 and DSN 005 in accordance with the following:
- (1) On or before forty-five (45) days after the date of issuance of this permit, the Permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by this section of the permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. The Permittee shall retain one or more qualified consultants acceptable to the Commissioner until the actions required by this section of the permit have been completed, and within ten days after retaining any consultant other than one originally identified under this paragraph, Permittee shall notify the Commissioner in writing of the identity of such other consultant. The consultant retained to perform the studies and oversee any remedial measures required by this section shall be a qualified professional engineer licensed to practice in Connecticut acceptable to the Commissioner. The Permittee shall submit to the Commissioner a description of a consultant's education, experience and training that is relevant to the work required by this permit within ten days after a request for such a description. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.
  - (2) On or before 120 days after the date of issuance of this permit, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report which describes and evaluates alternative actions which may be taken by the Permittee to achieve reduction in the level of zinc in DSN 004 and DSN 005. Such report shall:
    - (a) evaluate alternative actions to achieve zinc reductions including, but not limited to, pollutant source reduction, process changes/innovations, chemical substitutions, recycle and zero discharge systems, water conservation measures, and other internal and/or end-of-pipe treatment technologies;
    - (b) state in detail the most expeditious schedule for performing each alternative;
    - (c) list all permits and approvals required for each alternative, including but not limited to any permits required under sections 22a-32, 22a-42a, 22a-342, 22a-361, 22a-368 or 22a-430 of the Connecticut General Statutes;
    - (d) propose a preferred alternative or combination of alternatives with supporting justification; and
    - (e) propose a detailed program and schedule to perform all actions required by the preferred alternative including but not limited to a schedule for submission of engineering plans and specifications on any internal and/or end of pipe treatment facilities, start and completion of any construction activities related to any treatment facilities, and applying for and obtaining all permits and approvals required for such actions.

- (3) The Permittee shall implement all remedial actions required by this permit in accordance with the approved plans and specifications as soon as possible, but, in no event shall the approved remedial actions be completed by later than 455 days after permit issuance. Within fifteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.
  - (4) The Permittee shall submit to the Commissioner quarterly status reports effective upon permit issuance through to project completion and shall be due on the following dates: March 1<sup>st</sup>, June 1<sup>st</sup>, September 1<sup>st</sup>; and December 1<sup>st</sup>. Such reports shall include, but not be limited to, a detailed description of progress made by the Permittee in performing actions required by this section of the permit in accordance with the above schedule, including, but not limited to, development of engineering plans and specifications, construction activity, contract bidding, operational changes, preparation and submittal of permit applications, and any other actions specified in the program approved pursuant to this section.
  - (5) The Permittee shall use best efforts to submit to the Commissioner all documents required by this section of the permit in a complete and approvable manner. If the Commissioner notifies the Permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and the Permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this Compliance Schedule, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this section of the permit. Nothing in this paragraph shall excuse noncompliance or delay.
- C. Dates. The date of submission to the Commissioner of any document required by this section of the permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this section of the permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this section of the permit means calendar day. Any document or action which is required by this section only of the permit, to be submitted, or performed, by a date which falls on, Saturday, Sunday, or, a Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or Connecticut or federal holiday.
- D. Notification of noncompliance. In the event that the Permittee becomes aware that it did not or may not comply, or did not or may not comply on time, with any requirement of this section of the permit or of any document required hereunder, the Permittee shall immediately notify the Commissioner and shall take all reasonable steps to ensure that any noncompliance or delay is avoided or, if unavoidable, is minimized to the greatest extent possible. In so notifying the Commissioner, the Permittee shall state in writing the reasons for the noncompliance or delay and propose, for the review and written approval of the Commissioner, dates by which compliance will be achieved, and the Permittee shall comply with any dates which may be approved in writing by the Commissioner. Notification by the Permittee shall not excuse noncompliance or delay, and the Commissioner's approval of any compliance dates proposed shall not excuse noncompliance or delay unless specifically so stated by the Commissioner in writing.
- E. Notice to Commissioner of changes. Within fifteen days of the date the Permittee becomes aware of a change in any information submitted to the Commissioner under this section of the permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, the Permittee shall submit the correct or omitted information to the Commissioner.

- F. Submission of documents. Any document, other than a discharge monitoring report, required to be submitted to the Commissioner under this section of the permit shall, unless otherwise specified in writing by the Commissioner, be directed to:

Christine Gleason, Sanitary Engineer  
Department of Environmental Protection  
Bureau of Materials Management and Compliance Assurance  
Water Permitting & Enforcement Division  
79 Elm Street  
Hartford, CT 06106-5127

This permit modification is hereby issued on March 7, 2011

SUSAN FRECHETTE  
ACTING COMMISSIONER

SF:CMG

**APPENDIX A**

<b>TABLE 1: Testing Protocols for DSN 001 for: <i>Mysidopsis bahia</i> (48-hour acute and 7-day chronic tests)</b>	
<b>Testing procedure</b>	<i>Acute:</i> DEP standard toxicity test procedures, except as modified below. <i>Chronic:</i> EPA 821-R-02-014, except as modified below.
<b>Test type</b>	Static renewal
<b>Salinity</b>	25 ppt ±2 ppt
<b>Temperature</b>	26 °C ± 1 °C. Test temperature must not deviate (i.e., maximum minus minimum temperature) by more than 3 °C during the test
<b>Light quality</b>	Ambient laboratory illumination
<b>Light intensity</b>	10-20µE/m <sup>2</sup> /s (50-100 ft-c)
<b>Photoperiod</b>	16-h light, 8-h darkness, with phase in/out period
<b>Test chamber</b>	Glass or plastic (250 – 400 mL capacity) beakers
<b>Test solution volume</b>	200 mL per replicate
<b>Renewal of test solutions</b>	Daily
<b>Age of test organism</b>	7 days old
<b>No. of test organisms per chamber</b>	5 per replicate test chamber
<b>No of replicate test chambers per concentration</b>	8 (per effluent concentration), 8 (control water), 8 (dilution water)
<b>No. larvae per concentration</b>	40
<b>Source of food</b>	Newly hatched <i>Artemia</i> nauplii (less than 24-h old)
<b>Feeding regime</b>	Feed 150 24h old nauplii per mysid daily, half after test solution renewal and half after 8-12 h
<b>Cleaning</b>	Pipette excess food daily immediately before test solution renewal and feeding.
<b>Aeration</b>	None unless DO falls below 4.0 mg/l, then gently aerate all chambers.
<b>Control/Dilution water</b>	Laboratory control and Thames River water, samples, three separate collections: collected on day 0, day 2, and day 4.
<b>Effluent</b>	Composite sample collected at DSN 001. Three separate sample collections. Samples must be collected on Day 0, 2, and 4.
<b>Test duration</b>	<i>Acute:</i> 48 hours <i>Chronic:</i> 7 days
<b>Endpoint</b>	<i>Acute:</i> Survival <i>Chronic:</i> Survival, growth, and egg development
<b>Test acceptability criteria</b>	<i>Acute:</i> 90% survival in 48 hours. <i>Chronic:</i> 80% survival (averaged) in controls after 7 days. A minimum average dry weight of 0.2 mg per surviving mysid. Fecundity may be used if 50% of the females in controls produce eggs.
<b>Mortality observations</b>	Each test chamber is examined for mortality at 24-h intervals. Dead individuals are removed and if any individuals are missing (via cannibalism) they are noted.
<b>Physical- chemical measurements of solutions in test chambers</b>	DO, temperature, salinity and pH of the effluent and control test solutions are measured at the beginning, at 24-h intervals, and at test termination. These parameters are measured prior to and after test solution renewals. Because of possible harm or stress to the test organisms with meter probes, these parameters are not measured in the test chambers while conducting the test; instead DO and pH measurements are made in separate surrogate chambers without test organisms, prepared from effluent and control water. The surrogate chambers are maintained similar to test chambers (i.e., daily solution renewals). At the end of the chronic test, after the number of live individuals has been determined, measure DO, temperature, salinity, and pH in all effluent and control test chambers.
<b>Physical-chemical measurements of effluent sample and control sample.</b>	The following parameters are measured in each sample of DSN 001 and each sample collected from the Thames River: salinity, pH, acrylonitrile, bis (2-ethyl hexyl) phthalate, ethylbenzene, chromium, copper, lead, nickel, zinc, ammonia, 1,3-butadiene, total residual chlorine, oil and grease, surfactants, BOD, TSS, nitrate, and styrene.
<b>Reference toxicant</b>	Sodium dodecyl sulfate with an acute endpoint (48 hours) and a chronic endpoint (7 days).



**APPENDIX A**

<b>TABLE 2: Testing Protocols for DSN 001 for: <i>Menidia beryllina</i> (96-hour acute and 7-day chronic tests)</b>	
<b>Testing procedure</b>	<i>Acute:</i> DEP standard toxicity test procedures, except as modified below. <i>Chronic:</i> EPA 821-R-02-014, except as modified below.
<b>Test type</b>	Static renewal
<b>Salinity</b>	25 ppt ±2 ppt
<b>Temperature</b>	26°C ± 1
<b>Light</b>	Ambient laboratory illumination
<b>Photoperiod</b>	16-h light, 8-h dark
<b>Test chamber type</b>	Glass or plastic (1000 mL capacity)
<b>Test solution volume</b>	750 mL per replicate
<b>Test solution renewal</b>	Daily
<b>Age of test organism</b>	7-11 days old (no more than 24-hour range in age)
<b>No. of test organisms</b>	10 per replicate test chamber
<b>Replicates</b>	4 (per effluent concentration), 4 (dilution water), 4 (lab control water)
<b>Source of food</b>	Newly hatched (less than 24-h old) <i>Artemia</i> nauplii. Concentrate <i>Artemia</i> nauplii with a ≤ 150 um sieve mesh and rinse with seawater.
<b>Feeding regime</b>	Feed once a day concentrated <i>Artemia</i> nauplii at a rate per replicate of 0.1 mL (2 drops) on days 0-2 and 0.15 mL (3 drops) on days 3-6. Feed after test solution renewal.
<b>Cleaning test chambers</b>	Siphon excess food prior to test solution renewal.
<b>Aeration</b>	None, unless DO falls below 4.0 mg/l, then gently aerate all chambers
<b>Control/Dilution water</b>	Laboratory control and Thames River water, samples, three separate collections: collected on Day 0, Day 2, and Day 4.
<b>Effluent</b>	Composite samples collected at DSN 001. Three separate sample collections. Samples must be collected on Day 0, 2, and 4.
<b>Test duration</b>	<i>Acute:</i> 96 hours <i>Chronic:</i> 7 days
<b>Endpoint</b>	<i>Acute:</i> Survival <i>Chronic:</i> Survival, growth
<b>Test acceptability criteria</b>	<i>Acute:</i> 90% survival in 96 hours <i>Chronic:</i> 80% survival (averaged) in controls after 7 days. A minimum average dry weight of 0.50 mg per organism (or 0.43 mg per organism in preserved samples) in laboratory controls is required.
<b>Mortality observations</b>	Each test chamber is examined for mortality at 24-h intervals. Dead individuals are removed and if any individuals are missing they are noted.
<b>Physical- chemical measurements of solutions in test chambers</b>	DO, temperature, salinity, and pH of the effluent and control test solutions are measured at the beginning, at 24-h intervals, and at test termination. These parameters are measured prior to and after test solution renewals.
<b>Physical-chemical measurements of effluent sample and control sample.</b>	The following parameters are measured in each sample of DSN 001 and each sample collected from the Thames River: salinity, pH, acrylonitrile, bis (2-ethyl hexyl) phthalate, ethylbenzene, chromium, copper, lead, nickel, zinc, ammonia, 1,3-butadiene, total residual chlorine, oil and grease, surfactants, BOD, TSS, nitrate, and styrene.
<b>Reference toxicant</b>	Sodium dodecyl sulfate with an acute endpoint (96 hours) and a chronic endpoint (7 days).