STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

NPDES PERMIT MODIFICATION

issued to

Pfizer Inc.
Eastern Point Road
Groton, Connecticut 06340

Location Address:

Pfizer Global Research and Development
Groton/New London Laboratories
West Campus
445 Eastern Point Road
Groton, Connecticut 06340

Facility ID: 059-003

Permit ID: CT0000957

Receiving Stream: Thames River

Permit Expires: July 28, 2013

Receiving Water Body ID: CT-E1_014-SB

This permit modification is issued in accordance with section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), section 22a-430-4(p)(5) of the 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 a NPDES permit program.

The Commissioner of Environmental Protection ("the Commissioner") has made a final determination on this permit modification and found that modification of the existing system or installation of a new system will protect the waters of the state from pollution. The Commissioner's decision is based on Application No. 200903566 for a permit modification received on October 20, 2009 and the administrative record established in the processing of that application.

Pfizer Inc. ("Permittee") shall comply with all conditions of Permit No. CT0000957 issued on July 29, 2008 with the following modifications:

1. With respect to DSN 008, the monitoring frequency for bis(2-ethylhexyl)phthalate has been reduced from weekly to monthly. Table A is hereby revised and superseded and attached hereto. The revision is in bold.

2. With respect to the requirement to perform entrainment monitoring, the time frame for monitoring has been reduced from two years to one year. The applicable sections of the permit have been revised as follows:

Paragraph 10(B)(2) is hereby revised and superseded to read as follows: "On or before 90 days after the date of permit issuance, the Permittee shall submit for the Commissioner's review and written approval a scope of study for performing a one year impingement study and a **one** year entrainment monitoring and evaluation of the intake structure. The scope of study shall provide all of the necessary details associated with the design and include a schedule that identifies the study initiation and completion dates."

Paragraph 10(B)(5) is hereby revised and superseded to read as follows: "Within **18** months after approval of the scope of study described in paragraph 10(B)(2) above, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report on the findings of the entrainment monitoring and evaluation conducted. If such findings warrant modification(s) to the intake practices or to the design of the intake structure, the report shall additionally describe any and all recommendations to accomplish these modifications. Such recommendations shall include, but not be limited to, modification of the fish return system. The report shall also include a detailed schedule identifying when all appropriate recommendations will be implemented at the facility."

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3. Paragraph 10(B) is hereby modified to include the following additional requirement to perform a BTA study. Paragraph 10(B)(6) [new], 10(B)(7) [new], 10(B)(8) [new], and 10(B)(9) [new] shall read as follows:

"(6) In order to determine Best Technology Available ("BTA") for the cooling water intake structure at the site, the Permittee shall perform a detailed and comprehensive evaluation of all technological and operational measures, individually or in combination ("measures"), for minimizing adverse environmental impacts associated with the use of the cooling water intake structure at the site. Within 60 days after submittal of the impingement and entrainment reports required by 10(B)(4) and 10(B)(5) above, the Permittee will submit for the Commissioner's review and written approval a BTA scope of study describing the evaluation to be performed. At a minimum, this evaluation shall include the following:

(a) an identification of all available measures which are capable of minimizing adverse environmental impacts associated with impingement mortality and entrainment at the cooling water intake structure, including but not limited to, all fine-mesh screen technologies and closed-cycle recirculation systems. The evaluation of closed-cycle recirculation systems shall include, but not be limited to, closed-cycle recirculation systems that are capable of achieving a ninety per cent or greater reduction in daily intake flow or achieving a ninety per cent or greater reduction in impingement mortality and entrainment determined from the baseline calculation derived using data generated from the study performed in accordance with Section 10(B)(3) above;

(b) a narrative description of the design and operation of each of the measures to be evaluated, the reasons for selecting each of the measures to be evaluated, information used to demonstrate the performance of each of the measures, and whether or not each of the measures is in use at other facilities;

(c) an identification of the measures for which a detailed and comprehensive evaluation will not be performed. This shall include a detailed description of the proposed criteria and rationale for not fully evaluating a measure;

(d) an identification of all permits, licenses, or approvals required for constructing, implementing and operating each of the measures, 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;

(e) a description of the type of design, engineering calculations, drawings, and estimates which are necessary for each of the measures to be fully implemented;

(f) an identification of all known or potential biological, chemical, and environmental impacts from each of the measures to be evaluated, including but not limited to, the waters of the state and to air quality. In addition, a detailed description of the proposed method for measuring such impacts, and proposals to minimize such impacts to the extent practicable, shall also be evaluated;

(g) an estimate of the costs associated with installing and operating each of the measures to be evaluated;

(h) an identification of the impacts (e.g., costs, reliability, etc.) that each of the measures will have on either Connecticut's electrical supply grid or with other energy concerns. With respect to any such impacts, the Permittee shall propose a plan to minimize such impacts to the extent practicable;

(i) an identification of the siting, seismic, geologic, and hydrologic impacts that each of the measures will have, and proposals to minimize such impacts to the extent practicable;

(j) a proposed schedule for the design, construction, installation, and operation of each of the measures to be evaluated. Any downtime of generating units to accommodate construction, installation or maintenance shall be scheduled to coincide with otherwise necessary downtime (e.g., for repair, overhaul, or routine maintenance of the generating units) to the greatest extent practicable. Where additional downtime is required, the Permittee may propose coordinating scheduling of this downtime with regulatory or other entities to ensure that impacts to electric reliability and supply are minimized;

(k) an identification of the energy efficiency of each of the measures to be evaluated;

(*l*) a comprehensive evaluation, including supporting documentation, of the constraints or impediments that preclude the implementation of each of the measures evaluated. Such evaluation shall include all federal or state conflicts, engineering or locational constraints, energy impacts, and any other constraints or impediments that preclude the implementation of such measures. With respect to any such conflict, the Permittee shall include a proposal to describe such conflict in detail, the basis for the conflict, and all attempts that will be taken to resolve any such conflict;

(m) a calculation of the reduction in impingement mortality and entrainment impacts for all life stages of fish and shellfish that would be achieved by each of the measures evaluated. In proposing to calculate any such reduction, the Permittee shall assess the total reduction in impingement mortality and entrainment impacts against the calculation baseline determined using the data generated by the study performed in accordance with Section 10(B)(3) above.

(7) The Permittee shall perform the evaluation identified in Section 10(B)(6) above and submit for the Commissioner's review and written approval a thorough comprehensive report on or before September 30, 2011. The report shall, at a minimum, (i) address, in a comprehensive manner, the issues identified in Section 10(B)(6) above; (ii) describe, in detail, the findings of its evaluation; and, (iii) include a recommendation of the preferred BTA measure in accordance with the findings of the evaluation.

(8) If the evaluation performed by the Permittee pursuant to Section 10(B)(6) does not fully evaluate whether a measure can be implemented or provide information on a measure to the satisfaction of the Commissioner, the Permittee shall provide any additional information requested by the Commissioner in accordance with a supplemental plan and schedule approved in writing by the Commissioner. Unless otherwise specified in writing by the Commissioner, the supplemental plan and schedule shall be submitted for the Commissioner's review and written approval on or before thirty (30) days after notice from the Commissioner that such plan and schedule is required.

(9) Based upon the Commissioner's review and consideration of all the information included in the reports submitted pursuant to Section 10(B)(7), any supplemental information provided pursuant to Section 10(B)(8), or any other information required by the Commissioner, and in accordance with any law or regulation that is in effect at such time, the Commissioner shall make a BTA determination that will require the Permittee to implement measures that reflect BTA for the cooling water intake structure at the site in order to minimize, to the greatest extent, adverse environmental impacts. The Commissioner shall provide notice of such determination to implement any requirements associated with this BTA determination through a permit proceeding, including public notice, and an opportunity for a public hearing."

4. A typographical correction was made on the reference to Remark 1. Table A is revised and superseded and attached hereto. The revisions are in bold.

5. The units of measure for total nitrogen reporting were changed from kg/day to lbs/day for consistency with total nitrogen reporting requirements in other permits. The total nitrogen numeric limits also had to be changed from kg/day to the corresponding lbs/day values. Additionally, the equation used to calculate the total nitrogen value was corrected. Table A is revised and superseded and attached hereto. The revisions are in

Table A

Discharge Serial Number: **008-1** | Monitoring Location: **1**

Wastewater Description: **Utilities wastewaters (unused steam condensate, water softener regeneration wastewater, shell and tube heat exchanger wastewater, boiler blowdown, boiler washdown, boiler blowdown lab wastewater, and cooling tower blowdown), utilities contact cooling water (barometric condensor water) and chilled water, and stormwater**

Monitoring Location Description: **Basin instrument trailer on the west side of the effluent basin**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[3]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Aquatic Toxicity, *Mysidopsis bahia* NOAEL = 100% [See notes 4,5 & 6 below]	%	NA	≥90% survival	Semi-annual	Daily Composite	≥90% survival	NR	Grab	
Aquatic Toxicity, *Cyprinodon variegatus* NOAEL=100% [See notes 4,5 & 6 below]	%	NA	≥90% survival	Semi-annual	Daily Composite	≥90% survival	NR	Grab	
Ammonia (as N)	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Bis(2-ethylhexyl)phthalate	mg/l	0.006[7]	0.012[7]	**Monthly**	Daily Composite	0.018[7]	NR	Grab	0.005
BOD_5	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Chlorine, Total Residual	mg/l	NA	0.2	Quarterly	GSA	NA	NR	Grab	0.020
Chromium, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Copper, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Flow, Average and Maximum [1]	MGD	70	70	Continuous// Monthly	Daily Flow	NA	NR	NA	
Flow Rate, Day of Sampling	MGD	NA	70	Weekly	Daily Flow	NA	NR	NA	
Iron, Total	mg/l	3.0	5.0	Quarterly	Daily Composite	NA	NR	NA	
Lead, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Nickel, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Nitrogen, Kjeldahl, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen, Nitrate, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen, Nitrite, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Oil and Grease, Total	mg/l	NA	5.0	Quarterly	GSA	7.5	NR	Grab	
pH, Continuous	S.U.	NA	NA	NR	NA	6.0-9.0	Continuous// Monthly	RDM	
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-9.0	Weekly	RDS	
Solids, Total Suspended	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Temperature	°F	NA	NA	NR	NA	90	Continuous// Monthly	Instantan-eous	
Zinc, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	0.010
Fecal coliform	#/100 ml	NA	NA	NR	NA	---	Quarterly	Grab	
Escherichia coli [See Remark **1**]	#/100 ml	NA	NA	NR	NA	---	Quarterly	Grab	
Nitrogen (Total) [See Remark **2**]	**lbs/day**	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen (Total), by Jan 2009 [See Remark **2**]	**lbs/day**	441	661	Monthly	Daily Composite	NA	NR	NA	
Nitrogen (Total) by Jan 2014 [See Remark **2**]	**lbs/day**	331	441	Monthly	Daily Composite	NA	NR	NA	

Table A

Discharge Serial Number: **008-1** | Monitoring Location: 1

Wastewater Description: **Utilities wastewaters (unused steam condensate, water softener regeneration wastewater, shell and tube heat exchanger wastewater, boiler blowdown, boiler washdown, boiler blowdown lab wastewater, and cooling tower blowdown), utilities contact cooling water (barometric condensor water) and chilled water, and stormwater**

Monitoring Location Description: **Basin instrument trailer on the west side of the effluent basin**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[3]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	

Table A Footnotes and Remarks:

Footnotes:

[1] 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.

[2] 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'.

[3] Minimum Level Test refers to Paragraph (6)(A)(3) of this permit.

[4] Compliance with aquatic toxicity limits shall be based on the first 48 hours of a valid chronic toxicity test.

[5] For compliance with aquatic toxicity instantaneous limits, see Section 6, paragraph B.

[6] The results of the toxicity tests shall be recorded in % on the DMR.

[7] In accordance with the compliance schedule provided in Section 10(C) of this permit, these limits will take effect 365 days after issuance of this permit until permit expiration.

Remarks:

1. Monitoring for *Escherichia coli* shall be applicable from May 1st to September 30th.

2 The Permittee shall meet the above-noted total nitrogen targets for purposes of achieving water quality standards for dissolved oxygen in Long Island Sound. **Total nitrogen concentration means the total of the concentrations of: ammonia nitrogen, organic nitrogen (TKN-Ammonia N), nitrite nitrogen, and nitrate nitrogen. The calculated monthly mass loading of total nitrogen shall be reported in lbs/day.**

Table C

Discharge Serial Number: **01H-1** | Monitoring Location: **G**

Wastewater Description: **Saltwater intake**

Monitoring Location Description: **At the saltwater pumping intake structure (Building 109)**

Average Intake Flow: **25 MGD [See remark 1]** | Maximum Intake Flow: **45 MGD [See remark 1]**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[2]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Aquatic Toxicity, *Mysidopsis bahia*[3]	%	NA	---	Semi-annual	Daily Composite	NA	NR	NA	
Aquatic Toxicity, *Cyprinodon variegatus*[3]	%	NA	---	Semi-annual	Daily Composite	NA	NR	NA	
BOD_5	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Copper, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Flow, Average and Maximum Intake[1] [See rem. 1]	MGD	**25**	**45**	Daily//Monthly	Intake Flow	NA	NR	NA	
Lead, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Nickel, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.005
Nitrogen (as Ammonia)	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	
Oil & Grease, Total	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
pH, Day of Sampling	S.U.	NA	NA	NR	NA	---	Monthly	Grab	
Temperature	°F	NA	NA	NR	NA	---	Quarterly	Grab	
Solids, Total Suspended	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Zinc, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	0.010

Table C Footnotes and Remarks:

Footnotes:

[1] 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'.

[2] Minimum Level Test refers to Paragraph (6)(A)(3) of this permit.

[3] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

1. The Permittee shall maintain at the facility a record of the total intake flow for each day of salt water intake and shall report the Average Daily **Intake** Flow and the Maximum Daily **Intake** Flow for each month.

2. Debris collected on the intake racks shall not be re-introduced into the Thames River.

3. In the event of unusual incidents of large numbers of schooling fish being impinged over a short period of time, the Department of Environmental Protection, Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division shall be notified immediately and a written report of the incident shall be filed within 5 days. The report shall be directed to the Permitting Supervisor and shall include, at a minimum, the following information: the species, size, approximate numbers, time of occurrence, operating mode of the plant at the time of the incident, and any possible reasons for the occurrence.

bold.

6. The average monthly flows for Intake 01-H are reduced from 30,000,000 gpd to 25,000,000 gpd and the maximum daily flows for Intake 01-H are reduced from 80,000,000 gpd to 45,000,000 gpd. Table C (attached) is revised and superseded and attached hereto. The revisions are in bold.

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 that may be authorized under the Clean Water Act or the Connecticut General Statutes or regulations adopted thereunder, as amended. The permit as modified under this paragraph may also contain any other requirements of the Clean Water Act or Connecticut General Statutes or regulations adopted thereunder which are then applicable.

All other terms and conditions of Permit No. CT0000957 issued on July 29, 2008 shall continue in full force and effect.

This modification is hereby issued on April 23, 2010.

AMEY W. MARRELLA, Commissioner

AWM/CMG
Permit No. CT0000957

FACT SHEET
NPDES PERMIT MODIFICATION

APPLICANT	*PFIZER INC.*
NPDES PERMIT NO.	*CT0000957*
APPLICATION NO.	*200903566*
DATE APPLICATION RECEIVED	*October 20, 2009*
FACILITY ID.	*059-003*
LOCATION ADDRESS	*Pfizer Global Research and Development* *Groton/New London Laboratories* *West Campus* *445 Eastern Point Road* *Groton, Connecticut 06340*
FACILITY CONTACT	*James M. Constantine* *(860) 686-2595* *james.m.constantine@pfizer.com*
MAILING ADDRESS	*Pfizer Inc.* *Eastern Point Road, M/S 9090* *Groton, CT 06340*
DMR CONTACT	*Same*
PERMIT TERM	*5 years*
PERMIT CATEGORY	*NPDES Major*
PERMIT TYPE	*Modification*
OWNERSHIP	*Private*
RECEIVING WATER	*Thames River*
WATER BODY SEGMENT ID	*CT-E1_014-SB*
DISCHARGE LOCATIONS	*DSN 008: Latitude (41° 19' 50") Longitude (72° 4' 47")* *Intake 01H: Latitude (41° 19' 50") Longitude (72° 4' 47")*
DEP STAFF ENGINEER	*Christine Gleason (860/424-3278)* *christine.gleason@ct.gov*

PERMIT FEES

***Modification Fee**: $1300. Paid on October 20, 2009*

I. PROPOSED MODIFICATION(S)

Pfizer is seeking a modification of its NPDES permit, CT0000957, for the discharge of treated wastewater into the Thames River. The applicant requests that the following modifications be made: 1) that the monitoring frequency of bis(2-ethylhexyl)phthalate be reduced from weekly to monthly; 2) that the entrainment study be reduced from two years to one year. Pfizer submitted this request for a permit modification on October 20, 2009. The application has been assigned the following number: 200903566. On October 17, 2009, the applicant noticed the modification request in *The New London Day*. During discussions concerning the proposed modification, the Permittee also submitted another related modification (on March 1, 2010) concerning reducing the intake flows at DSN 01H in order to reflect actual operating conditions.

II. BACKGROUND

A summary of the issues concerning the proposed modifications are as follows:

1) ***Reduction in monitoring frequency for bis(2-ethylhexyl)phthalate***: Historically, the DSN 008 discharge has contained varying levels of bis(2-ethylhexyl)phthalate, some values being above the State's water quality criteria. Consequently, Pfizer was required to monitor this parameter weekly and undertake a study pursuant to Section 10(C) of Permit No. CT0000957 to investigate the sources of bis(2-ethylhexyl)phthalate at the facility and take steps to reduce/eliminate the bis(2-ethylhexyl)phthalate in the subject discharge. Pfizer conducted the requisite study and determined that the only possible source of bis(2-ethylhexyl)phthalate at the facility was the equipment associated with sampling the DSN 008 discharge. The Tygon tubing associated with the sampling equipment was changed to Silastic tubing on October 15, 2008. Since this change has been made, all of the weekly monitoring results for bis(2-ethylhexyl)phathalate in the DSN 008 discharge have been below 0.005 mg/L. Given the sample results, the monitoring frequency can be reduced from weekly to monthly.

2) ***Reduction in duration of the entrainment study from two years to one year***: Pfizer presently withdraws salt water from one intake structure (DSN 01H-1) located on the Thames River. The water is used for cooling associated with utilities-related applications (i.e., the production of steam and electricity for on-site use). The intake structure is presently permitted for an average monthly intake of 30 MGD and a maximum daily intake of 80 MGD. The actual intake rates are as follows:

MONTH/ YEAR	AVERAGE MONTHLY (GPD)	MAXIMUM DAILY (GPD)	MONTH/YEAR	AVERAGE MONTHLY (GPD)	MAXIMUM DAILY (GPD)
August 2008	6,186,410	12,234,940	**March 2009**	8,469,575	11,224,140
September 2008	4,512,694	9,781,040	**April 2009**	7,875,075	9,526,940
October 2008	5,921,139	9,887,140	**May 2009**	8,430,307	12,605,940
November 2008	7,309,862	10,714,440	**June 2009**	9,697,893	15,553,600
December 2008	9,248,314	11,641,820	**July 2009**	11,460,339	22,496,955
January 2009	10,825,034	13,886,340	**August 2009**	16,209,421	24,471,255
February 2009	8,525,867	11,311,340			

Section 10 (B) of the permit requires that Pfizer undertake an impingement and entrainment study of the salt water intake resources at the site. These studies began in February 2009. A preliminary report of the impingement and entrainment study, *A Preliminary Report on Pfizer's Intake Entrainment and Riverine Ichthyoplankton Sampling, February 2009 – June 2009*, dated August 2009, has been provided to the Department in support of the entrainment study reduction. Based on the information provided by the Department's Fisheries Division, it has been determined that one year of entrainment sampling is adequate for determining a baseline. Therefore, the proposed modification is made.

3) ***Reduction in intake flows***: The intake structure is presently permitted for an average monthly intake of 30 MGD and a maximum daily intake of 80 MGD. These intake flows are representative of a Phase II facility (i.e., a design capacity of greater than 50 MGD). However, Pfizer's actual flows are now significantly less than the permitted flows. Therefore, Pfizer has requested a reduction in intake flows to represent the actual operating conditions. Specifically, it has requested a reduction in the flow limits

as follows: 25 MGD (average monthly) and 45 MGD (maximum daily). The reduced flow limits now more closely approximate the actual intake flows and reflect the intake flows consistent with that of a Phase III facility. Therefore, the proposed modification is made.

III. ISSUES RELATED TO THE MODIFICATION

	YES	NO	N/A	
Does the proposed modification involve a:				
Facility expansion?	☐	☒	☐	
Production increase?	☐	☒	☐	
Process modification?	☐	☒	☐	
If yes, the applicant must comply with RCSA 22a-430-3(o) and (p).				
If yes, does the facility expansion, production increase or process modification result in a discharge of any new water, substance or material or increase the quantity or concentration of an existing pollutant beyond permit conditions or may constitute a new source?	☐	☐	☒	
Any concerns regarding:				
Endangered species	☐	☒	☐	
Coastal Management Consistency	☐	☒	☐	
Aquifer Protection Areas	☐	☒	☐	
Federally-recognized Indian land	☐	☒	☐	
Are the effluent limits, permit conditions, or standards less stringent than the existing permit?	☒	☐	☐	
If yes, has the permittee provided just cause in order to allow relaxation?	☒	☐	☐	
Is antibacksliding an issue?	☐	☒	☐	
Are all antidegradation provisions satisfied?	☐	☐	☒	

IV. OTHER

Some typographic changes and other corrections have been made to the permit. These include the following:

1) The Permittee has agreed to perform a study to determine the Best Technology Available (BTA) for impingement mortality and entrainment impacts concerning the cooling water intake structure at the site. This study is now Section 10(B)(6) – 10(B)(9) of the permit.

2) The references to Remarks 1 and 2 in Table A did not reference the correct remarks.

3) To be consistent with other permits, reporting for total nitrogen will be in lbs/day instead of kg/day. This also requires the numerical limits to be changed from kg/day values to lbs/day values. Specifically: 150 kg/day is now 331 lbs/day; 200 kg/day is now 441 lbs/day; and 300 kg/day is now 661 lbs/day. In addition, the formula for total nitrogen was not correct. The corrected formula is now in the permit under Remark 2 consistent with the formula contained in the *General Permit for Nitrogen Discharges*.

NPDES PERMIT

issued to

Pfizer Inc.
445 Eastern Point Road
Groton, Connecticut 06340

Location Address:

445 Eastern Point Road
Groton, Connecticut 06340

Facility ID: 059-003

Permit ID: CT0000957

Receiving Stream: Thames River

Permit Expires: July 28, 2013

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued 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 N.P.D.E.S. permit program.

(B) Pfizer Inc., ("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 (section 22a-92 of the Connecticut General Statutes).

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 section 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.

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

"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.

"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.

"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.

"In stream Waste Concentration (IWC)" means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"MGD" as a Monitoring Table abbreviation means “Million Gallons per Day”.

"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.

"NA" as a Monitoring Table abbreviation means “Not Applicable”.

"NR" as a Monitoring Table abbreviation means “Not Required”.

"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) 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 February, May, August, and November.

"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 February and August.

"ug/l" means micrograms per liter.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner, has issued a final determination and found that with respect to DSN 009, the discharge will not cause pollution of the waters of the state and with respect to DSN 008, the continuance of the existing system to treat the discharge will protect the waters of the state from pollution. The Commissioner's decision is based on Application 199600184 for permit reissuance received on January 30, 1996 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) The temperature of any discharge shall not increase the temperature of the receiving stream above 83 ^{o}F, or, in any case, raise the temperature of the receiving stream by more than 4 ^{o}F beyond any zone of influence specifically allocated to that discharge in this permit. The incremental temperature increase in coastal and marine waters is limited to 1.5 ^{o}F during the period including July, August, and September.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharges shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharges are restricted by, and shall be monitored in accordance with, the tables below:

Table A

Discharge Serial Number: **008-1** | Monitoring Location: **1**

Wastewater Description: **Utilities wastewaters (unused steam condensate, water softener regeneration wastewater, shell and tube heat exchanger wastewater, boiler blowdown, boiler washdown, boiler blowdown lab wastewater, and cooling tower blowdown), utilities contact cooling water (barometric condensor water) and chilled water, and stormwater**

Monitoring Location Description: **Basin instrument trailer on the west side of the effluent basin**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[3]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Aquatic Toxicity, *Mysidopsis bahia* NOAEL = 100% [See notes 4,5 & 6 below]	%	NA	≥90% survival	Semi-annual	Daily Composite	≥90% survival	NR	Grab	
Aquatic Toxicity, *Cyprinodon variegatus* NOAEL=100% [See notes 4,5 & 6 below]	%	NA	≥90% survival	Semi-annual	Daily Composite	≥90% survival	NR	Grab	
Ammonia (as N)	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Bis (2-ethylhexyl) phthalate	mg/l	0.006	0.012	Weekly	Daily Composite	0.018	NR	Grab	*
BOD_5	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Chlorine, Total Residual	mg/l	NA	0.2	Quarterly	GSA	NA	NR	Grab	*
Chromium, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Copper, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow, Average and Maximum [1]	MGD	70	70	Continuous// Monthly	Daily Flow	NA	NR	NA	
Flow Rate, Day of Sampling	MGD	NA	70	Weekly	Daily Flow	NA	NR	NA	
Iron, Total	mg/l	NA	3.0	5.0	Daily Composite	NA	NR	NA	
Lead, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Nickel, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Nitrogen, Kjeldahl, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen, Nitrate, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen, Nitrite, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Oil and Grease, Total	mg/l	NA	5.0	Quarterly	GSA	7.5	NR	Grab	
pH, Continuous	S.U.	NA	NA	NR	NA	6.0-9.0	Continuous// Monthly	RDM	
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0-9.0	Weekly	RDS	
Solids, Total Suspended	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Temperature	°F	NA	NA	NR	NA	90	Continuous// Monthly	Instantan-eous	
Zinc, Total	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	*
Fecal coliform	#/100 ml	NA	NA	NR	NA	---	Quarterly	Grab	

Table A

Discharge Serial Number: **008-1** | Monitoring Location: **1**

Wastewater Description: **Utilities wastewaters (unused steam condensate, water softener regeneration wastewater, shell and tube heat exchanger wastewater, boiler blowdown, boiler washdown, boiler blowdown lab wastewater, and cooling tower blowdown), utilities contact cooling water (barometric condensor water) and chilled water, and stormwater**

Monitoring Location Description: **Basin instrument trailer on the west side of the effluent basin**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[3]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Escherichia coli [See Remark 2]	#/100 ml	NA	NA	NR	NA	---	Quarterly	Grab	
Nitrogen (Total) [See Remark 3]	kg/day	NA	---	Monthly	Daily Composite	NA	NR	NA	
Nitrogen (Total), by Jan 2009 [See Remark 3]	kg/day	200	300	Monthly	Daily Composite	NA	NR	NA	
Nitrogen (Total) by Jan 2014 [See Remark 3]	kg/day	150	200	Monthly	Daily Composite	NA	NR	NA	

Table A Footnotes and Remarks:

***Footnotes*:**

[1] 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.

[2] 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'.

[3] Minimum Level Test refers to Paragraph (6)(A)(3) of this permit.

[4] Compliance with aquatic toxicity limits shall be based on the first 48 hours of a valid chronic toxicity test.

[5] For compliance with aquatic toxicity instantaneous limits, see Section 6, paragraph B.

[6] The results of the toxicity tests shall be recorded in % on the DMR.

***Remarks*:**

1. Monitoring for *Escherichia coli* shall be applicable from May 1st to September 30th.

2. The Permittee shall meet the above-noted total nitrogen targets for purposes of achieving water quality standards for dissolved oxygen in Long Island Sound. The total nitrogen target shall consist of the arithmetic sum of the following: Ammonia (Nitrogen), Nitrogen (Kjeldahl), Nitrogen (Nitrate), and Nitrogen (Nitrite).

Table B

Discharge Serial Number: **009-1** | Monitoring Location: **1**

Wastewater Description: **Intake structure screen backwash**

Monitoring Location Description: **Traveling screen outfall pipe**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Flow, Average and Maximum[1]	gpd	75,000	75,000	Daily//Monthly	Daily flow	NA	NR	NA	
Suspended Solids, Total	mg/l	NA	NA	NR	NA	---	Annual	Grab	

Table B Footnotes:

Footnotes:

[1] 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.

[2] 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'.

Table C

Discharge Serial Number: **01H-1** | Monitoring Location: **G**

Wastewater Description: **Saltwater intake**

Monitoring Location Description: **At the saltwater pumping intake structure (Building 109)**

Average Intake Flow: **30,000,000 gallons per day [See remark 1]** | Maximum Intake Flow: **80,000,000 gallons per day [See remark 1]**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test[2]
		Average Monthly Limit	Maximum Daily Limit	Sample//Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported	
Aquatic Toxicity, *Mysidopsis bahia*[3]	%	NA	---	Semi-annual	Daily Composite	NA	NR	NA	
Aquatic Toxicity, *Cyprinodon variegatus*[3]	%	NA	---	Semi-annual	Daily Composite	NA	NR	NA	
BOD_5	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Copper, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Flow, Average and Maximum Intake[1] [See rem. 1]	gpd	30,000,000	80,000,000	Daily//Monthly	Intake Flow	NA	NR	NA	
Lead, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Nickel, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*
Nitrogen (as Ammonia)	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	
Oil & Grease, Total	mg/l	NA	NA	NR	NA	---	Quarterly	Grab	
pH, Day of Sampling	S.U.	NA	NA	NR	NA	---	Monthly	Grab	
Temperature	°F	NA	NA	NR	NA	---	Quarterly	Grab	
Solids, Total Suspended	mg/l	NA	---	Monthly	Daily Composite	NA	NR	NA	
Zinc, Total	mg/l	NA	---	Quarterly	Daily Composite	NA	NR	NA	*

Table C Footnotes and Remarks:

Footnotes:

[1] 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'.

[2] Minimum Level Test refers to Paragraph (6)(A)(3) of this permit.

[3] The results of the toxicity tests shall be recorded in % on the DMR.

Remarks:

1. The Permittee shall maintain at the facility a record of the total intake flow for each day of salt water intake and shall report the Average Daily Flow and the Maximum Daily Flow for each month.

2. Debris collected on the intake racks shall not be re-introduced into the Thames River.

3. In the event of unusual incidents of large numbers of schooling fish being impinged over a short period of time, the Department of Environmental Protection, Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division shall be notified immediately and a written report of the incident shall be filed within 5 days. The report shall be directed to the Permitting Supervisor and shall include, at a minimum, the following information: the species, size, approximate numbers, time of occurrence, operating mode of the plant at the time of the incident, and any possible reasons for the occurrence.

(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.

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.

SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved pursuant to the 40 CFR 136 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 methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

(2) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136 unless otherwise specified.

(3) The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Section 5 Tables A and C. 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.

Parameter	Minimum Level
Bis (2-ethylhexyl) phthalate	5.0 ug/l
Chlorine, total residual	20.0 ug/l
Chromium	5.0 ug/l
Copper	5.0 ug/l
Lead	5.0 ug/l
Nickel	5.0 ug/l
Zinc	10.0 ug/l

(4) 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.

(5) 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.

(6) 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.

(B) Acute Aquatic Toxicity Test (DSN 008 and Intake 01H). Grab samples only:

(1) Samples for monitoring of Aquatic Toxicity shall be collected and handled 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 edition.

(a) Grab samples shall be chilled immediately following collection. Samples shall be held at 4 degrees Centigrade 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) Chemical analyses of the parameters identified in Section 5 Tables A and C shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity.

(i) At a minimum, pH, specific conductance, salinity, 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. Salinity shall be measured in each test concentration at the beginning of the test and at test termination.

(d) Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit limit/condition on Aquatic Toxicity (invertebrate) above shall be conducted for 48-hours utilizing neonatal *Mysidopsis bahia* (1-5 days old with no more than 24-hours range in age).

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit limit/condition on Aquatic Toxicity (vertebrate) above shall be conducted for 48-hours utilizing larval *Cyprinodon variegatus* (1-14 days old with no more than 24-hours range in age).

(4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below, and in accordance with Tables D and E.

(a) For Aquatic Toxicity Limits and for monitoring only conditions, expressed as an NOAEL value, Pass/Fail (single-concentration) tests shall be conducted at a specified Critical Test Concentration (CTC) equal to the Aquatic Toxicity Limit of 100%, as prescribed in section 22a-430-3(j)(7)(A)(i) of the Regulations of Connecticut State Agencies.

(b) *Mysidopsis bahia* organisms may be fed during the tests.

(c) Aquatic toxicity tests with saltwater organisms shall be conducted at a salinity of 28 parts per thousand, plus or minus 2 parts per thousand.

(i) Sodium lauryl sulfate or sodium dodecyl sulfate shall be used as the reference toxicant.

(ii) 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.

(iii) If the salinity of the source water is more that 5 parts per thousand higher, 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.

(5) Compliance with limits on Aquatic Toxicity shall be determined as follows:

(a) For limits expressed as an NOAEL value, compliance shall be demonstrated when the results of a valid pass/fail Aquatic Toxicity test indicates there is greater than 50% survival in the undiluted effluent and 90% or greater survival in the effluent at the specified CTC.

SECTION 7: CHRONIC TOXICITY MONITORING CONDITION

(A) The Permittee shall monitor the chronic toxicity of discharges DSN 008 and Intake 01H in accordance with the following specifications:

(1) Chronic toxicity testing of the discharge shall be conducted semi-annually during February and August. Survival results of the acute exposure portion of the tests, first 48 hours, shall be used for determining compliance with limits on aquatic toxicity in Tables A and C, for DSN 008 and Intake 01H, respectively.

(2) Chronic toxicity tests shall be performed on the discharges in accordance with the test methodology established in "Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms", EPA 821-R-02-014, (3rd edition), or the most current edition, and in accordance with Tables D and E.

(3) The single test concentration shall be comprised of 100% effluent samples, laboratory control water, and dilution water.

(4) The 100% effluent samples (DSN 008 and Intake 01H) shall not be dechlorinated, filtered, or altered in any way.

(5) Laboratory control water shall be adjusted to a salinity of 28 plus or minus 2 parts per thousand.

(6) Dilution control water shall be collected near the cooling water intake.

(B) Compliance with the permit limits on aquatic toxicity appearing in Tables A and C shall be determined using the 48 hour results of a valid chronic toxicity test. Compliance is indicated when the 48 hour survival of test organisms does not exhibit any significant increase in mortality between the site water and the sample as determined by means of a one-tailed test at an alpha level of 0.05.

(C) If any chronic toxicity test result indicates a significant increase in mortality of test organisms between samples of DSN 008 and Intake 01H and the control at the completion of the chronic toxicity test, the Permittee shall submit to the Department within 30 days of the conclusion of the test a brief 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.

TABLE D: Testing Protocols for DSN 008 and Intake 01H for: *Mysidopsis bahia* (48-hour acute and 7-day chronic tests).	
Testing procedure	*Acute*: DEP standard toxicity test procedures, except as modified below. *Chronic*: EPA 821-R-02-014, except as modified below.
Test type	Static with daily renewal.
Salinity	Effluent (DSN 008 and Intake 01H) water, dilution water (Thames River) and lab control water (28 ppt plus or minus 2 ppt)
Temperature	$26^{o}C \pm 1$
Light	Ambient laboratory illumination
Photoperiod	16-h light, 8-h dark
Test chamber type	Glass or plastic (250 – 400 mL capacity)
Test solution volume	200 mL per replicate
Test solution renewal	Daily
Age of test organism	7 days old
No. of test organisms	5 per replicate test chamber
Replicates	12 - 100% effluent, 12 - control water, 12 - dilution water
Source of food	Newly hatched (less than 24-h old) brine shrimp nauplii. Concentrate brine shrimp nauplii with a $\leq$ 150 um sieve mesh and rinse with seawater.
Feeding regime	About 150 brine shrimp nauplii per mysid twice per day (about three drops). Feed after test solution renewal.
Cleaning test chambers	Siphon excess food prior to test solution renewal.
Aeration	None, unless DO falls below 4.0 mg/l, then gently aerate all chambers.
Control/Dilution water	Laboratory control and Thames River water, samples, three separate collections: collected on day 0, day 2, and day 4.
Effluent	Composite sample collected at DSN 008 and Intake 01H. Three separate sample collections. Samples must be collected on Day 0, Day 2, and Day 4.
Test duration	*Acute*: 48 hours *Chronic*: 7 days
Endpoint	*Acute*: Survival *Chronic*: Survival, growth and egg development
Test acceptability criteria	*Acute:* 90% survival in 48 hours. *Chronic*: 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.
Mortality observations	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.
Physical- chemical measurements of solutions in test chambers	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.
Physical-chemical measurements of effluent sample and control sample.	The following parameters are measured in each sample of DSN 008 and Intake 01H and each sample collected from the Thames River: salinity, pH, ammonia as N, nitrate and nitrite nitrogen, total copper, total iron, total lead, total nickel, total zinc, total suspended solids, BOD, and bis (2-ethylhexyl) phthalate.
Reference toxicant	Sodium dodecyl sulfate with an acute endpoint (48 hours) and a chronic endpoint (7 days).

TABLE E: Testing Protocols for DSN 008 and Intake 01H for: *Cyprinodon variegatus* (48-hour acute and 7-day chronic tests)	
Testing procedure	*Acute*: DEP standard toxicity test procedures, except as modified below. *Chronic*: EPA 821-R-02-012, except as modified below.
Test type	Static with daily renewal.
Salinity	Effluent (DSN 008 and Intake 01H) water, dilution water (Thames River), and lab control water (28 ppt plus or minus 2 ppt)
Temperature	$26^{o}C \pm 1$
Light	Ambient laboratory illumination
Photoperiod	16-h light, 8-h dark
Test chamber type	Glass or plastic (1000 mL capacity)
Test solution volume	750 mL per replicate
Test solution renewal	Daily
Age of test organism	< 24 hours old
No. of test organisms	10 per replicate test chamber
Replicates	6 - 100% effluent, 6 - dilution water, 6 - lab control water
Source of food	Newly hatched (less than 24-h old) brine shrimp nauplii. Concentrate brine shrimp nauplii with a $\leq$ 150 um sieve mesh and rinse with seawater.
Feeding regime	Feed once a day concentrated brine shrimp 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.
Cleaning test chambers	Siphon excess food prior to test solution renewal.
Aeration	None, unless DO falls below 4.0 mg/l, then gently aerate all chambers
Control/Dilution water	Laboratory control and Thames River water, samples, three separate collections: collected on day 0, day 2, and day 4.
Effluent	Composite samples collected at DSN 008 and Intake 01H. Three separate sample collections. Samples must be collected on Day 0, Day 2, and Day 4.
Test duration	*Acute*: 48 hours *Chronic*: 7 days
Endpoint	*Acute*: Survival *Chronic*: Survival, growth
Test acceptability criteria	*Acute*: 90% survival in 48 hours *Chronic*: 80% survival (averaged) in controls after 7 days. A minimum average dry weight of 0.60 mg per organism in controls is required.
Mortality observations	Each test chamber is examined for mortality at 24-h intervals. Dead individuals are removed and if any individuals are missing they are noted.
Physical- chemical measurements of solutions in test chambers	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.
Physical-chemical measurements of effluent sample and control sample.	The following parameters are measured in each sample of DSN 008 and Intake 01H and each sample collected from the Thames River: salinity, pH, ammonia as N, nitrate and nitrite nitrogen, total copper, total iron, total lead, total nickel, total zinc, total suspended solids, BOD, and bis (2 ethylhexyl) phthalate.
Reference toxicant	Sodium dodecyl sulfate with an acute endpoint (48 hours) and a chronic endpoint (7 days).

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, CLOEC (Chronic Lowest Observable Effluent Concentration) and CNOEC (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. 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) The Permittee has initiated closure activities relative to the on-site wastewater treatment system (i.e., the "Biological Treatment System", "BTS") and has submitted documentation to the Department dated June 10, 2008 which describes those procedures that have and will be undertaken to accomplish closure and decommissioning of the BTS. The Permittee shall further accomplish closure and decommissioning of the BTS in accordance with the following:

(1) Within thirty days of issuance of this permit, the Permittee shall submit a revised closure and decommissioning plan consistent with the June 10, 2008 document. Such plan shall additionally include details concerning, at a minimum, the volume/inventory of decommissioning wastewaters in tank AE-02 or in any other location(s) at the site, a description of how the discharge of decommissioning wastewater will be accomplished, any and all sample results of the decommissioning wastewater, and a proposed schedule for discharging the decommissioning wastewater. Such plan shall be submitted for the review and written approval of the Commissioner;

(2) The discharge of any BTS decommissioning wastewater shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharge is restricted by, and shall be monitored in accordance with the table below:

Wastewater Description: **Decommissioning wastewaters**

Monitoring Location Description: **Base floor of Building 76, NE corner**

PARAMETER	UNITS	FLOW/TIME BASED MONITORING			INSTANTANEOUS MONITORING			Minimum Level Test[3]
		Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	
Ammonia (as N)	mg/l	14.6	See note 2	DC	NA	NR	NA	
Acetone	mg/l	0.26	See note 2	GSA	NA	NR	NA	
Ethyl acetate	mg/l	0.68	See note 2	GSA	NA	NR	NA	
Toluene	mg/l	0.031	See note 2	GSA	NA	NR	NA	*
n-Hexane	mg/l	0.016	See note 2	GSA	NA	NR	NA	*[4]
Methylene chloride	mg/l	0.473	See note 2	GSA	NA	NR	NA	
Tetrahydrofuran	mg/l	4.41	See note 2	GSA	NA	NR	NA	
Isopropyl ether	mg/l	4.41	See note 2	GSA	NA	NR	NA	
Acrylonitrile	mg/l	0.092	See note 2	GSA	NA	NR	NA	
BOD_5	mg/l	24.0	See note 2	DC	NA	NR	NA	
Bromoform	mg/l	---	See note 2	GSA	NA	NR	NA	
Bromomethane	mg/l	0.0002	See note 2	GSA	NA	NR	NA	*[4]
Chloroethane (Ethyl chloride)	mg/l	---	See note 2	GSA	NA	NR	NA	
Chromium, Total	mg/l	---	See note 2	DC	NA	NR	NA	*
Cyanide, Total	mg/l	0.086	See note 2	GSA	NA	NR	NA	*
Flow, Average and Maximum [1]	gpd	---	Continuous	Daily Flow	NA	NR	NA	
Flow Rate, Day of Sampling	gpd	---	See note 2	Daily Flow	NA	NR	NA	
Methyl acetate	mg/l	2.30	See note 2	GSA	NA	NR	NA	
Methyl tert butyl ether	mg/l	---	See note 2	GSA	NA	NR	NA	*
Nitrogen, Kjeldahl, Total	mg/l	---	See note 2	DC	NA	NR	NA	
Nitrogen, Nitrate, Total	mg/l	---	See note 2	DC	NA	NR	NA	
Nitrogen, Nitrite, Total	mg/l	---	See note 2	DC	NA	NR	NA	
pH, Continuous	S.U.	NA	NA	NA	6.0-9.0	Continuous	RDM	
pH, Day of Sampling	S.U.	NA	NA	NA	6.0-9.0	See note 2	RDS	
Solids, Total Suspended	mg/l	142	See note 2	DC	NA	NR	NA	
1,1,2,2-Tetrachloroethane	mg/l	0.022	See note 2	GSA	NA	NR	NA	
Zinc, Total	mg/l	2.10	See note 2	DC	NA	NR	NA	*

Wastewater Description: **Decommissioning wastewaters**								
Monitoring Location Description: **Base floor of Building 76, NE corner**								
PARAMETER	**UNITS**	**FLOW/TIME BASED MONITORING**			**INSTANTANEOUS MONITORING**			**Minimum Level Test[3]**
		Maximum Daily Limit	Sample/ Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency	Sample Type or measurement to be reported	

Footnotes:

[1] 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.

[2] "Sample Frequency": Based on information provided by the Permittee, it is estimated that this discharge shall only occur for less than one week. Therefore, at a minimum, the wastewater shall be sampled for these parameters at least once during the week the discharge is occurring. "Reporting Frequency": The results of chemical analyses shall not be entered on a DMR, but shall be summarized and submitted with supporting lab results to the individual identified in paragraph 10(J). This information shall be received by that individual by the last day of the month following the month in which the samples are collected.

[3] The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in this table. Analyses for these parameters must include check standards within ten per cent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level:

Bromomethane	5.0 ug/L
Chloroform	5.0 ug/L
Chromium	5.0 ug/L
Cyanide	10.0 ug/L
Methyl Tertiary Butyl Ether	5.0 ug/L
n-Hexane	20 ug/L
Toluene	10 ug/L
Zinc	10 ug/L

[4] Permit limits for this substance are below the minimum quantification level. Compliance with these permit limits shall be achieved when the concentration of the substance is less than the minimum quantification level specified above.

Remarks:

DC = Daily Composite; GSA = Grab Sample Average

(3) The Permittee shall obtain any and all permits, permit modifications, licenses, or authorizations that may be necessary to perform the work and to permit discharges following closure;

(4) Within 30 days following final discharge of all decommissioning wastewater, the Permittee shall submit documentation for the review and written approval of the Commissioner certifying that all decommissioning wastewater has been discharged in accordance with the approved closure plan. Within 30 days following completion of all closure activities, the Permittee shall submit documentation for the review and written approval of the Commissioner certifying that all closure activities have been performed in accordance with the approved closure plan.

(B) The Permittee shall conduct a study to assess the effectiveness of its saltwater intake system on the fisheries resources of the Thames River and propose remedial actions to minimize any impact, if required.

(1) On or before 60 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, the 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 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 90 days after the date of permit issuance, the Permittee shall submit for the Commissioner's review and written approval a scope of study for performing a one year impingement study and a two year entrainment monitoring and evaluation of the intake structure. The scope of study shall provide all of the necessary details associated with the design and include a schedule that identifies the study initiation and completion dates.

(3) The Permittee shall perform the actions in the approved scope of study described in paragraph 10(B)(2) above in accordance with the approved schedule(s), but in no event shall the actions be completed by later than 12 months after the date of approval of such scope of study.

(4) Within 18 months after approval of the scope of study described in paragraph 10(B)(2) above, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report on the findings of the impingement study and evaluation conducted. If such findings warrant modification(s) to the intake practices or to the design of the intake structure, the report shall additionally describe any and all recommendations to accomplish these modifications. Such recommendations shall include, but not be limited to, modification of the fish return system. The report shall also include a detailed schedule identifying when all appropriate recommendations will be implemented at the facility.

(5) Within 30 months after approval of the scope of study described in paragraph 10(B)(2) above, the Permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report on the findings of the entrainment monitoring and evaluation conducted. If such findings warrant modification(s) to the intake practices or to the design of the intake structure, the report shall additionally describe any and all recommendations to accomplish these modifications. Such recommendations shall include, but not be limited to, modification of the fish return system. The report shall also include a detailed schedule identifying when all appropriate recommendations will be implemented at the facility.

(C) The Permittee shall achieve compliance with the effluent limitations in Section 5, Table A (for bis (2-ethylhexyl) phthalate) as soon as possible but in no event later than 365 days after the date of issuance of this permit in accordance with the following:

(1) On or before 30 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 to achieve compliance with Section 5 limitations 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 90 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 compliance with the limitations in Section 5 of this permit. Such report shall:

(a) evaluate alternative actions to achieve compliance with Section 5 limits 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.

(D) The Permittee shall submit to the Commissioner quarterly status reports beginning sixty days after the date of approval of the reports referenced in Sections 10(A)(1), 10(B)(2), and 10(C)(2) above. Status reports shall include, but not be limited to, a summary of all effluent monitoring data collected by the Permittee during the previous 90 day period and a detailed description of progress made by the Permittee in performing actions required by this section of the permit in accordance with the approved 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 per the applicable sections.

(E) The Permittee shall perform the approved actions in accordance with the approved schedule. Within fifteen days after completing such actions, the Permittee shall certify to the Commissioner in writing that the actions have been completed as approved.

(F) 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 form. 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.

(G) 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 legal Connecticut or federal holiday, shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or legal Connecticut or federal holiday.

(H) 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 that 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.

(I) 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.

(J) 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 and Enforcement Division
79 Elm Street
Hartford, CT 06106-5127

This permit is hereby issued on July 29, 2008.

/s/ GINA MCCARTHY
GINA MCCARTHY
Commissioner

GM/CMG

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: **Pfizer Inc.** PAMS Company ID: **22090**

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #: **CT0000957** APPLICATION #: **199600184** FACILITY ID. **059-003**

Mailing Address:						**Location Address:**					
Street:	*Eastern Point Road, MS 4157*					**Street:**	*445 Eastern Point Road*				
City:	*Groton*	**ST:**	*CT*	**Zip:**	*06340*	**City:**	*same*	**ST:**	*CT*	**Zip:**	*same*
Contact Name:	*Jim Constantine*					**DMR Contact**	*Jim Constantine*				
Phone No.:	*(860) 686-2595*					**Phone No.:**	*(860) 686-2595*				

PERMIT INFORMATION

DURATION *5 YEAR* ✓ 10 YEAR __ 30 YEAR ____

TYPE New __ *Reissuance* ✓ Modification ___

CATEGORIZATION *POINT* (✓) NON-POINT ( ) GIS # __

NPDES (✓) PRETREAT () GROUND WATER(UIC) ( ) GROUND WATER (OTHER) ( )

NPDES MAJOR (MA) ✓
NPDES SIGNIFICANT MINOR or PRETREAT SIU (SI) __
NPDES or PRETREATMENT MINOR (MI) __

PRETREAT SIGNIFICANT INDUS USER (SIU) ___
PRETREAT CATEGORICAL (CIU) ___
Note: If it's a CIU then check off SIU

POLLUTION PREVENTION MANDATE __ ENVIRONMENTAL EQUITY ISSUE ____

COMPLIANCE ISSUES

COMPLIANCE SCHEDULE **YES** ✓ NO __ (If yes check off what it is in relation to.)

POLLUTION PREVENTION ___ **TREATMENT REQUIREMENT** ✓ WATER CONSERVATION

WATER QUALITY REQUIREMENT __ REMEDIATION __

OTHER Y 1) ***Complete closure of the Biological Treatment System;*** 2) ***Impingement/Entrainment study related to the salt water intake structure; 3) Implement actions to achieve effluent limitations.***

IS THE PERMITTEE SUBJECT TO A PENDING ENFORCEMENT ACTION? NO ✓ **YES** __

OWNERSHIP CODE

Private ✓ Federal __ State __ Municipal (town only) __ Other public ____

DEP STAFF ENGINEERS *Ken Major and Christine Gleason*

PERMIT FEES

Application Filing Fee: *$700. Paid on 1/30/1996*
Application Processing Fee: *$61,362.50. Paid on 8/17/07*

Annual Fee Calculation:

Discharge Code	*Wastewater Category*	*Maximum gpd*	*DSN*	*Annual Fee*
102000d	*Non-contact cooling water*	*>10,000,000*	*008*	*8175*
121000b	*Contact cooling water*	*>50,000*	*008*	*2040*
1060000	*Water production wastewater*	*---*	*008*	*525*
1170000	*Blowdown from heating and cooling*	*---*	*008*	*4087.50*
1080000	*Stormwater*	*---*	*008*	*2662.50*
TOTAL				***$17,490.00***

FOR NPDES DISCHARGES

Drainage basin Code: ***3000*** Present/Future Water Quality Standard: ***SC/SB***

INFORMATION OF NOTE CONCERNING THE SITE

Based on information provided by Pfizer in its application, the site is located within an area identified as a habitat for endangered, threatened, or special concern species. Specifically, Pfizer has indicated that a State-threatened species (i.e., Atlantic sturgeon) is known to exist in the vicinity and two Federally-endangered species of turtles (i.e., Loggerhead turtle and Kemps-Riddley turtle) are known to exist at the mouth of the Thames River. With respect to the Atlantic sturgeon, the record is a historic one and comments on this fish in the Thames River are no longer provided. With respect to the endangered turtles, these are located in an area greater than a half a mile downstream the site.

NPDES PERMIT HISTORY

ISSUANCE: Pfizer's NPDES permit, CT0000957, issued on June 27, 1995 and expired on July 31, 1996. That permit was issued for only one year based on comments from CFE, a party to the hearing, and included the following discharge points:

DSN	PERMITTED AVERAGE MONTHLY FLOW	WASTESTREAMS	TREATMENT TYPE	DISCHARGE/ INTERNAL POINT
Intake	---	---	---	---
001	5,000,000	Cooling water, process waterwater, and stormwater runoff	---	Thames River
002	5,000,000	Cooling water, process wastewater, and stormwater	---	Thames River
003	5,000,000	Cooling water, process wastewater, and stormwater	---	Thames River
004	3,000,000	Non-contact cooling water	---	Thames River
005	16,000,000	Non-contact cooling water	---	Thames River
007	NA	Emergency discharge point for DSN 008	---	Thames River

DSN	PERMITTED AVERAGE MONTHLY FLOW	WASTESTREAMS	TREATMENT TYPE	DISCHARGE/ INTERNAL POINT
008	70,000,000	Process wastewater, non-contact cooling water, cooling tower blowdown water, stormwater	Biological treatment	Thames River
008A	75,000	Partially complexed cyanide wastewater	Cyanide destruct	Tank CR2B
008B	15,000	Carbon furnace scrubber wastewaters	---	Carbon Furnace Scrubber

MODIFICATIONS: Major modifications to CT0000957 have occurred since issuance. A summary of these modifications is as follows:

- *Modification #1* July 20, 1995: The scope of this modification includes authorization to redirect the pyrolyzer wastewaters to the biological treatment system and related issues, including, but not limited to: recordkeeping associated with the pyrolyzer operation, monitoring of the BTS influent and effluent, and analyzing the treatment plant effluent for whole effluent toxicity.

- *Modification #2* February 2, 1999: The scope of this modification includes: elimination of the process wastewater from DSN 001, changes "cooling water" to "non-contact cooling water" for DSN 001; eliminates "cooling water" and "process wastewater" from the description of DSN 003, and provides pH limitations that are representative of local stormwater discharged through the outfalls.

- *Modification #3* June 14, 1999: The scope of this modification includes the elimination of DSNs 002 and 003, as each only discharges stormwater.

- *Modification #4* August 9, 1999: The scope of this modification includes the elimination of DSN 001 as it only discharges stormwater.

- *Modification #5* November 15, 2000: The scope of this modification includes a notation that DSN 008B is eliminated and clarifies the effluent monitoring requirements for DSN 008A.

COMPLIANCE STEPS: The NPDES permit also includes several compliance steps found in paragraphs 9 through 19 of the permit. A summary of the status of the compliance steps is found on Attachment 1.

RENEWAL: Pfizer submitted a timely application for renewal on January 30, 1996.

OUTSTANDING ENFORCEMENT

On June 27, 1995, Consent Order WC 5181 was issued to Pfizer, Inc. WC 5181 required Pfizer to upgrade its wastewater treatment system. This work was performed in 1995/1996. This consent order additionally recognizes that Pfizer cannot properly analyze its salt water discharges for COD, as the high levels of chloride present in the salt water interfere with the COD testing procedure. However, as Pfizer is no longer engaged in pharmaceutical manufacturing operations, there is no specific requirement that COD testing be conducted on the remaining discharges in this permit. Therefore, it is recommended that the consent order be closed.

RECEIVING WATER USES

This segment of the Thames River is described as 3000-E. The designated uses for this segment are marine fishing, aquatic life, and wildlife.

NATURE OF THE BUSINESS GENERATING THE DISCHARGES

Until January 2008, Pfizer was in the business of pharmaceutical research and manufacturing. As manufacturing operations have now ceased, Pfizer indicates that its present SIC code is 8731 (Commercial Physical and Biological Research).

FACILITY DESCRIPTION

Pfizer Inc. (i.e., formerly Pfizer Global Manufacturing, or PGM, now known at the "West Campus") is located on a 53-acre parcel in a mainly commercial/industrial area on the west side of Eastern Point Road on the Thames River in Groton. [See Attachments 2, 3, and 4 for site detail]. Activities at the site had consisted of pharmaceutical research and manufacturing operations; manufacturing operations ceased in January 2008 and the discharges associated with research operations on the West Campus (i.e., Buildings 100, 126, and 185) are currently being discharged to the City of Groton POTW via a temporary authorization (TA# 0000171). The remaining discharges from West Campus include DSN 008: utilities non-contact cooling water, utilities wastewater, utilities contact cooling water and chilled water, and stormwater, which are being discharged to DSN 008, and intake screen filter backwash, which is being discharged to DSN 009.

Pfizer withdraws water from the Thames River for use in several operations at the site, but predominantly for non-contact cooling water for utilities-related activities. In 2006, Pfizer estimates that it withdrew, on average, approximately 20 MGD of Thames River water for cooling and non-contact cooling water purposes. [Pfizer has a diversion (registration number 3000-018-IND-RI) which allows a maximum withdrawal of 182.9 MGD]. The water is drawn through an intake structure located in Building 109 and then conveyed to the appropriate area on-site, as necessary. A preliminary evaluation of Pfizer's intake structure has been conducted by DEP's Inland Fisheries Division to determine any impacts to the Thames River. Based on this evaluation, no immediate action is necessary. However, additional information needs to be furnished by Pfizer in order to complete the evaluation.

There have been historic concerns regarding coliform levels in Pfizer's discharges. In 1996, Pfizer performed an investigation of the sources, concentrations, and types of coliform bacteria present in its discharges, as required by paragraph 14 of its NPDES permit. Results of that investigation propose the implementation of certain remedial actions to address coliform bacteria in the subject discharges, including the need to continue monitoring the effectiveness of the disinfection system. It is proposed that Pfizer continue/resume this testing.

PROCESS AND TREATMENT DESCRIPTION (by DSN)

DSN	WASTEWATERS	TYPE	TREATMENT
008	Utilities wastewater, utilities contact cooling water and chilled water, and stormwater	Continuous	Equalization & Neutralization
009	Intake structure screen backwash	Batch	None

Utilities wastewater, utilities contact cooling water and chilled water and stormwater collect in the West Campus equalization basin, are pH adjusted, and are then discharged through DSN 008 (via a diffuser).

EFFLUENT QUALITY DATA

See Attachment 5 for a summary of the last five years of DMR data.

EFFLUENT VIOLATIONS

Pfizer's discharge monitoring reports (DMRs) during the last five years were reviewed. One effluent violation was noted during this timeframe:

MONTH/YEAR	DSN	PARAMETER VIOLATED	TYPE OF LIMIT	PERMITTED LIMIT	EXCEEDENCE
February 17, 2008	005	Temperature	Continuous	95 °F	107 °F (< 15 min)
REASON: ☒ Equipment Related ☐ Operator Error ☐ Other					
Pfizer indicates that a City of Groton power failure resulted in a ramp up of Pfizer's co-generation units. With the increase in electrical demand, more steam had to be condensed, and the cooling water flow (salt water from the Thames) was not adequate to keep up with the change. Approximately 75,000 gallons of saltwater was discharged during the incident.					

RESOURCES USED TO DRAFT PERMIT

__	Federal Effluent Limitation Guideline
✓	Performance Standards
__	Federal Development Document
__	Treatability Manual
✓	Department File Information
✓	Connecticut Water Quality Standards
__	Anti-degradation Policy
✓	Coastal Management Consistency Review Form
__	Other - Explain

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

__	Best Available Technology (BAT)
__	Best Practicable Technology (BPT)
__	Best Conventional Technology (BCT)
✓	Best Professional Judgment (See Comments)
✓	Case-by-Case Determination (See Comments)
✓	In order to meet in-stream water quality (See Comments)

COMMENTS: See below for an explanation.

BASIS FOR DSN 008 LIMITS AND CONDITIONS:

Best professional judgment was used to develop the permit limits for DSN 008 with the exception of bis (2-ethylhexyl) phthalate. The composition of the DSN 008 discharge is predominantly non-contact cooling water and to a lesser extent utilities wastewaters (boiler and cooling tower discharges, etc.). Monitoring parameters consistent with these wastestreams (i.e., conventional pollutants and metals) are included. The frequency of monitoring varies in accordance with the potential for each of the parameters to be in the discharge.

The need for inclusion of water quality based discharge limitations in this permit was evaluated consistent with Connecticut Water Quality Standards and criteria, pursuant to 40 CFR 122.44(d). Each parameter was evaluated for consistency with the available aquatic life criteria (acute and chronic) and human health (fish consumption only) criteria, considering the zone of influence allocated to the facility where appropriate. The statistical procedures outlined in the EPA Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001) were employed to calculate the need for such limits. Comparison of monitoring data and its inherent variability with the calculated water quality based limits indicates a statistical probability of exceeding such limits. Water quality based limits were included in the permit for the following: bis (2-ethylhexyl) phthalate. See Attachment 6 for a summary.

n addition to the above: 1) Monitoring for Fecal coliform and *E. coli* are proposed to be added to address issues raised by the fe
:oliform study conducted by Pfizer; 2) Long-term nitrogen limits are being included relative to the Department's TMDL for dissolved
)xygen for Long Island Sound. The target values proposed represent an annual 10% reduction in Pfizer's total nitrogen values.

BASIS FOR DSN 009 LIMITS AND CONDITIONS:

Best professional judgment was used to develop the permit limits for DSN 009. This is a newly permitted discharge, so there are no existing limits. This discharge was analyzed in 1996 in accordance with the applicable Subpart O parameters; no parameters of concern were detected. No DMR or other recent data exist for this discharge. Therefore, monitoring for this discharge will be for total suspended solids and flow, only, consistent with other like discharges.

BASIS FOR INTAKE 01H LIMITS AND CONDITIONS:

Best professional judgment was used to develop the permit limits for Intake 01H. pH, temperature, and toxicity are being included for purposes of consistency with other like discharges.

Additional conditions for this discharge includes the following: 1) Debris collected on the intake racks shall not be re-introduced into the Thames River; 2) In the event of unusual incidents of large numbers of schooling fish being impinged over a short period of time, the Department of Environmental Protection, Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division shall be notified immediately and a written report of the incident shall be filed within 5 days. The report shall include the species, size, approximate numbers, time of occurrence, operating mode of the plant at the time of the incident, and any possible reasons for the occurrence.

COMPLIANCE STEPS:

- **CLOSE THE BIOLOGICAL TREATMENT SYSTEM (Section 10A)**: The Permittee is in the process of closing the Biological Treatment System (BTS) on-site. The compliance schedule in the permit requires that the Permittee develop and follow a closure plan for the review and approval of the Commissioner in order to complete this activity. In addition, Section 10A set limits on the discharge of the decommissioning wastewaters associated with the closure. The monitoring parameters include those compounds that have historically been detected in either the influent or the effluent. The limits associated with these parameters are those that were proposed for the BTS effluent in the draft permit are based on either ELGs or water-quality-based limits. [See Attachment 7]. Finally, the Permittee will be required to submit documentation for the review and written approval of the Commissioner following both the removal of all decommissioning wastewaters and completion of all closure activities.
- **INVESTIGATE THE INTAKE STRUCTURE (Section 10B)**: A study is recommended to be performed on Pfizer's salt water intake structure in order to determine if any issues or concerns exist with it. The compliance schedule in the permit requires that the Permittee investigate its intake structure and, perform any remedial actions with respect to the intake structure, as necessary.
- **ACHIEVE EFFLUENT LIMITATIONS (Section 10C):** The Permittee is not able to meet the effluent limitations for bis (2-ethylhexyl) phthalate for DSN 008. [See Attachment 8]. The compliance schedule in the permit requires that the Permittee develop and implement a plan to achieve these limits.