

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. § 1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§ 26-53),

**South Essex Sewerage District (SESD)**

is authorized to discharge from the facility located at:

**South Essex Wastewater Treatment Facility  
50 Fort Avenue  
Salem, MA 01970**

to receiving water named: **Salem Sound (MA-93-25)** in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

*Please note that any changes from the 2008 Draft Permit are italicized in this partially revised draft permit.*

The municipalities of Beverly, Danvers, Marblehead, Middleton, Peabody and Salem are co-permittees for Part I.C., Operation and Maintenance and Part I.D., Unauthorized Discharges from the Sewer System *which include conditions regarding the operation and maintenance of the portion of the collection systems owned and operated by the individual municipalities. The Municipalities are also responsible for the requirements found in Part I.G. State Permit Conditions.* The responsible municipal departments are:

**City of Beverly  
c/o City Engineer  
Beverly City Hall  
191 Cabot Street  
Beverly, MA 01915**

**Town of Danvers  
c/o Town Engineer  
Public Works Engineering Division  
1 Burroughs Street  
Danvers, MA 01923**

**Town of Marblehead  
c/o Superintendent  
Water/Sewer Department  
P.O. Box 1108  
Marblehead, MA 01945**

**Town of Middleton  
c/o Superintendent of  
Public Works  
195 North Main Street  
Middleton, MA 01949**

**City of Peabody  
c/o Mayor  
24 Lowell Street  
Peabody, MA 01960**

**City of Salem  
c/o City Engineer  
120 Washington Street, 4<sup>th</sup> Fl  
Salem, MA 01970**

This permit will become effective on the *first day of the calendar month immediately following sixty days after signature.*

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

This permit supersedes the permit issued on February 9, 2001 and effective on October 10, 2001.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, **Attachment A** (*Marine Acute Toxicity Test Procedure and Protocol, July 2012, 10 pages*); **Attachment B** (*Marine Chronic Toxicity Test Procedure and Protocol, September 1996, 11 pages*); **Attachment C** (*NPDES Whole Effluent Toxicity Testing, Monitoring and Reporting, March 2007, 8 pages*); **Attachment D** (*Reassessment of Technically Based Industrial Discharge Limits, 9 pages*), **Attachment E** (*NPDES Permit Requirement for Industrial Pretreatment Annual Report, 2 pages*) and Part II including General Conditions and Definitions.

Signed this     day of

\_\_\_\_\_  
*Ken Moraff, Acting Director*  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

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*David R. Ferris, Director*  
*Massachusetts Wastewater Management Program*  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

## PART I

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 001, treated effluent to Salem Sound. The discharge shall be limited and monitored by the permittee as specified below.								
Effluent Characteristic	Effluent Limits						Monitoring Requirements	
	Mass Limits			Concentration Limits				
	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type <sup>3</sup>
Flow <sup>2</sup>	***	***	***	29.7 MGD	***	Report MGD	Continuous	Recorder
Flow <sup>2</sup>	***	***	***	Report MGD	***	***	Continuous	Recorder
CBOD <sub>5</sub> <sup>4</sup>	6,194 lbs/day	9,911 lbs/day	Report	25 mg/l	40mg/l	Report mg/l	1/Day	24-Hour Composite <sup>5</sup>
TSS <sup>4</sup>	7,433 lbs/day	11,150 lbs/day	Report	30 mg/l	45 mg/l	Report mg/l	1/Day	24-Hour Composite <sup>5</sup>
pH <sup>1</sup>	6.5 - 8.5 SU SEE PERMIT PAGE 5 OF 12, PARAGRAPH I.A.2.b.						1/Day	Grab
Fecal Coliform Bacteria <sup>1,6</sup>	***	***	***	88 CFU/100 ml	***	400 CFU/100 ml	2/Day	Grab
Enterococci <sup>1,6</sup>	***	***	***	35 Colonies/100 ml	***	276 Colonies/100 ml	2/Day	Grab
Total Residual Chlorine <sup>1,6,7,8,9</sup>	***	***	***	0.180 mg/l	***	0.208 mg/l	2/Day	Grab
Total Nitrate/Nitrite	***	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Total Ammonia Nitrogen, as N	***	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Total Kjeldahl Nitrogen	***	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Whole Effluent Toxicity <sup>10,12,13,14,15,16</sup>	Acute LC <sub>50</sub> ≥ 100%						4/Year	24-Hour Composite <sup>5</sup>
Whole Effluent Toxicity <sup>10,11,13,14,15,16</sup>	Chronic Report NOEC						4/Year	24-Hour Composite <sup>5</sup>

## Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.
3. Effluent samples shall be taken after dechlorination and prior to discharge to the effluent pipe for the parameters: pH, TRC, fecal coliform and enterococci. Sampling for all other parameters can be taken prior to chlorination. All sampling shall be representative of the effluent that is discharged through Outfall 001 to Salem Sound. A routine sampling program shall be developed in which samples are taken at the same location, same time and same day(s) of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA. In addition, all samples shall be analyzed using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.
4. Sampling required for influent and effluent once per day.
5. A 24-hour composite sample will consist of at least twenty-four (24) grab samples, flow proportional, taken for a consecutive 24-hour period (e.g. 0700 Monday - 0700 Tuesday).
6. Fecal coliform bacteria, enterococci and total residual chlorine limits and monitoring requirements are in effect year round. As enterococci is a new requirement, the permittee shall monitor-only for the first year of the permit without an effluent limit. After one year the effluent limits for enterococci apply. The average monthly limits *are* expressed as a geometric means. Samples for fecal coliform bacteria and enterococci shall be taken at the same time as a total residual chlorine sample.  
  
*Fecal coliform discharges shall not exceed a monthly geometric mean of 88 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum and no more than 10 percent of the fecal coliform samples in any calendar month shall exceed 260 cfu per 100 ml. The permittee shall report the percent of samples exceeding 260 cfu per 100 ml on its discharge monitoring report and submit the sample results with the discharge monitoring report.*
7. The minimum detection level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, 20<sup>th</sup> Edition, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. Samples of 50 ug/l or less shall be reported as zero on the discharge monitoring report.
8. For every day that more than two samples are analyzed, the monthly DMR shall include an attachment documenting the individual grab sample results for that day, the date and time of each sample, the analytical method, and a summary of any operational modifications implemented in response to the sample results. This requirement applies to all samples taken, including screening level and process control samples. All test results utilizing an EPA approved analytical method shall be used in the calculation and reporting of the monthly average and maximum daily data

submitted on the DMR (see Part II. Section D.1.d(2)).

9. Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.
10. The permittee shall conduct chronic and acute toxicity tests four (4) times per year using Arbacia and Menidia beryllina, respectively. Toxicity test samples shall be collected during the second week of the months of February, April, June and August. The test results shall be submitted by the last day of the month following the completion of the test. The results are due by **March 31, May 31, July 31 and September 30**, respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachments A and B of this permit

Test Dates Second Week of	Submit Results By:	Test Species	Acute Limit LC <sub>50</sub>	Chronic
February	March 31st	<u>Arbacia</u>	100%	Report
April	May 31 <sup>st</sup>	<u>Menidia beryllina</u>		NOEC
June	July 31st			
August	September 30 <sup>th</sup>	See Attachments A & B		

11. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
12. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear-dose relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect.
13. The permittee must use the receiving water as diluent in WET testing unless authorized after following the procedures in Attachment C, #17.
14. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A** (*Marine Acute Toxicity Test Procedure and Protocol, July 2012, 10 pages*) **Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance, which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs), which may also be found as Attachment C to this permit or on the EPA Region I web site at: <http://www.epa.gov/Region1/enforcementandassistance/dmr.html>. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any

*modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.*

15. *For each whole effluent toxicity test, the permittee shall report on the appropriate discharge monitoring report, (DMR), the concentrations of the hardness, ammonia nitrogen as nitrogen, total recoverable cadmium, copper, lead, nickel, and zinc found in the 100 percent effluent sample. All these aforementioned chemical parameters shall be determined to at least the minimum quantification level shown in **Attachment A**. Also the permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.*
16. The permit shall be modified, or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State Water Quality Criterion. Results from these tests are considered “new information” and the permit may be modified pursuant to 40 CFR 122.6(a)(2).

Part I.A.2.

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
  - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 and not more than 0.2 standard units outside of the natural background. There shall be no change from natural background conditions that would impair any use assigned to this Class.
  - c. The discharge shall not cause objectionable discoloration of the receiving waters.
  - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
  - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both CBOD<sub>5</sub> and TSS. The percent removal shall be based on monthly average values.
  - f. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
  - g. The results of sampling for any parameter above its required frequency must also be reported.
3. All POTWs must provide adequate notice to the Director of the following:
- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
  - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - c. For purposes of this paragraph, adequate notice shall include information on:

- (1) the quantity and quality of effluent introduced into the POTW; and
- (2) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

4. Prohibitions Concerning Interference and Pass Through:

- a. Pollutants introduced into a POTW by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

5. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

6. Numerical Effluent Limitations for Toxicants

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

**B. INDUSTRIAL USERS AND PRETREATMENT PROGRAM**

1. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within **120 days of the effective date of this permit**, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment D) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development

Guidance (July 2004).

2. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. Carry out inspection, surveillance, and monitoring procedures which will determine independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
3. The permittee shall provide the EPA and MassDEP with an annual report describing the permittee's pretreatment program activities for the twelve (12) month period ending 60 days prior to the due date in accordance with 403.12(i). The annual report shall be consistent with the format described in Attachment D of this permit and shall be submitted no later than **March 1** of each year.
4. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
5. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.
6. The permittee must modify its pretreatment program, if necessary, to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.B.3.b.
7. On October 14, 2005 EPA published in the Federal Register final changes to the General

Pretreatment Regulations. The final “Pretreatment Streamlining Rule” is designed to reduce the burden to industrial users and provide regulatory flexibility in technical and administrative requirements of industrial users and POTWs. Within 60 days of the effective date of this permit, the permittee must submit to EPA all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent that the POTW legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

### **C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM**

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and the following terms and conditions. *The permittee and co-permittees are required to complete the following activities for the collection system which it owns:*

1. **Maintenance Staff**

The permittee and co-permittees shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. *Provisions to meet this requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.*

2. **Preventive Maintenance Program**

The permittee and co-permittees shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. *Plans and programs to meet this requirement shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.*

3. **Infiltration/Inflow**

The permittee and co-permittees shall *control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant’s effluent limitations. Plans and programs to control I/I shall be described in the Collection System O & M Plan required pursuant to Section C.5. below.*

4. **Collection System Mapping**

***Within 30 months of the effective date of this permit, the permittee and co-permittees shall prepare a map of the sewer collection system it owns (see page 1 of this permit for the effective date). The map shall be on a street map of the community, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up to date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:***

- a. All sanitary sewer lines and related manholes;*
- b. All combined sewer lines, related manholes, and catch basins;*



- c. *All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);*
- d. *All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;*
- e. *All pump stations and force mains;*
- f. *The wastewater treatment facility(ies);*
- g. *All surface waters (labeled);*
- h. *Other major appurtenances such as inverted siphons and air release valves;*
- i. *A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;*
- j. *The scale and a north arrow; and*
- k. *The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.*

5. *Collection System Operation and Maintenance Plan*

*The permittee and co-permittees shall develop and implement a Collection System Operation and Maintenance Plan.*

- a. ***Within six (6) months of the effective date of the permit, the permittee shall submit to EPA and MassDEP***
  - (1) *A description of the collection system management goals, staffing, information management, and legal authorities;*
  - (2) *A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and*
  - (3) *A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.8. below.*
- b. ***The full Collection System O & M Plan shall be submitted and implemented to EPA and MassDEP within twenty four (24) months from the effective date of this permit. The Plan shall include:***
  - (1) *The required submittal from paragraph 5.a. above, updated to reflect current information;*
  - (2) *A preventive maintenance and monitoring program for the collection system;*
  - (3) *Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;*
  - (4) *Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;*
  - (5) *Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;*
  - (6) *A description of the permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that*

*focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and*

- (7) An educational public outreach program for all aspects of I/I control, particularly private inflow.*
- (8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.*

#### 6. *Annual Reporting Requirement*

*The permittee and co-permittees shall submit a summary report of activities related to the implementation of its Collection System O & M Plan during the previous calendar year. The report shall be submitted to EPA and MassDEP **annually by March 31**. The summary report shall, at a minimum, include:*

- a. A description of the staffing levels maintained during the year;*
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;*
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;*
- d. A map with areas identified for investigation/action in the coming year;*
- e. If treatment plant flow has reached 80% of the design flow [23.77 mgd] or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and*
- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.*

#### 7. *Alternate Power Source*

*In order to maintain compliance with the terms and conditions of this permit, the permittee and co-permittees shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates.*

### **D. UNAUTHORIZED DISCHARGES**

The permittee and co-permittees are authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall(s) listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements of this permit (**Twenty-four hour reporting**).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes DEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <http://www.mass.gov/eea/agencies/massdep/service/approvals/sanitary-sewer-overflow-bypass-backup-notification.html>.

**E. SLUDGE CONDITIONS**

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices.
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
  - c. Sewage sludge incineration in a sludge-only incinerator
4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting
  - a. Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.
6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year
 

i)	less than 290	1/ year
ii)	290 to less than 1500	1 /quarter
iii)	1500 to less than 15000	6 /year
iv)	15000 +	1 /month
7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. The permittee shall submit an annual report containing the information specified in the guidance **by February 19**. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:
  - i. Name and address of contractor responsible for sludge disposal
  - ii. Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

## **F. MONITORING AND REPORTING**

*The permittee shall submit monitoring data and all other NPDES permit required reports to EPA electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:*

### **1. Submittal of Reports Using NetDMR**

*NetDMR is accessed from: <http://www.epa.gov/netdmr>. DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. A permittee submitting reports using NetDMR is no longer required to submit hard copies of DMRs or other reports to EPA and no longer required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports, Toxicity Test Results and Nutrient Optimization Reports) to MassDEP until further notice from MassDEP.*

### **2. Submittal of Reports in Hard Copy Form**

*While we do not anticipate the need for the permittee to submit hard copies of reports to EPA, any hard copies that are submitted to EPA shall be submitted to the Director at the following address:*

**U.S. Environmental Protection Agency  
Water Technical Unit (OES04-SMR)  
5 Post Office Square - Suite 100  
Boston, MA 02109-3912**

*Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following address:*

**Massachusetts Department of Environmental Protection  
Bureau of Resource Protection  
Northeast Regional Office  
205B Lowell Street  
Wilmington, MA 01887**

*Toxicity test reports only shall also be submitted to the State at the following address:*

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

*Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to MassDEP.*

***Within twenty-four hours** of a permit excursion for fecal coliform or if a plant failure occurs, the permittee shall notify:*

***Division of Marine Fisheries  
Shellfish Management Program  
30 Emerson Avenue  
Gloucester, MA 01930  
via telephone (978)282-0308 extension 160  
or via email at [Shellfish.Newburyport@state.ma.us](mailto:Shellfish.Newburyport@state.ma.us).***

## **G. STATE PERMIT CONDITIONS**

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43.

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

**ATTACHMENT A**

**MARINE ACUTE  
TOXICITY TEST PROCEDURE AND PROTOCOL**

**I. GENERAL REQUIREMENTS**

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

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

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

**II. METHODS**

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

<http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods>

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

**III. SAMPLE COLLECTION**

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine<sup>1</sup> (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

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<sup>1</sup> For this protocol, total residual chlorine is synonymous with total residual oxidants.  
(July 2012)

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6° C.

#### **IV. DILUTION WATER**

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

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

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

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

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

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

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

Director  
Office of Ecosystem Protection (CAA)  
U.S. Environmental Protection Agency, Region 1  
Five Post Office Square, Suite 100  
Mail Code OEP06-5  
Boston, MA 02109-3912

and

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

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

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

## **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:



**EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST<sup>1</sup>**

---

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt $\pm$ 10 percent for all dilutions by adding dry ocean salts
3. Temperature (°C)	20°C $\pm$ 1°C or 25°C $\pm$ 1°C, temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, <u><math>\leq</math> 24 hours age range</u>
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> naupli while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	$\geq$ 0.5
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted effluent concentration (%)

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

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Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

**EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST<sup>1</sup>**

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1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt $\pm$ 10 % by adding dry ocean salts
3. Temperature	20°C $\pm$ 1°C or 25°C $\pm$ 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated <u>Artemia</u> nauplii while holding prior to initiating the test
13. Aeration <sup>2</sup>	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	$\geq 0.5$
16. Number of dilutions <sup>3</sup>	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

---

Footnotes:

- <sup>1</sup> Adapted from EPA 821-R-02-012.
- <sup>2</sup> If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- <sup>3</sup> When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

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

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

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

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

### V.2.a. Use of Concurrent Reference Toxicity Testing

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

## **VI. CHEMICAL ANALYSIS**

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

---

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	<u>Minimum Level for effluent<sup>*1</sup> (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine <sup>*2</sup>	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
<u>Total Metals</u>			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

---

### Superscript:

<sup>\*1</sup> These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

<sup>\*2</sup> Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

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

## **VII. TOXICITY TEST DATA ANALYSIS**

### LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Kärber
- Trimmed Spearman-Kärber
- Graphical

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

### No Observed Acute Effect Level (NOAEL)

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

## **VIII. TOXICITY TEST REPORTING**

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
  - Facility name
  - NPDES permit number
  - Outfall number
  - Sample type
  - Sampling method
  - Effluent TRC concentration
  - Dilution water used
  - Receiving water name and sampling location
  - Test type and species
  - Test start date
  - Effluent concentrations tested (%) and permit limit concentration
  - Applicable reference toxicity test date and whether acceptable or not
  - Age, age range and source of test organisms used for testing
  - Results of TAC review for all applicable controls
  - Permit limit and toxicity test results
  - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at

<http://www.epa.gov/NE/enforcementandassistance/dmr.html>

In addition to the summary sheets the report must include:

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

Attachment B  
MARINE CHRONIC  
TOXICITY TEST PROCEDURE AND PROTOCOL

## I. GENERAL REQUIREMENTS

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

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

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

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

## II. METHODS

Methods to follow are those recommended by EPA in:

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

Any exceptions are stated herein.

## III. SAMPLE COLLECTION

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



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

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

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. A thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) should also be run.

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

#### **IV. DILUTION WATER**

Grab samples of receiving water used for chronic toxicity testing shall be collected from one or several distances away from the discharge. It may be necessary to test receiving water at several distances in a separate chronic test to determine the extent of the zone of toxicity. Avoid collecting near areas of obvious road or agricultural runoff, storm sewers or other point source discharges. An additional control (0% effluent) of a standard laboratory water of known quality shall also be tested.

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

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

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

#### **V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA**

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

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

**EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN,  
ARBACIA PUNCTULATA, FERTILIZATION TEST<sup>1</sup>**

---

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

eggs

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

Footnotes:

1. Adapted from EPA/600/4-91/003, July 1994.
2. When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

**EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA, GROWTH AND SURVIVAL TEST<sup>1</sup>**

---

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

16. Aeration<sup>2</sup>

None

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

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Footnotes:

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

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

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

## VI. CHEMICAL ANALYSIS

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

<u>Parameter</u>	<u>Effluent</u>	<u>Diluent</u>	Minimum Quanti- fication Level(mg/L)
pH	x	x	---
Salinity	x	x	PPT(o/oo)
Total Residual Oxidants* <sup>1</sup>	x	x	0.05
Total Solids and Suspended Solids	x	x	
	---		
Ammonia	x	x	
	0.1		
Total Organic Carbon	x	x	
	0.5		
<u>Total Metals</u>			
Cd	x		0.001
Cr	x		0.005
Pb	x		0.005
Cu	x		0.0025
Zn	x		0.0025
Ni	x		0.004
Al	x		0.02

### Superscripts:

\*<sup>1</sup> Total Residual Oxidants  
Either of the following methods from the 18th Edition of the APHA (1992) Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

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

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



## VII. TOXICITY TEST DATA ANALYSIS

### LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- ! Probit Method
- ! Spearman-Kärber
- ! Trimmed Spearman-Kärber
- ! Graphical

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

### Chronic No Observed Effect Concentration (C-NOEC)

Methods of Estimation:

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

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

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

## VIII. TOXICITY TEST REPORTING

A report of results will include the following:

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

- ! Raw data and bench sheets.
- ! Provide a description of dechlorination procedures (as applicable).
- ! Any other observations or test conditions affecting test outcome.

## ATTACHMENT C

### **NPDES Whole Effluent Toxicity Testing, Monitoring and Reporting**

This guidance is intended to promote compliance and enhance program efficiency and effectiveness. This is not intended to, nor does it, constitute rulemaking by EPA and may not be relied upon to create a right or a benefit, substantive or procedural, enforceable at law or in equity, by any person. This document was prepared for NPDES Permittees to: (1) clarify Whole Effluent Toxicity (WET) testing, monitoring and reporting requirements; (2) provide guidance; and (3) provide a list of EPA contacts available to answer questions.

#### **TIPS:**

##### **1. NPDES Permit Requirements**

The sampling location, sample type, test frequency, test species, monitoring period, and reporting requirements are specified in Part I (and ATTACHMENTS) of the NPDES Permit. Read the NPDES Permit carefully. Permittees and analytical laboratories must adhere to Permit requirements and test protocols. The Permittee is responsible for data quality, data integrity and NPDES reporting. EPA recommends that the Permittee provide its testing laboratory with a copy of the entire NPDES Permit (i.e., Part I and ATTACHMENTS, and Part II "General Conditions") and any subsequent modifications together with any alternate dilution water authorization letters. Mistakes have been made in the past that could have been avoided if the bioassay laboratory had a copy of these documents.

##### **2. WET Tests Data Quality and Reporting**

Carefully review bioassay test results and be sure that the data are valid (i.e., the minimum test requirements, test review requirements and test acceptability criteria (TAC) are met for EPA's standard and EPA-New England protocol) and are correctly reported on the DMR.

##### **3. WET Test Scheduling**

Laboratories have scheduled WET tests using test organisms that are at or near the oldest acceptable age at test start. If this is done and there is a delay in sample delivery, the test organisms may be too old for use in the bioassay test when the sample arrives. This could create some scheduling difficulties or could require a contingency plan that includes a secondary emergency source of test organisms. It is suggested that Permittees ask whether laboratories have contingency plans for such situations.



## GUIDANCE:

### **4. WET Guidelines and Methods Manuals**

Guidelines Establishing Test Procedures for the Analysis of Pollutants; Whole Effluent Toxicity Test Methods: Final Rule (Federal Register: November 19, 2002, Volume 67, Number 223, Rules and Regulations pp. 69951-69972)

The most current methods manuals, posted at Web address [www.epa.gov/waterscience/WET/](http://www.epa.gov/waterscience/WET/), are as follows:

- a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012;
- b. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013;
- c. Short-Term Methods for Estimating Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, EPA-821-R-02-014; and
- d. Standard Methods for the Examination of Water and Wastewater, 21<sup>st</sup> Edition, 2005.

### **5. WET Monitoring and Reporting**

EPA rejects WET test reports that do not follow Permit requirements, applicable protocols, and meet all minimum criteria for acceptability and variability of test results, and requires tests to be repeated until valid results are obtained. Results, valid or otherwise, must be submitted by the date specified in Part I of the NPDES Permit even if the test has to be repeated. Therefore, EPA recommends that sampling and testing be initiated early in the monitoring period prescribed by the Permit.

If a valid WET test is not completed by the reporting deadline, the Permittee must report the invalid test using the proper code on the DMR; the code is "H." The cover letter must explain the monitoring and reporting violation and indicate when the test will be repeated. A corrected DMR must be resubmitted once valid data are available, and the entire report submitted as required by the Permit. The report shall include, among other things, bench sheets to document that there was an invalid test and that the test was repeated.

### **6. Sample Dechlorination**

The total residual chlorine concentration of the discharge sample shall be measured and, if detected, the sample shall be dechlorinated in the laboratory prior to WET testing in accordance with Standard Methods for the Examination of Water and Wastewater, 21<sup>st</sup> Edition, 2005 (see also Section VI, Region I Protocol). The total residual chlorine concentration of the discharge sample



must be reported and the dechlorination method described. When the sample is dechlorinated in the laboratory, an additional thiosulfate control (with the maximum amount of thiosulfate in the lab control or the receiving water control) must also be run. This information must also be included in the report.

**7. Sample Hold Time**

Sample hold time must be consistent with that specified by test protocol. The holding times for the initial use of original or renewal sample is less than **24 hours** for on-site tests and less than **36 hours** for off-site tests as specified in the protocols unless a waiver is obtained in writing from EPA. In isolated cases where the test cannot be started within 36 hours of sample collection, data must be submitted to EPA and the State to demonstrate that the effluent toxicity of a sample is not reduced by extending the holding time beyond 36 hours. Subsequent to initial use of the original or renewal sample, samples may be used for test renewal at 24, 48 and 72 hours.

**8. Salinity Adjustment of the Effluent Sample**

The Region's test protocols require the use of sea salts for salinity adjustment in every case.

**9. Age of the Test Organisms**

The protocols specify what the age of the test organism must be at test initiation. Evidence to verify test organism age must be included in each report.

**10. Raw Data and Bench Sheets**

Raw data and bench sheets must be included in the full report.

**11. Report Integrity and DMR Accuracy**

WET test data summary tables must be consistent with the report text, data analyses, bench sheets; and DMRs. Report integrity and DMR accuracy are crucial, and are the responsibility of the Permittee.

**12. Data Analyses**

Flow charts in the EPA acute and chronic WET test manuals must be followed so that the correct analyses are performed. Statistical program printouts and graphical displays (e.g. NOEC and LC50 calculations, etc.) must be submitted.

**13. Chronic Ceriodaphnia dubia Survival and Reproduction Test**

The duration of the chronic Ceriodaphnia dubia survival and reproduction test must not exceed **eight days**. The minimum acceptability criteria for each test is measured and documented for all test controls. Offspring from the fourth or higher broods must not be included with test results. (See EPA-821-R-02-013, October 2002, p. 161.)

**14. Document Ongoing Laboratory Performance**

As part of an in-house Quality Assurance program, each laboratory must perform reference toxicant tests on the test organisms it uses and must analyze the data



for the reported test endpoints. Reference toxicant testing must be performed monthly, or concurrently depending on test frequency, for each test endpoint, in accordance with the EPA Methods Manual. Reference toxicity tests are to be performed and interpreted according to the referenced EPA Method Manuals. (See EPA-821-R-02-013, Section 4.16.1, p. 15.) Reference toxicity test results and applicable control charts must be included in every report.

In the case where a reference toxicity test is performed concurrently with an effluent or receiving water test and the reference toxicity test results fall slightly outside the control limits established by the laboratory for the test endpoint and the primary test meets the test acceptability criteria, the primary test will be considered "conditionally" acceptable. However, if the results of a concurrently run reference toxicity test fall well outside the established upper control limits, the primary test will be considered unacceptable and must be repeated immediately. (See EPA-821-R-02-013, Section 4.16).

#### **15. Sampling Methods, Holding Times, and Preservation Techniques**

All sampling methods, holding times and preservation techniques must be consistent with 40 C.F.R. Parts 122 and 136. Note that EPA-approved test methods require that samples collected for metals analyses be preserved immediately after collection.

#### **16. Dilution Water**

The objective of the WET test is to estimate the toxicity of the effluent in uncontaminated receiving water. Ideally, a grab sample of receiving water must be collected immediately upstream and outside of the influence of the outfall for use as dilution water in the tests.

#### **17. Alternate Dilution Water**

EPA-New England has adopted a **species-specific, self-implementing policy** for switching to alternate dilution water use in WET tests where the receiving water is documented to be toxic or unreliable. The policy authorizes alternate dilution water use in the following two cases:

- (1) when a WET test is repeated due to site water toxicity; and
- (2) in future WET tests where there are two recent documented incidents of site water toxicity associated with a particular test species. The details of EPA-New England's species-specific, self-implementing policy is provided below.

**Case (1):** EPA-New England authorizes the use of an alternate dilution water for any WET test repeated due to site water toxicity. Additionally:

- The test must be repeated during the monitoring period specified by the Permit.
- The selected alternate dilution water must have characteristics such as hardness similar to those of the receiving water, and not produce a toxic response.
- A receiving water control must be run in alternate dilution water tests.
- A complete WET test report must be submitted as required by the Permit.



- If the retest documents that the receiving water controls met the TAC, receiving water must be used as diluent in future WET tests.
- If the receiving water controls of the retest failed to meet the TAC, an alternate dilution water may be used in future WET tests using that test organism only after the Permittee submits a written request to EPA and receives written authorization from EPA. (See Case (2) below.)

**Case (2):** Before an alternate dilution water is used in future WET tests, the Permittee must submit a notification letter to EPA of species-specific, site water toxicity. The notification letter shall be sent to the following EPA addresses:

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

and

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

The letter must include:

1. WET data documenting the two recent incidents of site water toxicity to a test species;
2. Information on the alternate dilution water selected for future WET tests including hardness data and a comparison to the receiving water chemistry; and
3. A list of the controls (e.g., site water control, alternate dilution water control, laboratory culture water control, thiosulfate control) that will be run in future WET tests.

Then, EPA-New England will respond in writing to authorize or to deny the use of alternate dilution water in future WET tests. When EPA-New England authorizes the use of an alternate dilution water in future WET tests, it is for the duration of the life of the Permit. At a minimum, EPA will review alternate dilution water authorizations during Permit reissuance.

EPA reserves the right to revoke this guidance at any time and may immediately require the Permittee to use site water as diluent as EPA deems necessary. Such a determination will be provided in writing to the Permittee.



#### **18. Site Water Controls in Alternate Dilution Water Tests**

Alternate dilution water WET tests shall be run with a minimum of two controls; a site water control and a toxic free alternate dilution water control. Additional controls such as a laboratory culture control or a thiosulfate control must also be run, if necessary. Chemical data of the receiving water and dilution water samples must be included in the report.

#### **19. Use of Control Data**

When performing statistical analyses, the dilution water control, whether synthetic alternate dilution water or receiving water, must be used for data comparison.

In alternate dilution water tests, the receiving water control results are "report only" data.

If an alternate dilution water control, the thiosulfate control or the lab culture water control fail to meet the minimum TAC, the toxicity test must be repeated using a fresh sample.

#### **20. Test Results Review**

Toxicity test controls must meet the minimum test acceptability criteria. Additionally, WET test results are reviewed as follows:

##### **a. Concentration-Response Relationship**

The WET data concentration-response relationship is reviewed, and Hypothesis Testing and Point Estimate techniques are used to determine test endpoints. A dose-response review must be performed according to Section 10.2.6 of EPA-821-R-02-013 (for freshwater tests) or Section 10.2.6. of EPA-821-R-02-014 (for marine tests) to support the reported test endpoint values and to evaluate the reliability of the WET test results. In most cases, the review will draw in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with a fresh sample is required.

##### **b. Test Variability**

The within-test variability must be evaluated to determine test sensitivity which is a required part of the chronic WET test review. This review is only applicable to the sub-lethal test endpoints such as growth and reproduction that were determined using hypothesis testing. The test sensitivity evaluation is done by examining the calculated Percent Minimum Significant Difference (PMSD).

The PMSD is calculated for test endpoints which was determined using parametric statistical analysis techniques. For cases where a NOEC was determined using non-parametric technique, the PMSD is only calculated to determine test variability and is calculated using a comparable,



parametric statistical analysis technique. As a final step in the evaluation, the calculated PMSD is compared to the upper and lower PMSD bounds shown for freshwater tests in Table 6 of EPA-821-R-02-013, Section 10.2.8.3, p. 52, and for marine tests in Table 6 of EPA-821-R-02-014, Section 10.2.8.3., p. 54.

- 1.) If the PMSD exceeds the upper bound test variability criterion of Table 6, the test results are considered too highly variable to determine the WET of the discharge at the permitted receiving water concentration (RWC). If the test results indicate that the discharge is not toxic at the RWC, then the test is considered insufficiently sensitive and must be repeated using fresh samples. If the test results indicate that the discharge is toxic at the RWC, the results are considered acceptable and the test does not have to be repeated.
- 2.) If the PMSD falls below the lower bound test variability criterion of Table 6, the test is highly sensitive, and the percent relative difference (PRD) between the control and each concentration must be calculated and compared to the lower PMSD boundary. If the PRD for the concentration falls below the lower bound, the difference is considered statistically insignificant. If the PRD for the concentration is above the lower bound, then the concentration is considered statistically significant. (See Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program, EPA 833-R-00-003, June 2002, Section 6.4.2.)
- 3.) When PMSDs fall within the upper and lower bounds of Table 6, the sub-lethal test endpoint determinations shall be reported.

## **21. Sign and Certify Each WET Report**

Under 40 C.F.R. §122.41(k), each WET test report submitted to the EPA shall be signed and certified by a person described below or by a duly authorized representative of that person in accordance with 40 C.F.R. §122.22(b)-(d):

- (1) for a corporation, by a responsible corporate officer;
- (2) for a partnership or sole proprietorship, by a general partner or the proprietor, respectively; and
- (3) for a municipality, State, Federal or other public agency, the principal executive officer or ranking elected official.

The Permittee is responsible for the data quality that it reports to EPA. When a report is signed and certified, it documents that the NPDES Permittee is certain that the WET test data submitted meet the Permit requirements for testing and reporting. Please include the following certification statement of 40 C.F.R. §122.22(d) in every report:



**WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Permittee)**

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on \_\_\_\_\_

[Date]

[Authorized Signature]

\_\_\_\_\_  
[Print or Type Name and Title]

\_\_\_\_\_  
[Print or Type the Permittee's Name]

\_\_\_\_\_  
[Print or Type the NPDES Permit No.]

Since the WET test and report check is complicated, you may wish to have your WET laboratory certify the validity of the WET test data and report accuracy to you. Suggested language is given below. Please note that this does not relieve the Permittee from its responsibility to sign and certify the report under 40 C.F.R. §122.41(k).

**WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Bioassay Laboratory)**

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on \_\_\_\_\_

[Date]

[Authorized Signature]

\_\_\_\_\_  
[Print or Type Name and Title]

\_\_\_\_\_  
[Print or Type Name of Bioassay Laboratory]

**22. Telephone Contacts**

If you have questions, please contact Joy Hilton, Water Technical Unit, at (617) 918-1877 or David McDonald, Ecosystem Assessment Unit, at (617) 918-8609.

## **Attachment D**

### **EPA - New England**

#### **Reassessment of Technically Based Industrial Discharge Limits**

Under 40 CFR '122.21(j)(4), all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the following information to the Director: a written evaluation of the need to revise local industrial discharge limits under 40 CFR '403.5(c)(1).

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and EPA to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

**Please read direction below before filling out form.**

#### **ITEM I.**

- \* In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.
- \* In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.
- \* In Column (1), list what dilution ratio and/or 7Q10 value was used in your old/expired NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued NPDES permit.

The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by EPA in your new NPDES permit can be found in your NPDES permit "Fact Sheet."

- \* In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.
- \* In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

## **ITEM II.**

- \* List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

## **ITEM III.**

- \* Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

## **ITEM IV.**

- \* Since your existing TBLLs were calculated, identify the following in detail:
  - (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
  - (2) if your POTW is presently violating any of its current NPDES permit limitations - include toxicity.

## **ITEM V.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with 40 CFR '136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see EPA's Local Limit Guidance Document (July 2004).

## **Item VI.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

**(Item VI. continued)**

All effluent data collected and analyzed must be in accordance with 40 CFR '136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued NPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 25 mg/l - Calcium Carbonate (copper's chronic WQS equals 6.54 ug/l) the chronic NPDES permit limit for copper would equal 156.25 ug/l.

**ITEM VII.**

- \* In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued NPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

**ITEM VIII.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with 40 CFR '136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at EPA - New England.



**ITEM II.**

EXISTING TBLLs			
POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)	POLLUTANT	NUMERICAL LIMIT (mg/l) or (lb/day)

**ITEM III.**

Note how your existing TBLLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. uniform concentration, contributory flow, mass proportioning, other. Please specify by circling.

**ITEM IV.**

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLLs were calculated?

If yes, explain.

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Has your POTW violated any of its NPDES permit limits and/or toxicity test requirements?

If yes, explain.

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# ITEM V.

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Headwork Loading (MAHL) values used to derive your TBLLs listed in Item II. In addition, please note the Environmental Criteria for which each MAHL value was established, i.e. water quality, sludge, NPDES etc.

Pollutant	Column (1) Influent Data Analyses		Column (2)	Criteria
	Maximum (lb/day)	Average (lb/day)	MAHL Values (lb/day)	
Arsenic				
Cadmium				
Chromium				
Copper				
Cyanide				
Lead				
Mercury				
Nickel				
Silver				
Zinc				
Other (List)				



# ITEM VI.

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

Pollutant	Column (1)		Columns (2A) (2B)	
	Effluent Data Analyses Maximum (ug/l)	Average (ug/l)	Water Quality Criteria (Gold Book) From TBLLs Today (ug/l) (ug/l)	
Arsenic				
*Cadmium				
*Chromium				
*Copper				
Cyanide				
*Lead				
Mercury				
*Nickel				
Silver				
*Zinc				
Other (List)				

\*Hardness Dependent (mg/l - CaCO3)

**ITEM VII.**

In Column (1), identify all pollutants limited in your new/reissued NPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.

[illegible]

### ITEM VIII.

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

Column (1) Pollutant                      Biosolids Data Analyses  Average (mg/kg)		Columns (2A) (2B) Biosolids Criteria From TBLLs New (mg/kg) (mg/kg)	
Arsenic			
Cadmium			
Chromium			
Copper			
Cyanide			
Lead			
Mercury			
Nickel			
Silver			
Zinc			
Molybdenum			
Selenium			
Other (List)			

## ATTACHMENT E

### NPDES PERMIT REQUIREMENT FOR INDUSTRIAL PRETREATMENT ANNUAL REPORT

The information described below shall be included in the pretreatment program annual reports:

1. An updated list of all industrial users by category, as set forth in 40 C.F.R. 403.8(f)(2)(i), indicating compliance or noncompliance with the following:
  - baseline monitoring reporting requirements for newly promulgated industries
  - compliance status reporting requirements for newly promulgated industries
  - periodic (semi-annual) monitoring reporting requirements,
  - categorical standards, and
  - local limits;
2. A summary of compliance and enforcement activities during the preceding year, including the number of:
  - significant industrial users inspected by POTW (include inspection dates for each industrial user),
  - significant industrial users sampled by POTW (include sampling dates for each industrial user),
  - compliance schedules issued (include list of subject users),
  - written notices of violations issued (include list of subject users),
  - administrative orders issued (include list of subject users),
  - criminal or civil suits filed (include list of subject users) and,
  - penalties obtained (include list of subject users and penalty amounts);
3. A list of significantly violating industries required to be published in a local newspaper in accordance with 40 C.F.R. 403.8(f)(2)(vii);
4. A narrative description of program effectiveness including present and proposed changes to the program, such as funding, staffing, ordinances, regulations, rules and/or statutory authority;
5. A summary of all pollutant analytical results for influent, effluent, sludge and any toxicity or bioassay data from the wastewater treatment facility. The summary shall include a comparison of influent sampling results versus threshold inhibitory concentrations for the Wastewater Treatment System and effluent sampling results versus water quality standards. Such a comparison shall be based on the sampling program described in the paragraph below or any similar sampling program described in this Permit.

At a minimum, annual sampling and analysis of the influent and effluent of the Wastewater Treatment Plant shall be conducted for the following pollutants:

- |                    |                   |
|--------------------|-------------------|
| a.) Total Cadmium  | f.) Total Nickel  |
| b.) Total Chromium | g.) Total Silver  |
| c.) Total Copper   | h.) Total Zinc    |
| d.) Total Lead     | i.) Total Cyanide |
| e.) Total Mercury  | j.) Total Arsenic |

The sampling program shall consist of one 24-hour flow-proportioned composite and at least one grab sample that is representative of the flows received by the POTW. The composite shall consist of hourly flow-proportioned grab samples taken over a 24-hour period if the sample is collected manually or shall consist of a minimum of 48 samples collected at 30 minute intervals if an automated sampler is used. Cyanide shall be taken as a grab sample during the same period as the composite sample. Sampling and preservation shall be consistent with 40 CFR Part 136.

6. A detailed description of all interference and pass-through that occurred during the past year;
7. A thorough description of all investigations into interference and pass-through during the past year;
8. A description of monitoring, sewer inspections and evaluations which were done during the past year to detect interference and pass-through, specifying parameters and frequencies;
9. A description of actions being taken to reduce the incidence of significant violations by significant industrial users; and,
10. The date of the latest adoption of local limits and an indication as to whether or not the permittee is under a State or Federal compliance schedule that includes steps to be taken to revise local limits.

# NPDES PART II STANDARD CONDITIONS

(January, 2007)

## TABLE OF CONTENTS

A. GENERAL CONDITIONS	Page
1. <u>Duty to Comply</u>	2
2. <u>Permit Actions</u>	2
3. <u>Duty to Provide Information</u>	2
4. <u>Reopener Clause</u>	3
5. <u>Oil and Hazardous Substance Liability</u>	3
6. <u>Property Rights</u>	3
7. <u>Confidentiality of Information</u>	3
8. <u>Duty to Reapply</u>	4
9. <u>State Authorities</u>	4
10. <u>Other laws</u>	4
B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS	
1. <u>Proper Operation and Maintenance</u>	4
2. <u>Need to Halt or Reduce Not a Defense</u>	4
3. <u>Duty to Mitigate</u>	4
4. <u>Bypass</u>	4
5. <u>Upset</u>	5
C. MONITORING AND RECORDS	
1. <u>Monitoring and Records</u>	6
2. <u>Inspection and Entry</u>	7
D. REPORTING REQUIREMENTS	
1. <u>Reporting Requirements</u>	7
a. Planned changes	7
b. Anticipated noncompliance	7
c. Transfers	7
d. Monitoring reports	8
e. Twenty-four hour reporting	8
f. Compliance schedules	9
g. Other noncompliance	9
h. Other information	9
2. <u>Signatory Requirement</u>	9
3. <u>Availability of Reports</u>	9
E. DEFINITIONS AND ABBREVIATIONS	
1. <u>Definitions for Individual NPDES Permits including Storm Water Requirements</u>	9
2. <u>Definitions for NPDES Permit Sludge Use and Disposal Requirements</u>	17
3. <u>Commonly Used Abbreviations</u>	23

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

- a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.
- b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed \$25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than \$5,000 nor more than \$50,000 per day of violation, or by imprisonment for not more than 3 years, or both.
- c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed \$10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed \$25,000. Penalties for Class II violations are not to exceed \$10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed \$125,000.

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

2. Permit Actions

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

3. Duty to Provide Information

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

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

- a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words “confidential business information” on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).
- b. Claims of confidentiality for the following information will be denied:
  - (1) The name and address of any permit applicant or permittee;
  - (2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).
- c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.



NPDES PART II STANDARD CONDITIONS  
(January, 2007)

8. Duty to Reapply

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

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

### b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

### c. Notice

- (1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
- (2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

### d. Prohibition of bypass

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

- (1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- (2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
- (3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.  
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

## 5. Upset

- a. Definition. *Upset* means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

- c. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (1) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (2) The permitted facility was at the time being properly operated;
  - (3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
  - (4) The permittee complied with any remedial measures required under B.3. above.
- d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

### PART II. C. MONITORING REQUIREMENTS

#### 1. Monitoring and Records

- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.
- c. Records of monitoring information shall include:
  - (1) The date, exact place, and time of sampling or measurements;
  - (2) The individual(s) who performed the sampling or measurements;
  - (3) The date(s) analyses were performed;
  - (4) The individual(s) who performed the analyses;
  - (5) The analytical techniques or methods used; and
  - (6) The results of such analyses.
- d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.
- e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000, or by

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

### 2. Inspection and Entry

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

- a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location.

## PART II. D. REPORTING REQUIREMENTS

### 1. Reporting Requirements

- a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:
  - (1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
  - (2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
  - (3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
- b. Anticipated noncompliance. The permittee shall give advance notice to the Regional Administrator of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

- d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.
  - (2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.
  - (3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.
- e. Twenty-four hour reporting.
  - (1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
  - (2) The following shall be included as information which must be reported within 24 hours under this paragraph.
    - (a) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See 40 CFR §122.41(g).)
    - (b) Any upset which exceeds any effluent limitation in the permit.
    - (c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)
  - (3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

- f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.
- h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

### 2. Signatory Requirement

- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)
- b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

### 3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

## PART II. E. DEFINITIONS AND ABBREVIATIONS

### 1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

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

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

*Average weekly discharge limitation* means the highest allowable average of “daily discharges” measured during the calendar week divided by the number of “daily discharges” measured during the week.

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

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

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

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

*Construction Activities* - The following definitions apply to construction activities:

- (a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.
- (b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.
- (c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

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

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

*Daily Discharge* means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

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

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

*Discharge of a pollutant* means:

- (a) Any addition of any “pollutant” or combination of pollutants to “waters of the United States” from any “point source”, or
- (b) Any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See “Point Source” definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead



## NPDES PART II STANDARD CONDITIONS

(January, 2007)

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any “indirect discharger.”

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

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

*EPA* means the United States “Environmental Protection Agency”.

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

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

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

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

*Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

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

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

*Municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

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

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

- (a) From which there is or may be a “discharge of pollutants”;
- (b) That did not commence the “discharge of pollutants” at a particular “site” prior to August 13, 1979;
- (c) Which is not a “new source”; and
- (d) Which has never received a finally effective NPDES permit for discharges at that “site”.

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

## NPDES PART II STANDARD CONDITIONS (January, 2007)

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

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

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

*NPDES* means “National Pollutant Discharge Elimination System”.

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

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

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

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

*Point Source* means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

*Pollutant* means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

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

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

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

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

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

*Publicly Owned Treatment Works (POTW)* means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a “State” or “municipality”.

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

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

*Secondary Industry Category* means any industry which is not a “primary industry category”.

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

- (1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);
- (2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and
- (3) satisfies at least one of the following criteria:
  - (i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
  - (ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
  - (iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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

*Sewage Sludge* means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

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

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

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

*Sludge-only facility* means any “treatment works treating domestic sewage” whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

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

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

*Storm water discharge associated with industrial activity* means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

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

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

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

For purposes of this definition, “domestic sewage” includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a “treatment works treating domestic sewage”, where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

*Waters of the United States* means:

- (a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;
- (b) All interstate waters, including interstate “wetlands”;
- (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands”, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - (1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;
  - (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - (3) Which are used or could be used for industrial purposes by industries in interstate commerce;
- (d) All impoundments of waters otherwise defined as waters of the United States under this definition;
- (e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;
- (f) The territorial sea; and
- (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

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

*Whole Effluent Toxicity (WET)* means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

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

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

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

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

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

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

- (1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and
- (2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

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

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

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

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

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

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

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

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

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

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

*Class I sludge management facility* is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

## NPDES PART II STANDARD CONDITIONS

(January, 2007)

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

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

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

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

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

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

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

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

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

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

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

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

*Feed crops* are crops produced primarily for consumption by animals.

*Fiber crops* are crops such as flax and cotton.

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

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

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



NPDES PART II STANDARD CONDITIONS  
(January, 2007)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## NPDES PART II STANDARD CONDITIONS (January, 2007)

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

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

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

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

*Person* is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

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

*pH* means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

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

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

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

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

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

*Range land* is open land with indigenous vegetation.

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

## NPDES PART II STANDARD CONDITIONS (January, 2007)

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

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

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

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

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

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

*Sewage sludge unit* is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

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

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

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

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

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

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

## NPDES PART II STANDARD CONDITIONS (January, 2007)

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

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

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

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

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

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

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

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

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

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

### 3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl <sub>2</sub>	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M <sup>3</sup> /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH <sub>3</sub> -N	Ammonia nitrogen as nitrogen
NO <sub>3</sub> -N	Nitrate as nitrogen
NO <sub>2</sub> -N	Nitrite as nitrogen
NO <sub>3</sub> -NO <sub>2</sub>	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

NPDES PART II STANDARD CONDITIONS  
(January, 2007)

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	“Whole effluent toxicity” is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	“Chronic (Long-term Exposure Test) – No Observed Effect Concentration”. The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	“Acute (Short-term Exposure Test) – No Observed Effect Concentration” (see C-NOEC definition).
LC <sub>50</sub>	LC <sub>50</sub> is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC <sub>50</sub> = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION I  
5 POST OFFICE SQUARE, SUITE 100  
BOSTON, MASSACHUSETTS 02109-3912**

**PARTIALLY REVISED FACT SHEET**

**PARTIALLY REVISED DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION  
SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES  
PURSUANT TO THE CLEAN WATER ACT (CWA)**

NPDES PERMIT NO.: **MA0100501**

PUBLIC NOTICE PERIOD: September 25, 2013 – October 24, 2013

NAME AND ADDRESS OF APPLICANT:

**South Essex Sewage District (SESJ)  
P.O. Box 989  
Salem, MA 01970**

The municipalities of Beverly, Danvers, Marblehead, Middleton, Peabody and Salem are co-permittees for specific activities required by the permit, as set forth in Section II.c of the Partially Revised Draft Fact Sheet and Sections I.C and I.D of the Partial Revised Draft Permit. These activities pertain to the operation and maintenance of the collection systems owned and operated by the co-permittees. The responsible municipal departments are:

**City of Beverly  
c/o City Engineer  
Beverly City Hall  
191 Cabot Street  
Beverly, MA 01915**

**Town of Danvers  
c/o Town Engineer  
Public Works  
Engineering Division  
1 Burroughs Street  
Danvers, MA 01923**

**Town of Marblehead  
c/o Superintendent  
Water/Sewer Department  
P.O. Box 1108  
Marblehead, MA 01945**

**Town of Middleton  
c/o Superintendent of  
Public Works  
195 North Main Street  
Middleton, MA 01949**

**City of Peabody  
c/o Mayor  
24 Lowell Street  
Peabody, MA 01960**

**City of Salem  
c/o City Engineer  
120 Washington Street  
4th Floor  
Salem, MA 01970**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**South Essex Wastewater Treatment Facility  
50 Fort Avenue  
Salem, MA 01970**

RECEIVING WATER: **Salem Sound (North Coastal Watershed, Segment 93-25)**

CLASSIFICATION: **Class SB**

## I. PROPOSED ACTION

### a. Decision to Partially Reopen Permit for Public Comment

On March 27, 2008, the Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) released a Draft Permit for the South Essex Wastewater Treatment Facility for public review and comment. The public comment period was originally scheduled to close April 25, 2008 but was extended through June 6, 2008 at the request of the permittee. Numerous comments were received, including comments from the South Essex Sewage District (SESD) and its member communities (City of Salem, City of Beverly, Town of Marblehead, City of Peabody and the Town of Danvers). Among the issues raised in the comments were the receiving water quality standards classification and the legal basis for including the member communities as limited co-permittees to the permit for sewer system operation and maintenance requirements.

Since the close of the public comment period, events have occurred that have influenced EPA's determinations regarding the 2008 Draft Permit. Specifically, MassDEP has submitted, and EPA has reviewed, historic documentation on the Massachusetts Water Quality Standards classification of the receiving water at the discharge location. Also, in a May 28, 2010 decision related to the appeal of the Upper Blackstone Water Pollution Abatement District permit, the Environmental Appeals Board (EAB) remanded to EPA conditions related to co-permittees, finding that EPA had failed to adequately articulate in the record of proceeding a rule-of-decision, or interpretation, identifying the statutory and regulatory basis for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collections systems. EPA Region I has conducted an evaluation of its legal authority and has developed a Regional permitting approach for satellite collection systems that supports the inclusion of the owners of satellite collection systems as co-permittees. The permitting strategy, titled "***EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS***" has been included as Attachment 1 to this fact sheet.

Additionally, during the extended period since the 2008 Draft Permit was released for public comment, EPA has updated several standard permit conditions pertaining to collection system operation and maintenance, and discharge monitoring report submission. These updated conditions are also included in the Partially Revised Draft Permit, and are also described in a later section of this fact sheet.

Accordingly, EPA has decided to revise portions of the 2008 Draft Permit and solicit public comment on those revisions. The specific changes are discussed in detail in the following sections of this fact sheet. The fact sheet for the 2008 Draft Permit is also attached (see Attachment 2) so that the basis for the conditions in that version of the Draft Permit may be understood.

### b. Scope of Opening

In accordance with 40 C.F.R. § 124.14(c), comments filed on this Partially Revised Draft Permit during the reopened comment period are limited to the "substantial new questions that caused its reopening." Substantial new questions that caused its reopening are the revised surface water quality standards classification based on new information, the permittee and co-permittees responsibilities in Part I.C, Operation and Maintenance of the Sewer System, and the revisions in Part I. F Monitoring and Reporting.

Specific changes to the draft permit are shown in italic in the Partially Revised Draft Permit and are listed below:



Page 1:

1. EPA has updated the language which summarizes the responsibilities of the co-permittees and now reads “...*which include conditions regarding the operation and maintenance of the portion of the collection systems owned and operated by the individual municipalities. The municipalities are also responsible for the requirements found in Part I.G. State Permit Conditions.*”
2. The contact person for the City of Peabody has been changed to the Mayor at the request of the Mayor in written comments submitted on the 2008 draft permit.
3. The language explaining the effective date of the permit was changed for clarity and in consistency with other recently issued NPDES permits in Massachusetts and now reads “...*first day of the calendar month immediately following sixty days after signature.*”
4. Language summarizing the contents of the Partially Revised Draft Permit has been changed to clarify the contents and include the specific title of each attachment. EPA has included an updated Attachment A (Marine Acute Toxicity Test Procedure and Protocol), which was revised in July 2012.
5. Attachment E has also been added to provide guidance in the development of SESD industrial pretreatment annual report which was a requirement of the 2008 Draft Permit and remains a condition of the Partially Revised Draft Permit.
6. The name of the Acting Director of EPA’s Office of Ecosystem Protection has been added and the name of MassDEP’s Director of the Surface Water Discharge Program has been added.

Page 2:

1. EPA has revised the fecal coliform limitation to be consistent with the SB-shellfishing criteria. Fecal coliform discharges shall not exceed a monthly geometric mean of 88 colony forming units per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum, and no more than 10 percent of the fecal coliform samples in any calendar month shall exceed 260 organisms per 100 ml. Please see section II.a. of this Partially Revised Fact Sheet.
2. EPA has also changed the maximum daily limit for enterococci to 276 colonies forming units. MassDEP views the use of the 90% upper confidence level of 276 cfu/100 ml as appropriate for setting the maximum daily limit for *Enterococci* in the draft permit. Please see section II.a. of this Partially Revised Fact Sheet.

Footnote 13:

The #17 was added for clarification. (The permittee must use the receiving water as diluent in WET testing unless authorized after following the procedures in Attachment C, #17.)

Footnote 14:

Language in Footnote 14 was updated to reference the current Marine Acute Toxicity Test

Procedure and Protocol and the related attachments for approval of the use of alternative dilution water.

Footnote 15:

Language in Footnote 15 was updated to be consistent with the current version of Attachment A - Marine Acute Toxicity Test Procedure and Protocol which was revised in July 2012.

Page 6, Section C:

The Operation and Maintenance language was updated to be consistent with other recently issued NPDES Permits in Massachusetts. Please see Section II.c. of this Partially Revised Fact Sheet for detailed explanation.

Page 10, Section D:

The web address for MassDEP's SSO Reporting Form was updated. Please see section II.e. for more information.

Page 12, Section F:

The Partially Revised permit includes reporting requirements using NetDMR and updated addresses for submitting reports in hard copy form. Please see Section II.e. for more information.

Page 13, Section F:

At the request of the Massachusetts Division of Marine Fisheries (Mass DMF) during the public comment period for the 2008 draft permit, the permittee must notify Mass DMF, within 24 hours, of a permit excursion of fecal coliform or if a plant failure occurs.

## **II. PERMIT BASIS AND EXPLANATION OF CHANGES**

### **a. Water Quality Standards; Designated Use**

The 2008 Draft Permit and Fact Sheet identified the receiving water for the SESD discharge as Salem Sound, Class SA. In its comment letter dated June 6, 2008, SESD stated that the classification was incorrect and that the appropriate classification is SB.

In a letter to EPA dated August 20, 2010, MassDEP addressed this issue. In its letter, MassDEP documented why it believes that the surface water quality classification of the receiving water is SB rather than SA. The body of the letter is presented below.

This letter is written to clarify MassDEP's position relative to the classification of the water body segment receiving effluent from the South Essex Sewage District (SESD) Outfall – MA0100501. This letter is being written in response to comments letters received on the Draft NPDES permit and accompanying documents proposed to be issued to SESD by the U.S. Environmental Protection Agency and MassDEP (Public Notice and Draft Permit dated May 16, 2008).

The Draft National Pollutant Discharge Elimination System (NPDES) permit fact sheet dated

May 16, 2008 identified the receiving water for the South Essex Sewage District (SESD) Outfall 001 – MA0100501 as Salem Sound, Class SA. SEDS commented in their letter dated June 6, 2008 that the receiving water is incorrectly identified as Class SA in the fact sheet. SEDS contends that the receiving water where the effluent terminates is Class SB and, thus the permit limits in the Draft NPDES permit for the SEDS outfall 001 need to be consistent with Class SB criteria.

In response to this issue MassDEP conducted a detailed review of our state Water Quality Standards and NPDES permit files back to 1967. Based on that review MassDEP agrees with SEDS that the correct classification of the waterbody where the SEDS outfall serial number 001 terminates is SB. Our historical records indicate that the segment “Salem and Beverly Harbors” were intentionally delineated in the original 1967 Water Quality Standards (WQS) to include the discharge from the South Essex Sewage District and the receiving waterbody was given the classification of SB. Subsequent iterations of the WQS were inconsistent because they did not include the narrative description of these waterbodies nor other receiving waterbodies in the North Coastal Basin. Over time the absence of waterbody descriptions in the WQS has led to varied interpretations of the extent of the receiving waterbodies and their classification. However, it is clear that the segment of the waterbody receiving effluent from SEDS has never been redefined by MassDEP since the original 1967 promulgation.

To better identify and understand the source of confusion MassDEP undertook a thorough review of NPDES permits history, Mass Water Quality Standards (WQS), and relevant Massachusetts State House records (e.g. register and library). A brief summary of our findings is outlined below:

1. In the late 1960’s and early 1970’s, MassDEP’s approach to classifying coastal waters in the Water Quality Standards (WQS) was to categorize them as SB where major NPDES point sources entered the receiving water body. This classification was carried out in consultation with the National Shellfish Sanitation Program (NSSP) and Division of Marine Fisheries (DMF) who require that an area (closed safety zone of prohibited) must be established between any sewage treatment plant effluent or other waste discharge of public significance and any growing area placed on the approved, conditionally approved, restricted or conditionally restricted shellfishing classification. Consistent with this approach, MassDEP’s Division of Water Pollution Control classified the waterbody receiving SEDS’s discharge as SB in the early versions of the WQS dating back to 1967. In most cases narrative description delineating the boundaries of waterbody receiving effluent from major point source discharged were included in the water quality standards dating back to 1967. Salem Harbor was described as “*Salem and Beverly Harbors inside a line from Naugus Head in Marblehead to Northwest Point on Bakers Island and Hospital Point in Beverly*”. The area of this waterbody encompassed the SEDS effluent discharge location. *See Attachment 1<sup>1</sup> - Location map*. Beverly Harbor was described as “*inside a line from Hospital Point to Juniper Point on Salem Neck*”. It should be noted that with the exception of the January 1, 1978 publication of the WQS, waterbody descriptions were excluded from all subsequent versions of the Massachusetts WQS. *See Attachment 2 – WQS Publications Depicting the Classification of Salem, Beverly and Marblehead Harbors*.
2. In 1976, a document entitled *Classification and Segmentation of Massachusetts River Basins and Coastal Zones* was published by Division of Water Pollution Control,

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<sup>1</sup> Figures and Attachments have not been reproduced in this document.

Department of Environmental Quality Engineering. On page 4 the document states “This document presents the reclassification of waters in the Commonwealth as dictated on the May 1974 revisions to the Massachusetts Water Quality Standards.” One purpose of the document was to identify water bodies that could be upgraded to Class B or SB as well as expand the inventory of waters. The document provided a narrative description of the Salem Harbor and the Salem and Beverly receiving waters consistent with the 1967, 1971, and 1974 standards and identified the Salem-Beverly segment (with the triangle out to Baker Island) as Class SB in the Map of that document. The document was developed to satisfy the regulatory requirements of the Water Quality Act of 1965 (P.L. 89-234, 79 Stat. 903), the Clean Water Restoration Act of 1966 (P.L. 89-753, 80 Stat. 1246), and the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500, 86 Stat. 816). It was also the Divisions intent to use the segmentation as a baseline for subsequent Water Quality Standard revisions and permitting decisions. There has been no MassDEP update to this document since 1976.

3. In 1978 the Massachusetts CMR were published in “state standard” format by a consultant. Two versions of the 1978 WQS were published: one dated January 1, 1978 and one dated April 7, 1978.
  - a. The version of the WQS dated January 1, 1978 included a narrative description of the Salem-Beverly segment (in Table 1) consistent with the 1967, 1971, 1974 WQS and the 1976 Classification document. In Table 1 the segment was identified as Class SB with a 1978 assessed condition of SC. The WQS map, however, identified the segment as SA which we believe was a typographical mistake. Pursuant to the 1978 WQS, the information in the Tables superseded the information in the maps. Part 5 (Basin classification and maps) Section 5.05 of the 1978 WQS stated “In case of inconsistency between the tables and maps, the data contained in the table shall control.” The maps also identified Salem Harbor and Marblehead Harbor as SA while the Tables identified them as SB. We found no explanation for this inconsistency between the 1978 WQS tables and the 1978 WQS maps. *See Attachment 3 – WQS Publications January 1, 1978.*

The April 7, 1978 hard copy of the WQS contained other inconsistencies similar to those found in the January version. For example. The Salem-Beverly segment was identified as Class SA in the Table but the Map was not clear, however, no narrative description of the segment was provided. Salem Harbor was identified as SA in the map and SB in the Table. Marblehead Harbor was identified as SA in both the table and the map, while Beverly Harbor was identified as SB in the Table and Map. Based on discussions with the Secretary of State’s office, MassDEP believes that the second publication of the standards in 1978 (April 7<sup>th</sup> version) was related to an overall state project to standardize the format of all of the state CMRs in 1978. The project was to simply transcribe the regulatory information into the selected format. Based on the records, the Department did not propose any changes to the standards as part of this process. The Secretary of State’s office did some of this work but also subcontracted formatting of some of the text and all the graphics (e.g. maps) to an outside consultant. We believe this is the reason for many of the cited inconsistencies.

- b. Furthermore, an archival search of the Massachusetts State house records

revealed no documented evidence that any substantive changes to segment classification in the North Coastal watershed were made to the 1978 WQS or approved by the Department.

- c. The change in the classification for the Salem-Beverly segment from Class SB to SA and the Marblehead Harbor segment change from SA to SB that appeared in the April 7<sup>th</sup> version of the WQS Tables appear to be a mistake that occurred when the CMR standards were reformatted. The change in classification was not consistent with official actions taken by other Department regulatory and enforcement programs (NPDES permit and 305b reporting) with respect to the waterbody receiving effluent from SESD.
  - d. The April 7, 1978 version of the document apparently carried forward in the September 21, 1978, WQS filing that was made by the Water Resources Commission to the Office of the Secretary State House, Boston, Massachusetts [Salem Harbor and Beverly Harbor were identified as SB while Salem-Beverly Harbor and Marblehead Harbor were identified in the identified in the filing text as SA]. The April 7, 1978 print document appears to be the source of information contained in this record. However, this record is inconsistent with the 1978 record on file at the Massachusetts statehouse that lists Salem Harbor, Beverly Harbor and Salem-Beverly Harbor as Class SB. As previously mentioned, while there were no descriptions for the segments in the filing or the 1978 standards, it was commonly understood by Department staff that the description for these segments was provided in the 1976 document entitled *Classification and Segmentation of Massachusetts River Basins and Coastal Zones*.
  - e. The April 7, 1978 WQS remained unchanged with respect to the Salem-Beverly segment until 1990 when the segment was dropped completely from the WQS Tables. In the current version of the Massachusetts WQS Salem Harbor and Beverly Harbor are identified as Class SB, however, no narrative description delineating the boundaries of these receiving water is provided in the current version of the standards.
4. A historical review of MassDEP and EPA regulatory and enforcement programs (NPDES permitting and 305(b) reporting) revealed a consistent track record of treating the waterbody receiving SESD's effluent as class SB up until 1993. During the 1993 permit cycle both the draft permit and the fact sheet identified the receiving stream as SA/SB. The classification of the receiving water was raised by the District on appeal of the 1994 permit. The 1999 resolution of the appeal explicitly stated that the classification of the receiving water for SESD effluent was corrected to SB and the Massachusetts state water quality certification was similarly corrected to SB. EPA issued of the 2001 permit with Class SB effluent limits. Likewise, the assessment group treated the waterbody as Class SB up until the most recent assessment report (WQA 2002). The treatment of the water body receiving effluent from SESD as SA in the North Coastal Water Quality Assessment Report (2002) appears to have been in error as a result of staff not referring back to the 1976 classification report and should not prescribe the NPDES permit process. A correction will be made to the assessment report during the next assessment cycle for the North Coastal watershed.

In summary, our historical review of NPDES permits history, Massachusetts Water Quality Standards (WQS), 305(b) reporting and relevant Massachusetts State House records (e.g. register and library) indicates a consistent track record in our application of SB criteria to the SESD discharge. To avoid confusion in the future, a Water Quality Standards revision is needed to clarify that the segment receiving effluent from SESD is Class SB. MassDEP intends to make this clarification in the next Standards revision and include the boundary description listed in Table 23 North Coastal drainage area in section 4.06 of the current Massachusetts Water Quality standards. That revision will include both the harbor and the triangular segment that encompasses the SESD outfall consistent with the 1967 WQS. The description for Salem Harbor is “*Salem Harbor inside a line from Naugus Head in Marblehead to the Northwest Point on Bakers Island to Hospital Point in Beverly and Juniper Point in Salem Neck*. This area encompasses the SESD effluent discharge location. The description for Beverly Harbor will be “*inside a line from Hospital Point to Juniper Point on Salem Neck*” also consistent with the 1967 WQS.

EPA has accepted MassDEP’s conclusion that the receiving waters for the SESD effluent are classified as SB. Accordingly, EPA has revised the fecal coliform limitation to be consistent with the SB-shellfishing criteria. Fecal coliform discharges shall not exceed a monthly geometric mean of 88 colony forming units per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum, and no more than 10 percent of the fecal coliform samples in any calendar month shall exceed 260 cfu per 100 ml.

EPA has also changed the maximum daily limit for enterococci to 276 colonies forming units. MassDEP views the use of the 90% upper confidence level of 276 cfu/100 ml as appropriate for setting the maximum daily limit for *Enterococci* in the draft permit.

No other adjustments to the permit limits are necessary to conform the effluent limits in the permit to the SB-shellfishing classification.

#### **b. Co-Permittees**

The municipalities of Beverly, Danvers, Marblehead<sup>2</sup>, Middleton, Peabody and Salem were listed as co-permittees on the 2008 Draft Permit and shall remain co-permittees on the Partially Revised Draft Permit. Each Town owns and operates a separate section of the sewer collection system that transports sewage to SESD’s facility for treatment. The co-permittees are only subject to the requirements in Part I.C., Operation and Maintenance of the Sewer System and Part I.D., Unauthorized Discharges.

Comments received on the 2008 Draft Permit included comments from SESD and its satellite sewer communities opposing the inclusion of the satellite sewer communities as limited co-permittees.

On May 28, 2010, the Environmental Appeals Board (EAB) remanded to EPA the co-permitting provisions in a permit issued to the Upper Blackstone Water Pollution Abatement District in Millbury, Massachusetts, a large publicly owned treatment plant. These conditions had been appealed to the EAB by the permittee and four of its satellite communities. In its order, the EAB found that EPA had not adequately articulated in the record of the proceeding a rule-of-decision, or interpretation, identifying the statutory and regulatory basis for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems that discharge to the treatment plant, and gave EPA the options of providing the appropriate legal and technical basis for supporting the

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<sup>2</sup> As discussed in the 2008 fact sheet (see Part VII), the Town of Marblehead currently holds an individual NPDES permit, which EPA plans to terminate upon the effective date of the SESD permit (and the co-permittee requirements.)

co-permitting provision, or withdrawing the provisions. In the interest of quickly placing other contested provisions into effect, EPA withdrew the co-permitting requirements in that permit. See <http://www.epa.gov/region1/npdes/permits/2010/finalma0102369DeterminationOnRemand.pdf>

However, since that time, EPA Region 1 has developed a more comprehensive factual and legal rationale for its decision to regulate satellite collection systems. Attachment 1 of this fact sheet is a copy of “**EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**”. EPA believes this document establishes its legal authority to include satellite communities as co-permittees, and has therefore retained the SESD satellite communities as co-permittees in the Partially Revised Draft Permit.

### **c. Operation and Maintenance of the Sewer System**

Part I.C, Operation and Maintenance of the Sewer System (Part I.C.) has also been reopened for public comment. The standard language and requirements in Part I. C, have been updated from the requirements in the 2008 Draft Permit. The revised language and requirements reflect the standard requirements for all NPDES permits now being drafted for publicly owned treatment works in Massachusetts.

The revisions in Part I.C. require SESD and the co-permittees to each develop a collection system operation and maintenance plan, and to map its sanitary sewer system. The schedule for completing the collection system operation and maintenance plan has two milestones.

The first milestone is that within six (6) months of the effective date of the permit, the permittee shall submit to EPA and MassDEP a description of the collection system management goals, staffing, information management, and legal authorities; a description of the overall condition of the collection system including a list of recent studies and construction activities; and a schedule for the development and implementation of the full Collection System O & M Plan.

The second milestone is that within twenty-four (24) months from the effective date of the permit, the full Collection System O & M Plan shall be implemented, and a copy submitted to EPA and MassDEP. The final plan is required to include: a preventative maintenance and monitoring program for the collection system; sufficient staffing to properly operate and maintain the sanitary sewer collection system; sufficient funding and the source(s) of funding for implementing the plan; identification of known and suspected overflows and back-ups, including manholes, a description of the cause of the identified overflows and back-ups, and a plan for addressing the overflows and back-ups consistent with the requirements of the permit; a description of the permittees and co-permittees programs for preventing infiltration and inflow-related effluent violations and all unauthorized discharges of wastewater, including overflows and bypasses, and an ongoing program to identify and remove sources of inflow and infiltration (I/I). The program is required to also include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and an educational public outreach program for all aspects of I/I control, particularly private inflow.

The Partially Revised Draft Permit also requires that sanitary sewer mapping be completed within thirty (30) months of the effective date of the permit, and includes specific information to be recorded on the maps.

### **d. Unauthorized Discharges**

The requirements in Part I.D., Unauthorized Discharges allows discharges from the facilities that are in accordance to the terms and conditions of the Draft Permit. The only discharge authorized from this

facility is the treatment plant outfall, as listed in Part I.A.1. All other discharges are prohibited including sanitary sewer overflows (SSOs).

Part I.D also requires that all unauthorized discharges, including sanitary sewer overflows be reported in accordance with general requirements of Part II, Standard Conditions of the Draft Permit. Therefore, the municipalities that own and operate satellite collection systems are subject to this Part. Unauthorized discharge from these collection systems must be reported by the owner.

The Part I.D. requirements in the Partially Revised Draft Permit are the same as in the original draft permit with one notable exception: the web link for the MassDEP Sewer System Overflow (SSO) Reporting Form has changed and may be now found at <http://www.mass.gov/eea/agencies/massdep/service/approvals/sanitary-sewer-overflow-bypass-backup-notification.html>.

#### **e. Monitoring and Reporting**

The Partially Revised Draft Permit includes the new provisions related to Discharge Monitoring Report (DMR) submittals via NetDMR. NetDMR is a national tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to the U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR 122.41 and 403.12. NetDMR is a Web-based tool that allows NPDES permittees to electronically sign and submit their discharge monitoring reports (DMRs) to EPA's [Integrated Compliance Information System \(ICIS-NPDES\)](#) via the [Environmental Information Exchange Network](#).

NetDMR will reduce the burden on EPA, states, and the regulated community; improve data quality; and expand the ability of both states and EPA in targeting their limited resources to meet environmental goals. An essential component of NetDMR when fully implemented will be the exchange of data with ICIS-NPDES allowing permittees to complete a DMR that is specific to their permit limits and outfalls.

The facility has already begun submitting its DMRs using NetDMR. The Partially Revised Draft Permit acknowledges this and removes the requirement to submit hard copies of DMRs and other required reports to EPA.

### **III. STATE CERTIFICATION REQUIREMENTS**

Staff of MassDEP have reviewed the Partially Revised Draft Permit. EPA has requested permit certification by the State pursuant to CWA § 401(a)(1) and 40 CFR § 124.53 and expects that the Draft Permit, as revised, will be certified.

### **IV. COMMENT PERIOD, HEARING REQUESTS, and PROCEDURES FOR FINAL DECISIONS**

All persons, including applicants, who believe the revised conditions of the Partially Revised Draft Permit are inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Michele Cobban Barden, U.S. EPA, Office of Ecosystem Protection, Municipal Permits Section, 5 Post Office Square-Suite 100, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the revised conditions in the Partially Revised Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public



meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Pursuant to 40 CFR 124.17, at the time the final permit decision is issued, EPA will also issue a response to comments, which will include responses to all significant comments submitted on the 2008 Draft Permit and on the Partially Revised Draft Permit.

#### V. EPA AND MassDEP CONTACTS

Additional information concerning the permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from:

Michele Cobban Barden  
US Environmental Protection Agency  
1 Congress Street  
Suite 1100 (CMA)  
Boston, Massachusetts 02114-2023  
Telephone: (617) 918-1539  
Fax: (617) 918-0539  
Email: [barden.michele@epamail.epa.gov](mailto:barden.michele@epamail.epa.gov)

or Claire Golden  
MA Department of Environmental Protection  
Division of Watershed Management  
205B Lowell Street  
Wilmington, MA 01887  
Telephone: (978) 978-694-3244  
Fax: (978) 694-3498  
Email: [claire.golden@state.ma.us](mailto:claire.golden@state.ma.us)

September 2013

\_\_\_\_\_  
Date

Ken Moraff, Acting Director  
Office of Ecosystem Protection  
U.S. Environmental Protection Agency

## ATTACHMENT 1

### **EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

This interpretative statement provides an explanation to the public of EPA Region 1's interpretation of the Clean Water Act ("CWA" or "Act") and implementing regulations, and advises the public of relevant policy considerations, regarding the applicability of the National Pollutant Discharge Elimination System ("NPDES") program to publicly owned treatment works ("POTWs") that are composed of municipal satellite sewage collection systems owned by one entity and treatment plants owned by another ("regionally integrated POTWs"). When issuing NPDES permits to these types of sanitary sewer systems, it is EPA Region 1's practice to directly regulate, as necessary, the owners/operators of the municipal satellite collection systems through a co-permitting structure. This interpretative statement is intended to explain, generally, the basis for this practice. In determining whether to include municipal satellite collection systems as co-permittees in any particular circumstances, Region 1's decision will be made by applying the law and regulations to the specific facts of the case before the Region.

EPA has set out a national policy goal for the nation's sanitary sewer systems to adhere to strict design and operational standards:

"Proper [operation and maintenance] of the nation's sewers is integral to ensuring that wastewater is collected, transported, and treated at POTWs; and to reducing the volume and frequency of ...[sanitary sewer overflow] discharges. Municipal owners and operators of sewer systems and wastewater treatment facilities need to manage their assets effectively and implement new controls, where necessary, as this infrastructure continues to age. Innovative responses from all levels of government and consumers are needed to close the gap."<sup>1</sup>

Because ownership/operation of a regionally integrated POTW is sometimes divided among multiple parties, the owner/operator of the treatment plant many times lacks the means to implement comprehensive, system-wide operation and maintenance ("O & M") procedures. Failure to properly implement O & M measures in a POTW can cause, among other things, excessive extraneous flow (*i.e.*, inflow and infiltration) to enter, strain and occasionally overload treatment system capacity. This failure not only impedes EPA's national policy goal concerning preservation of the nation's wastewater infrastructure assets, but also frustrates achievement of the water quality- and technology-based requirements of CWA § 301 to the extent it results in sanitary sewer overflows and degraded treatment plant performance, with adverse impacts on human health and the environment.

In light of these policy objectives and legal requirements, it is Region 1's permitting practice to subject all portions of the POTW to NPDES requirements in order to ensure that the treatment system as a whole is properly operated and maintained and that human health and water quality

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<sup>1</sup> See *Report to Congress: Impacts and Control of CSOs and SSOs* (EPA 833-R-04-001) (2004), at p. 10-2. See also "1989 National CSO Control Strategy," 54 Fed. Reg. 37371 (September 8, 1989).

impacts resulting from excessive extraneous flow are minimized. The approach of addressing O&M concerns in a regionally integrated treatment works by adding municipal satellite collection systems as co-permittees is consistent with the definition of “publicly owned treatment works,” which by definition includes sewage collection systems. Under this approach, the POTW in its entirety will be subject to NPDES regulation as a point source discharger under the Act. Region 1’s general practice will be to impose permitting requirements applicable to the POTW treatment plant along with a more limited set of conditions applicable to the connected municipal satellite collection systems.

The factual and legal basis for the Region’s position is set forth in greater detail in *Attachment A*.

## Attachment A

### **ANALYSIS SUPPORTING EPA REGION 1 NPDES PERMITTING APPROACH FOR PUBLICLY OWNED TREATMENT WORKS THAT INCLUDE MUNICIPAL SATELLITE SEWAGE COLLECTION SYSTEMS**

<i>Exhibit A</i>	List of POTW permits that include municipal satellite collection systems as co-permittees
<i>Exhibit B</i>	Analysis of extraneous flow trends and SSO reporting for representative systems
<i>Exhibit C</i>	Form of Regional Administrator's waiver of permit application requirements for municipal satellite collection systems

#### Introduction

On May 28, 2010, the U.S. EPA Environmental Appeals Board (“Board”) issued a decision remanding to the Region certain NPDES permit provisions that included and regulated satellite collection systems as co-permittees. *See In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11 to 08-18 & 09-06, 14 E.A.D. \_\_ (Order Denying Review in Part and Remanding in Part, EAB, May 28, 2010).<sup>2</sup> While the Board “did not pass judgment” on the Region’s position that its NPDES jurisdiction encompassed the entire POTW and not only the treatment plant, it held that “where the Region has abandoned its historical practice of limiting the permit only to the legal entity owning and operating the wastewater treatment plant, the Region had not sufficiently articulated in the record of this proceeding the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner/operator to separately owned/operated collection systems that do not discharge directly to waters of the United States, but instead that discharge to the treatment plant.” *Id.*, slip op. at 2, 18. In the event the Region decided to include and regulate municipal satellite collection systems as co-permittees in a future permit, the Board posed several questions for the Region to address in the analysis supporting its decision:

- (1) In the case of a regionally integrated POTW composed of municipal satellite collection systems owned by different entities and a treatment plant owned by another, is the scope of NPDES authority limited to owners/operators of the POTW treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that convey wastewater to the POTW treatment plant?
- (2) If the latter, how far up the collection system does NPDES jurisdiction reach, *i.e.*, where does the “collection system” end and the “user” begin?

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<sup>2</sup> The decision is available on the Board’s website via the following link:  
[http://yosemite.epa.gov/oa/EAB\\_Web\\_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument](http://yosemite.epa.gov/oa/EAB_Web_Docket.nsf/30b93f139d3788908525706c005185b4/34e841c87f346d94852577360068976f!OpenDocument).

- (3) Do municipal satellite collection systems “discharge [ ] a pollutant” within the meaning of the statute and regulations?
- (4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?
- (5) Is the Region’s rationale for regulating municipal satellite collection systems as co-permittees consistent with the references to “municipality” in the regulatory definition of POTW, and the definition’s statement that “[t]he term also means the municipality...which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works”?
- (6) Is the Region’s rationale consistent with the permit application and signatory requirements under NPDES regulations?

See *Blackstone, slip op.* at 18, 20, n. 17.

This regional interpretative statement is, in part, a response to the Board’s decision. It details the legal and policy bases for regulating publicly owned treatment works (“POTWs”) that include municipal satellite collection systems through a co-permittee structure. Region 1’s analysis is divided into five sections. First, the Region provides context for the co-permitting approach by briefly describing the health and environmental impacts associated with poorly maintained sanitary sewer systems. Second, the Region outlines its evolving permitting practice regarding regionally integrated POTWs, particularly its attempts to ensure that such entity’s municipal satellite collection systems are properly maintained and operated. Third, the Region explains the legal authority to include municipal satellite collection systems as co-permittees when permitting regionally integrated POTWs. In this section, the Region answers the questions posed by the Board in the order presented above. Fourth, the Region sets forth the basis for the specific conditions to which the municipal satellite collection systems will be subject as co-permittees. Finally, the Region discusses other considerations informing its decision to employ a co-permittee structure when permitting regionally integrated POTWs.

## I. Background

A sanitary sewer system (SSS) is a wastewater collection system owned by a state or municipality that conveys domestic, industrial and commercial wastewater (and limited amounts of infiltrated groundwater and some storm water runoff ) to a POTW.<sup>3</sup> See 40 C.F.R. § 35.2005(b)(37) (defining “sanitary sewer”). The purpose of these systems is to transport wastewater uninterrupted from its source to a treatment facility. Developed areas that are served by sanitary sewers often also have a separate storm sewer system (*e.g.*, storm drains) that collects and conveys runoff, street wash waters and drainage and discharges them directly to a receiving

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<sup>3</sup> See generally Report to Congress: Impacts and Control of CSOs and SSOs (EPA 833-R-04-001) (2004), from which EPA Region 1 has drawn this background material.

water (*i.e.*, without treatment at a POTW). While sanitary sewers are not designed to collect large amounts of runoff from precipitation events or provide widespread drainage, they typically are built with some allowance for higher flows that occur during periods of high groundwater and storm events. They are thus able to handle minor and controllable amounts of extraneous flow (*i.e.*, inflow and infiltration, or I/I) that enter the system. Inflow generally refers to water other than wastewater—typically precipitation like rain or snowmelt—that enters a sewer system through a direct connection to the sewer. Infiltration generally refers to other water that enters a sewer system from the ground, for example through defects in the sewer.

Municipal sanitary sewer collection systems can consist of a widespread network of pipes and associated components (*e.g.*, pump stations). These systems provide wastewater collection service to the community in which they are located. In some situations, the municipality that owns the collector sewers may not provide treatment of wastewater, but only conveys its wastewater to a collection system that is owned and operated by a different municipal entity (such as a regional sewer district). This is known as a satellite community. A “satellite” community is a sewage collection system owner/operator that does not have ownership of the treatment facility and the wastewater outfall but rather the responsibility to collect and convey the community’s wastewater to a POTW treatment plant for treatment. *See* 75 Fed. Reg. 30395, 30400 (June 1, 2010).

Municipal sanitary sewer collection systems play a critical role in protecting human health and the environment. Proper operation and maintenance of sanitary sewer collection systems is integral to ensuring that wastewater is collected, transported, and treated at POTW treatment plants. Through effective operation and maintenance, collection system operators can maintain the capacity of the collection system; reduce the occurrence of temporary problem situations such as blockages; protect the structural integrity and capacity of the system; anticipate potential problems and take preventive measures; and indirectly improve treatment plant performance by minimizing I/I-related hydraulic overloading.

Despite their critical role in the nation’s infrastructure, many collection systems exhibit poor performance and are subjected to flows that exceed system capacity. Untreated or partially treated overflows from a sanitary sewer system are termed “sanitary sewer overflows” (SSOs). SSOs include releases from sanitary sewers that reach waters of the United States as well as those that back up into buildings and flow out of manholes into city streets.

There are many underlying reasons for the poor performance of collection systems. Much of the nation’s sanitary sewer infrastructure is old, and aging infrastructure has deteriorated with time. Communities also sometimes fail to provide capacity to accommodate increased sewage delivery and treatment demand from increasing populations. Furthermore, institutional arrangements relating to the operation of sewers can pose barriers to coordinated action, because many municipal sanitary sewer collection systems are not entirely owned or operated by a single municipal entity.

The performance and efficiency of municipal sanitary sewer collection systems influence the performance of sewage treatment plants. When the structural integrity of a municipal sanitary sewer collection system deteriorates, large quantities of infiltration (including rainfall-induced

infiltration) and inflow can enter the collection system, causing it to overflow. These extraneous flows are among the most serious and widespread operational challenges confronting treatment works.<sup>4</sup>

Infiltration can be long-term seepage of water into a sewer system from the water table. In some systems, however, the flow characteristics of infiltration can resemble those of inflow, *i.e.*, there is a rapid increase in flow during and immediately after a rainfall event, due, for example, to rapidly rising groundwater. This phenomenon is sometimes referred to as rainfall-induced infiltration.

Sanitary sewer systems can also overflow during periods of normal dry weather flows. Many sewer system failures are attributable to natural aging processes or poor operation and maintenance. Examples include years of wear and tear on system equipment such as pumps, lift stations, check valves, and other moveable parts that can lead to mechanical or electrical failure; freeze/thaw cycles, groundwater flow, and subsurface seismic activity that can result in pipe movement, warping, brittleness, misalignment, and breakage; and deterioration of pipes and joints due to root intrusion or other blockages.

Inflow and infiltration impacts are often regional in nature. Satellite collection systems in the communities farthest from the POTW treatment plant can cause sanitary sewer overflows (“SSOs”) in communities between them and the treatment plant by using up capacity in the interceptors. This can cause SSOs in the interceptors themselves or in the municipal sanitary sewers that lead to them. The implication of this is that corrective solutions often must also be regional in scope to be effective.

The health and environmental risks attributed to SSOs vary depending on a number of factors including location and season (potential for public exposure), frequency, volume, the amount and type of pollutants present in the discharge, and the uses, conditions, and characteristics of the receiving waters. The most immediate health risks associated with SSOs to waters and other areas with a potential for human contact are associated with exposure to bacteria, viruses, and other pathogens.

Human health impacts occur when people become ill due to contact with water or ingestion of water or shellfish that have been contaminated by SSO discharges. In addition, sanitary sewer systems can back up into buildings, including private residences. These discharges provide a direct pathway for human contact with untreated wastewater. Exposure to land-based SSOs typically occurs through the skin via direct contact. The resulting diseases are often similar to those associated with exposure through drinking water and swimming (*e.g.*, gastroenteritis), but may also include illness caused by inhaling microbial pathogens. In addition to pathogens, raw sewage may contain metals, synthetic chemicals, nutrients, pesticides, and oils, which also can be detrimental to the health of humans and wildlife.

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<sup>4</sup> In a 1989 Water Pollution Control Federation survey, 1,003 POTWs identified facility performance problems. Infiltration and inflow was the most frequently cited problem, with 85 percent of the facilities reporting I/I as a problem. I/I was cited as a major problem by 41 percent of the facilities (32 percent as a periodic problem).

## II. Region 1 Past Practice of Permitting POTWs that Include Municipal Satellite Collection Systems

Region 1's practice in permitting regionally integrated POTWs has developed in tandem with its increasing focus on addressing I/I in sewer collection systems, in response to the concerns outlined above. Up to the early 1990s, POTW permits issued by Region 1 generally did not include specific requirements for collection systems. When I/I and the related issue of SSOs became a focus of concern both nationally and within the region in the mid-1990s, Region 1 began adding general requirements to POTW permits that required the permittees to "eliminate excessive infiltration and inflow" and provide an annual "summary report" of activities to reduce I/I. As the Region gathered more information and gained more experience in assessing these reports and activities, it began to include more detailed requirements and reporting provisions in these permits.

MassDEP also engaged in a parallel effort to address I/I, culminating in 2001 with the issuance of MassDEP Policy No. BRP01-1, "Interim Infiltration and Inflow Policy." Among other provisions, this policy established a set of standard NPDES permit conditions for POTWs that included development of an I/I control plan (including funding sources, identification and prioritization of problem areas, and public education programs) and detailed annual reporting requirements (including mapping, reporting of expenditures and I/I flow calculations). Since September 2001, these requirements have been the basis for the standard operation and maintenance conditions related to I/I.

Regional treatment plants presented special issues as I/I requirements became more specific, as it is generally the member communities, rather than the regional sewer district, that own the collection systems that are the primary source of I/I. Before the focus on I/I, POTW permits did not contain specific requirements related to the collection system component of POTWs. Therefore, when issuing NPDES permits to authorize discharges from regionally integrated treatment POTWs, Region 1 had generally only included the legal entity owning and/or operating the regionally centralized wastewater treatment plant as the permittee. As the permit conditions were focused on the treatment plant and its effluent discharge, a permit issued only to the owner or operator of the treatment plant was sufficient to ensure that permit conditions could be fully implemented and that EPA had authority to enforce the permit requirements.

In implementing the I/I conditions, Region 1 initially sought to maintain the same structure, placing the responsibility on the regional sewer district to require I/I activities by the contributing systems and to collect the necessary information from those systems for submittal to EPA. MassDEP's 2001 Interim I/I Policy reflected this approach, containing a condition for regional systems:

((FOR REGIONAL FACILITIES ONLY)) The permittee shall require, through appropriate agreements, that all member communities develop and implement infiltration and inflow control plans sufficient to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitations, or cause overflows from the permittee's collection system.



As existing NPDES permittees, the POTW treatment plants were an obvious locus of regulation. The Region assumed the plants would be in a position to leverage preexisting legal and/or contractual relationships with the satellite collection systems they serve to perform a coordinating function, and that utilizing this existing structure would be more efficient than establishing a new system of direct reporting to EPA by the collection system owners. The Region also believed that the owner/operator of the POTW treatment plant would have an incentive to reduce flow from contributing satellite systems because doing so would improve treatment plant performance and reduce operation costs. While relying on this cooperative approach, however, Region 1 also asserted that it had the authority to require that POTW collection systems be included as NPDES permittees and that it would do so if it proved necessary. Indeed, in 2001 Region 1 acceded to Massachusetts Water Resources Authority's ("MWRA") request to include as co-permittees the contributing systems to the MWRA Clinton wastewater treatment plant ("WWTP") based on evidence provided by MWRA that its relationship with those communities would not permit it to run an effective I/I reduction program for these collection systems. Region 1 also put municipal satellite collection systems on notice that they would be directly regulated through legally enforceable permit requirements if I/I reductions were not pursued or achieved.

In time, the Region realized that its failure to assert direct jurisdiction over municipal satellite dischargers was becoming untenable in the face of mounting evidence that cooperative (or in some cases non-existent) efforts on the part of the POTW treatment plant and associated satellites were failing to comprehensively address the problem of extraneous flow entering the POTW. The ability and/or willingness of regional sewer districts to attain meaningful I/I efforts in their member communities varied widely. The indirect structure of the requirements also tended to make it difficult for EPA to enforce the implementation of meaningful I/I reduction programs.

It became evident to Region 1 that a POTW's ability to comply with CWA requirements depended on successful operation and maintenance of not only the treatment plant but also the collection system. For example, the absence of effective I/I reduction and operation/maintenance programs was impeding the Region's ability to prevent or mitigate the human health and water quality impacts associated with SSOs. Additionally, these excess flows stressed POTW treatment plants from a hydraulic capacity and performance standpoint, adversely impacting effluent quality. *See Exhibit B* (Analysis of extraneous flow trends and SSO reporting for representative systems). Addressing these issues in regional systems was essential, as these include most of the largest systems in terms of flow, population served and area covered.

The Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator represents a necessary and logical progression in its continuing effort to effectively address the serious problem of I/I in sewer collection systems.<sup>5</sup> In light of its past permitting experience and the need to effectively address

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<sup>5</sup> Although the Region has in the past issued NPDES permits only to the legal entities owning and operating the wastewater treatment plant (*i.e.*, only a portion of the "treatment works"), the Region's reframing of permits to include municipal satellite collection systems does not represent a break or reversal from its historical legal position. Region 1 has never taken the legal position that the satellite collection systems are beyond the reach of the CWA and the NPDES permitting program. Rather, the Region as a matter of discretion had merely never determined it

the problem of extraneous flow on a system-wide basis, Region 1 decided that it was necessary to refashion permits issued to regionally integrated POTWs to include all owners/operators of the treatment works (*i.e.*, the regional centralized POTW treatment plant and the municipal satellite collection systems).<sup>6</sup> Specifically, Region 1 determined that the satellite systems should be subject as co-permittees to a limited set of O&M-related conditions on permits issued for discharges from regionally integrated treatment works. These conditions pertain only to the portions of the POTW collection system that the satellites own. This ensures maintenance and pollution control programs are implemented with respect to all portions of the POTW. Accordingly, since 2005, Region 1 has generally included municipal satellite collection systems as co-permittees for limited purposes while it required the owner/operator of the treatment plant, as the primary permittee, to comply with the full array of NPDES requirements, including secondary treatment and water-quality based effluent limitations. The Region has identified 25 permits issued by the Region to POTWs in New Hampshire and Massachusetts that include municipal satellite collection systems as co-permittees. *See Exhibit A.* The 25 permits include a total of 55 satellite collection systems as co-permittees.

### III. Legal Authority

The Region's prior and now superseded practice of limiting the permit only to the legal entity owning and/or operating the wastewater treatment plant had never been announced as a regional policy or interpretation. Similarly, the Region's practice of imposing NPDES permit conditions on the municipal collection systems in addition to the treatment plant owner/operator has also never been expressly announced as a uniform, region-wide policy or interpretation. Upon consideration of the Board's decision, described above, Region 1 has decided to supply a clearer, more detailed explanation regarding its use of a co-permittee structure when issuing NPDES permits to regionally integrated POTWs. In this section, the Region addresses the questions posed by the Board in the *Upper Blackstone* decision referenced above.

*(1) In the case of a regionally integrated POTW composed of municipal satellite collection systems owned by different entities and a treatment plant owned by another, is the scope of*

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necessary to exercise its statutory authority to directly reach these facilities in order to carry out its NPDES permitting obligations under the Act.

Although the Region adopted a co-permittee structure to deal I/I problems in the municipal satellite collection systems, that decision does nothing to foreclose a permitting authority from opting for alternative permitting approaches that are consistent with applicable law. Each permitting authority has the discretion to determine which permitting approach best achieves the requirements of the Act based on the facts and circumstances before it. Upon determining that direct regulation of a satellite collection system via an NPDES permit is warranted, a permitting authority has the discretion to make the owner or operator of the collection system a co-permittee, or to cover it through an individual or general permit. Nothing in EPA regulations precludes the issuance of a separate permit to an entity that is part of the larger system being regulated. As in the pretreatment program, there are many ways to ensure that upstream collection systems are adequately contributing to the successful implementation of a POTW's permit requirements.

<sup>6</sup> EPA has "considerable flexibility in framing the permit to achieve a desired reduction in pollutant discharges." *Natural Resources Defense Council, Inc. v. Costle*, 568 F.2d 1369, 1380 (D.C.Cir.1977). ("[T]his ambitious statute is not hospitable to the concept that the appropriate response to a difficult pollution problem is not to try at all.").

*NPDES authority limited to owners/operators of the POTW treatment plant, or does the authority extend to owners/operators of the municipal satellite collection systems that convey wastewater to the POTW treatment plant?*

The scope of NPDES authority extends beyond the owners/operators of the POTW treatment plant to include the owners/operators of the municipal satellite collection systems conveying wastewater to the treatment plant for the reasons discussed below.

The CWA prohibits the “discharge of any pollutant by any person” from any point source to waters of the United States, except, *inter alia*, in compliance with an NPDES permit issued by EPA or an authorized state pursuant to Section 402 of the CWA. CWA § 301, 402(a)(1); 40 C.F.R. § 122.1(b).

“Publicly owned treatment works” are facilities that, when they discharge, are subject to the NPDES program. Statutorily, POTWs as a class must meet performance-based effluent limitations based on available wastewater treatment technology. *See* CWA § 402(a)(1) (“[t]he Administrator may...issue a permit for the discharge of any pollutant...upon condition that such discharge will meet (A) all applicable requirements under [section 301]...”); § 301(b)(1)(B) (“In order to carry out the objective of this chapter there shall be achieved...for publicly owned treatment works in existence on July 1, 1977...effluent limitations based upon secondary treatment[.]”); *see also* 40 C.F.R. pt 133. In addition to secondary treatment requirements, POTWs are also subject to water quality-based effluent limits if necessary to achieve applicable state water quality standards. *See* CWA § 301(b)(1)(C). *See also* 40 C.F.R. § 122.44(a)(1) (“...each NPDES permit shall include...[t]echnology-based effluent limitations based on: effluent limitations and standards published under section 301 of the Act”) and (d)(1) (same for water quality standards and state requirements). NPDES regulations similarly identify the “POTW” as the entity subject to regulation. *See* 40 C.F.R. § 122.21(a) (requiring “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information).

The CWA and its implementing regulations broadly define “POTW” to include not only wastewater treatment plants but also the sewer systems and associated equipment that collect wastewater and convey it to the treatment plants. When a municipal satellite collection system conveys wastewater to the POTW treatment plant, the scope of NPDES authority extends to both the owner/operators of the treatment facility and the municipal satellite collection system, because the POTW is discharging pollutants.

Under section 212 of the Act,

“(2)(A) The term ‘treatment works’ means any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature to implement section 1281 of this title, or necessary to recycle or reuse water at the most economical cost over the estimated life of the works, including intercepting sewers, outfall sewers, *sewage collection systems* [emphasis added], pumping, power, and other equipment, and their appurtenances; extensions, improvements, remodeling, additions, and alterations thereof; elements essential to provide a reliable recycled supply such as

standby treatment units and clear well facilities; and any works, including site acquisition of the land that will be an integral part of the treatment process (including land used for the storage of treated wastewater in land treatment systems prior to land application) or is used for ultimate disposal of residues resulting from such treatment.

(B) In addition to the definition contained in subparagraph (A) of this paragraph, ‘treatment works’ means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, or industrial waste, including waste in combined storm water and *sanitary sewer systems* [emphasis added]. Any application for construction grants which includes wholly or in part such methods or systems shall, in accordance with guidelines published by the Administrator pursuant to subparagraph (C) of this paragraph, contain adequate data and analysis demonstrating such proposal to be, over the life of such works, the most cost efficient alternative to comply with sections 1311 or 1312 of this title, or the requirements of section 1281 of this title.”

EPA has defined POTW as follows:

“The term *Publicly Owned Treatment Works* or *POTW* [emphasis in original]...includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.”

See 40 C.F.R. §§ 403.3(q) and 122.2.

Thus, under the CWA and its implementing regulations, wastewater treatment plants and the sewer systems and associated equipment that collect wastewater and convey it to the treatment plants fall within the broad definition of “POTW.”

The statutory and regulatory definitions plainly encompass both the POTW treatment plant and municipal satellite collection systems conveying wastewater to the POTW treatment plant even if the treatment plant and the satellite collection system have different owners. Municipal satellite collection systems indisputably fall within the definition of a POTW. First, they are “sewage collection systems” under section 212(A) and “sanitary sewer systems” under section 212(B). Second, they convey wastewater to a POTW treatment plant for treatment under 40 C.F.R. § 403.3(q)). The preamble to the rule establishing the regulatory definition of POTW supports the reading that the treatment plant comprises only one portion of the POTW. See 44 Fed. Reg. 62260, 62261 (Oct. 29, 1979).<sup>7</sup> Consistent with Region 1’s interpretation, courts have similarly

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<sup>7</sup> “A new provision...defining the term ‘POTW Treatment Plant’ has been added to avoid an ambiguity that now exists whenever a reference is made to a POTW (publicly owned treatment works). ...[T]he existing regulation defines a POTW to include both the treatment plant and the sewer pipes and other conveyances leading to it. As a result, it is unclear whether a particular reference is to the pipes, the treatment plant, or both. The term “POTW

taken a broad reading of the terms treatment works and POTW.<sup>8</sup> Finally, EPA has long recognized that a POTW can be composed of different parts, and that sometimes direct control is required under a permit for all parts of the POTW system, not just the POTW treatment plant segment. See *Multijurisdictional Pretreatment Programs Guidance Manual*, Office of Water (4203) EPA 833-B-94-005 (June 1994) at 19. (“If the contributing jurisdiction owns or operates the collection system within its boundaries, then it is a co-owner or operator of the POTW. As such, it can be included on the POTW’s NPDES permit and be required to develop a pretreatment program. Contributing jurisdictions should be made co-permittees where circumstances or experience indicate that it is necessary to ensure adequate pretreatment program implementation.”). The Region’s interpretation articulated here is consistent with the precepts of the pretreatment program, which pertains to the same regulated entity, i.e., the POTW.<sup>9</sup>

Thus, under the statutory and regulatory definitions, a satellite collection system owned by one municipality that transports municipal sewage to another portion of the POTW owned by another municipality can be classified as part of a single integrated POTW system discharging to waters of the U.S.

(2) *If the latter, how far up the collection system does NPDES jurisdiction reach, i.e., where does the “collection system” end and the “user” begin?*

NPDES jurisdiction extends beyond the treatment plant to the outer boundary of the municipally-owned sewage collection systems, that is, to the outer bound of those sewers whose purpose is to transport wastewater for others to a POTW treatment plant for treatment, as explained below.

As discussed in response to Question 1 above, the term “treatment works” is defined to include “sewage collection systems.” CWA § 212. In order to identify the extent of the sewage collection system for purposes of co-permittee regulation—i.e., to identify the boundary between the portions of the collection system that are subject to NPDES requirements and those that are not—Region 1 is relying on EPA’s regulatory interpretation of the term “sewage collection system.” In relevant part, EPA regulations define “sewage collection system” at 40 C.F.R. § 35.905 as:

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treatment plant” will be used to designate that portion of the municipal system which is actually designed to provide treatment to the wastes received by the municipal system.”

<sup>8</sup> See, e.g., *United States v. Borowski*, 977 F.2d 27, 30 n.5 (1st Cir. 1992) (“We read this language [POTW definition] to refer to such sewers, pipes and other conveyances that are publicly owned. Here, for example, the City of Burlington’s sewer is included in the definition because it conveys waste water to the Massachusetts Water Resource Authority’s treatment works.”); *Shanty Town Assoc. v. Envtl. Prot. Agency*, 843 F.2d 782, 785 (4th Cir. 1988) (“As defined in the statute, a ‘treatment work’ need not be a building or facility, but can be any device, system, or other method for treating, recycling, reclaiming, preventing, or reducing liquid municipal sewage and industrial waste, including storm water runoff.”) (citation omitted); *Comm. for Consideration Jones Fall Sewage System v. Train*, 375 F. Supp. 1148, 1150-51 (D. Md. 1974) (holding that NPDES wastewater discharge permit coverage for a wastewater treatment plant also encompasses the associated sanitary sewer system and pump stations under § 1292 definition of “treatment work”).

<sup>9</sup> The fact that EPA has endorsed a co-permittee approach in addressing pretreatment issues in situations where the downstream treatment plant was unable to adequately regulate industrial users to the collection system in another jurisdiction reinforces the approach taken here.

“.... each, and all, of the common lateral sewers, within a publicly owned treatment system, which are primarily installed to receive waste waters directly from facilities which convey waste water from individual structures or from private property and which include service connection “Y” fittings designed for connection with those facilities. The facilities which convey waste water from individual structures, from private property to the public lateral sewer, or its equivalent, are specifically excluded from the definition....”

Put otherwise, a municipal satellite collection system is subject to NPDES jurisdiction under the Region’s approach insofar as it transports wastewater for others to a POTW treatment plant for treatment. This test (i.e., common sewer installed to receive and carry waste water from others) allows Region 1 to draw a principled, predictable and readily ascertainable boundary between the POTW’s collection system and the users. This test would exclude, for example, single user branch drainpipes that collect and transport wastewater from plumbing fixtures in a commercial building or public school to the common lateral sewer, just as service connections from private residential structures to lateral sewers are excluded. This type of infrastructure would not be considered part of the collection system, because it is not designed to receive and carry wastewaters from other users. Rather, it is designed to transport its users’ wastewater to such a common collection system at a point further down the sanitary sewer system.

EPA’s reliance on the definition of “sewage collection system” from the construction grants regulations for interpretative guidance is reasonable because these regulations at 40 C.F.R. Part 35, subpart E pertain to grants specifically for POTWs, the entity that is the subject of this NPDES policy. Additionally, the term “sewage collection systems” expressly appears in the definition of treatment works under section 212 of the Act as noted above.

*(3) Do municipal satellite collection systems “discharge [] a pollutant” within the meaning of the statute and regulations?*

Yes, the collection system “discharges a pollutant” because it adds pollutants to waters of the U.S. from a point source. This position is consistent with the definition of “discharge of a pollutant” at 40 C.F.R. § 122.<sup>10</sup> The fact that a collection system may be located in the upper reaches of the POTW and not necessarily near the ultimate discharge point at the treatment plant, or that its contribution may be commingled with other wastewater flows prior to the discharge point, is not material to the question of whether it “discharges” a pollutant and consequently may be subject to conditions of an NPDES permit issued for discharges from the POTW.<sup>11</sup> 40 C.F.R. § 122.2 defines “discharge of a pollutant” as follows:

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<sup>10</sup> This position differs from that taken by the Region in the *Upper Blackstone* litigation. There, the Region stated that the treatment plant was the discharging entity for regulatory purposes. The Region has clarified this view upon further consideration of the statute, EPA’s own regulations and case law and determined that a municipal satellite collection system in a POTW is a discharging entity for regulatory purposes.

<sup>11</sup> As explained more fully below, non-domestic contributors of pollutants to the collection system and treatment plant do not require NPDES permits because they are regulated through the pretreatment program under Section 307 of the CWA and are specifically excluded from needing an NPDES permit. 40 C.F.R. § 122.3(c).

“Discharge of a pollutant means:

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

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

POTW treatment plants as well as the municipal satellite collection systems that comprise portions of the larger POTW and that transport flow to the POTW treatment plant clearly add pollutants or combinations of pollutants to waters of the U.S. and to waters of the “contiguous zone” and are thus captured under sections (a) and (b) of this definition.<sup>12</sup>

*(4) Are municipal satellite collection systems “indirect dischargers” and thus excluded from NPDES permitting requirements?*

No, municipal satellite collection systems that convey wastewater from domestic sources to another portion of the POTW for treatment are not “indirect dischargers” to the POTW.

Section 307(b) of the Act requires EPA to establish regulatory pretreatment requirements to prevent the “introduction of pollutants into treatment works” that interfere, pass through or are otherwise incompatible with such works. Section 307 is implemented through the General Pretreatment Regulations for Existing and New Sources of Pollution (40 C.F.R. Part 403) and categorical pretreatment standards (40 C.F.R. Parts 405-471). Section 403.3(i) defines “indirect discharger” as “any non-domestic” source that introduces pollutants into a POTW and is regulated under pretreatment standards pursuant to CWA § 307(b)-(d). The source of an indirect discharge is termed an “industrial user.” *Id.* at § 403.3(j). Under regulations governing the

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<sup>12</sup> Some municipal satellite collection systems have argued that the addition of pollutants to waters of the United States from pipes, sewers or other conveyances that go to a *treatment plant* are not a “discharge of a pollutant” under 40 C.F.R. § 122.2. This is erroneous. Only one category of such discharges is excluded: indirect discharges. For the reasons explained below in section 4, the satellite system discharges at issue here are not indirect discharges. It is correct that the discharge of wastewater that does not go to the treatment works is included as a discharge under the definition. However, interpreting the *inclusion* of such discharges under the definition as categorically *excluding* the conveyance of other discharges that do go to the treatment works is not a reasonable reading of the regulation. This argument is also flawed in that it incorrectly equates “treatment works,” the term used in the definition above, with “treatment plant.” To interpret “treatment works” as it appears in the regulatory definition of “discharge of a pollutant” as consisting of only the POTW treatment plant would be inconsistent with the definition of “treatment works” at 40 C.F.R. § 403.3(q), which expressly includes the collection system. *See also* § 403.3(r) (defining “POTW Treatment Plant” as “*that portion* [emphasis added] of the POTW which is designed to provide treatment (including recycling and reclamation) of municipal sewage and industrial waste.”)

NPDES permitting program, the term “indirect discharger” is defined as “a non-domestic discharger introducing ‘pollutants’ to a ‘publicly owned treatment works.’” 40 C.F.R. § 122.2. Indirect dischargers are excluded from NPDES permit requirements at 40 C.F.R. § 122.3(c), which provides, “The following discharges do not require an NPDES permit: . . . The introduction of sewage, industrial wastes or other pollutants into publicly owned treatment works by indirect dischargers.”

Municipal satellite collection satellite systems are not indirect dischargers as that term is defined under part 122 or 403 regulations. Unlike indirect dischargers, municipal satellite collection systems are not a non-domestic discharger “introducing pollutants” to POTWs as defined in 40 C.F.R. § 122.2. Instead, they themselves fall within the definition of POTW, whose components consist of the municipal satellite collection system owned and operated by one POTW and a treatment system owned and operated by another POTW. Additionally, they are not a non-domestic *source* regulated under section 307(b) that introduces pollutants into a POTW within the meaning of § 403.3(i). Rather, they are part of the POTW and collect and convey municipal sewage from industrial, commercial and domestic users of the POTW.

The Region’s determination that municipal satellite collection systems are not indirect dischargers is, additionally, consistent with the regulatory history of the term indirect discharger. The 1979 revision of the part 122 regulations defined “indirect discharger” as “a non-municipal, non-domestic discharger introducing pollutants to a publicly owned treatment works, which introduction does not constitute a ‘discharge of pollutants’...” *See* National Pollutant Discharge Elimination System, 44 Fed. Reg. 32854, 32901 (June 7, 1979). The term “non-municipal” was removed in the Consolidated Permit Regulations, 45 Fed. Reg. 33290, 33421 (May 19, 1980) (defining “indirect discharger” as “a nondomestic discharger...”). Although the change was not explained in detail, the substantive intent behind this provision remained the same. EPA characterized the revision as “minor wording changes.” 45 Fed. Reg. at 33346 (Table VII: “Relationship of June 7[, 1979] Part 122 to Today’s Regulations”). The central point again is that under any past or present regulatory incarnation, municipal satellite collection systems, as POTWs, are not within the definition of “indirect discharger,” which is limited to non-domestic sources subject to section 307(b) that introduce pollutants to POTWs.

*(5) How is the Region’s rationale consistent with the references to “municipality” in the regulatory definition of POTW found at 40 C.F.R. § 403.3(q), and the definition’s statement that “[t]he term also means the municipality....which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works?”*

There is no inconsistency between the Region’s view that municipally-owned satellite collection systems fall within the definition of POTW, and the references to municipality in 40 C.F.R. § 403.3(q), including the final sentence of the regulatory definition of POTW in the pretreatment regulations.

The Region’s co-permitting rationale is consistent with the first part of the pretreatment program’s regulatory definition of POTW, because the Region is only asserting NPDES jurisdiction over satellite collection systems that are owned by a “State or municipality (as defined by section 502(4) of the Act).” The term “municipality” as defined in CWA § 502(4)



“means a city, town, borough, county, parish, district, association, or other public body created by or pursuant to State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes...” Thus, in order to qualify under this definition, a wastewater collection system need only be “owned by a State or municipality.” There is no requirement that the constituent components of a regionally integrated POTW, *i.e.*, the collection system and regional centralized POTW treatment plant, be owned by the same State or municipal entity.

Furthermore, there is no inconsistency between the Region’s view that a satellite collection system is part of a POTW, and the final sentence of the regulatory definition of POTW in the pretreatment regulations. As noted above, the sentence provides that “POTW” may “also” mean a municipality which has jurisdiction over indirect discharges to and discharges from the treatment works. This is not a limitation because of the use of the word “also” (contrast this with the “only if” language in the preceding sentence of the regulatory definition).

*(6) How does the Region’s rationale comport with the permit application and signatory requirements under NPDES regulations?*

“Any person who discharges or proposes to discharge pollutants”... must comply with permit application requirements set forth in 40 C.F.R. § 122.21 (“Application for a Permit”), including the duty to apply in subsection 122.21(a). It is the operator’s duty to obtain a permit. *See* 40 C.F.R. § 122.21(b). An operator of a sewage collection system in a regionally integrated treatment works is operating a portion of the POTW and thus can be asked to submit a separate permit application pursuant to § 122.21(a) (requiring applicants for “new and existing POTWs” to submit information required in 122.21(j),” which in turn requires “all POTWs,” among others, to provide permit application information). In the Region’s experience, however, sufficient information about the collection system can be obtained from the treatment plant operator’s permit application. The NPDES permit application for POTWs solicits information concerning portions of the POTW beyond the treatment plant itself, including the collection system used by the treatment works. *See* 40 C.F.R. § 122.21(j)(1). Where this information is not sufficient for writing permit conditions that apply to a separately owned municipal satellite system, EPA can request that the satellite system to submit an application with the information required in 122.21(j), or alternatively use its authority under CWA section 308 to solicit the necessary information. Because Region 1 believes that it will typically receive information sufficient for NPDES permitting purposes from the POTW treatment plant operator’s application, the Region will formalize its historical practice by issuing written waivers to exempt municipal satellite collection systems from permit application and signatory requirements in accordance with 40 C.F.R. § 122.21(j).<sup>13</sup> To the extent the Region requires additional information, it intends to use its information collection authority under CWA § 308.

#### IV. Basis for the Specific Conditions to which the Municipal Satellite Collection Systems are Subject as Co-permittees

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<sup>13</sup> EPA may waive applications for municipal satellite collection systems, when requiring such applications may result in duplicative or immaterial information. The Regional Administrator (“RA”) may waive any requirement of this paragraph if he or she has access to substantially identical information. 40 C.F.R. § 122.21(j). *See generally*, 64 Fed. Reg. 42440 (August 4, 1999). The RA may also waive any application requirement that is not of material concern for a specific permit. *Id.*

Section 402(a) of the CWA is the legal authority for extending NPDES conditions to all portions of the municipally-owned treatment works to ensure proper operation and maintenance and to reduce the quantity of extraneous flow into the POTW. This section of the Act authorizes EPA to issue a permit for the “discharge of pollutants” and to prescribe permit conditions as necessary to carry out the provisions of the CWA, including Section 301 of the Act. Among other things, Section 301 requires POTWs to meet performance-based requirements based on secondary treatment technology, as well as any more stringent requirements of State law or regulation, including water quality standards. *See* CWA § 301(b)(1)(B),(C).

The Region imposes requirements on co-permittees when it determines that they are necessary to assure continued achievement of effluent limits based on secondary treatment requirements and state water quality standards in accordance with sections 301 and 402 of the Act, and to prevent unauthorized discharges of sewage from downstream collection systems. With respect to achieving effluent limits, the inclusion of the satellite systems as co-permittees may be necessary when high levels of I/I dilute the strength of influent wastewater and increase the hydraulic load on treatment plants, which can reduce treatment efficiency (*e.g.*, result in violations of technology-based percent removal limitations for BOD and TSS due to less concentrated influent, or violation of other technology-based or water quality-based effluent limitations due to reduction in treatment efficiency). Excess flows from an upstream collection system can also lead to bypassing a portion of the treatment process, or in extreme situations make biological treatment facilities inoperable (*e.g.*, wash out the biological organisms that treat the waste).

By preventing excess flows, the co-permittee requirements will also reduce water quality standards violations that result from SSOs by lessening their frequency and extent. *See Exhibit B* (Analysis of extraneous flow trends and SSO reporting for representative systems). SSOs that reach waters of the U.S. are discharges in violation of section 301(a) of the CWA to the extent not authorized by an NPDES permit.

Imposing standard permit conditions on the satellite communities may be necessary to give full effect to some of the standard permit conditions applicable to all NPDES permits at 40 C.F.R. § 122.41 . To illustrate, NPDES permitting regulations require standard conditions that “apply to all NPDES permits,” pursuant to 40 C.F.R. § 122.41, including a duty to mitigate and to properly operate and maintain “all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit.” *Id.* at § 122.41(d), (e). If the owner or operator of a downstream POTW treatment plant is unable, due to legal constraints for example, or unwilling to ensure that upstream collection systems are implementing requirements concerning the collection system, such as I/I requirements, making the upstream POTW collection system subject to its own permit requirements may be the only or best available option to give full effect to these permit obligations.

## V. Conclusion

For all the reasons above, Region 1 has determined that it is reasonable to, as necessary, directly regulate municipal satellite collection systems as co-permittees when issuing NPDES permits for discharges from regionally integrated treatment works.

**Exhibit A**

<b>Name</b>	<b>Issue Date</b>
Massachusetts Water Resources Authority – Clinton (NPDES Permit No. MA0100404)	September 27, 2000
City of Brockton (NPDES Permit No. MA0101010)	May 11, 2005
City of Marlborough (NPDES Permit No. MA0100480)	May 26, 2005
Westborough Wastewater Treatment Plant (NPDES Permit No. MA0100412)	May 20, 2005
Lowell Regional Wastewater Utilities (NPDES Permit No. MA0100633)	September 1, 2005
Town of Webster Sewer Department (NPDES Permit No. MA0100439)	March 24, 2006
Town of South Hadley, Board of Selectmen (NPDES Permit No. MA0100455)	June 12, 2006
City of Leominster (NPDES Permit No. MA0100617)	September 28, 2006
Hoosac Water Quality District (NPDES Permit No. MA0100510)	September 28, 2006
Board of Public Works, North Attleborough (NPDES Permit No. MA0101036)	January 4, 2007
Town of Sunapee (NPDES Permit No. 0100544)	February 21, 2007
Lynn Water and Sewer Commission (NPDES Permit No. MA0100552)	March 3, 2007
City of Concord (NPDES Permit No. NH0100331)	June 29, 2007
City of Keene (NPDES Permit No. NH0100790)	August 24, 2007
Town of Hampton (NPDES No. NH0100625)	August 28, 2007
Town of Merrimack, NH (NPDES No. NH0100161)	September 25, 2007
City of Haverhill (NPDES Permit No. MA0101621)	December 5, 2007
Greater Lawrence Sanitary District (NPDES Permit No. MA0100447)	August 11, 2005
City of Pittsfield, Department of Public Works (NPDES No. MA0101681)	August 22, 2008

City of Manchester (NPDES No. NH0100447)	September 25, 2008
City of New Bedford (NPDES Permit No. MA0100781)	September 28, 2008
Winnepesaukee River Basin Program Wastewater Treatment Plant (NPDES Permit No. NH0100960)	June 19, 2009
City of Westfield (NPDES Permit No. MA0101800)	September 30, 2009
Hull Permanent Sewer Commission (NPDES Permit No. MA0101231)	September 1, 2009
Gardner Department of Public Works (NPDES Permit No. MA0100994)	September 30, 2009

## **Exhibit B**

### **Analysis of extraneous flow trends and SSO reporting for representative systems**

#### **I. Representative POTWS**

The **South Essex Sewer District (SESD)** is a regional POTW with a treatment plant in Salem, Massachusetts. The SESD serves a total population of 174,931 in six communities: Beverly, Danvers, Marblehead, Middleton, Peabody and Salem. The **Charles River Pollution Control District (CRPCD)** is a regional POTW with a treatment plant in Medway, Massachusetts. The CRPCD serves a total population of approximately 28,000 in four communities: Bellingham, Franklin, Medway and Millis. The CRPCD has been operating since 2001 under a permit that places requirements on the treatment plant to implement I/I reduction programs with the satellite collection systems, while SESD's existing permit does not include specific I/I requirements related to the satellite collection systems, in contrast to Region 1's current practice of including the satellite collection systems as co-permittees.

#### **II. Comparison of flows to standards for nonexcessive infiltration and I/I**

Flow data from the facilities' discharge monitoring reports (DMRs) are shown in comparison to the EPA standard for nonexcessive infiltration/inflow (I/I) of 275 gpcd wet weather flow and the EPA standard for nonexcessive infiltration of 120 gallons per capita per day (gpcd) dry weather flow; the standards are multiplied by population served for comparison with total flow from the facility. See *I/I Analysis and Project Certification*, EPA Ecol. Pub. 97-03 (1985); 40 CFR 35.2005(b)(28) and (29).

Figures 1 and 2 show the daily maximum flows (the highest flow recorded in a particular month) for the CRPCD and SESD, respectively, along with monthly precipitation data from nearby weather stations. Both facilities experience wet weather flows far exceeding the standard for nonexcessive I/I, particularly in wet months, indicating that these facilities are receiving high levels of inflow and wet weather infiltration.

Figure 1. CRPCD Daily Maximum Flow Compared to Nonexcessive I/I Standard

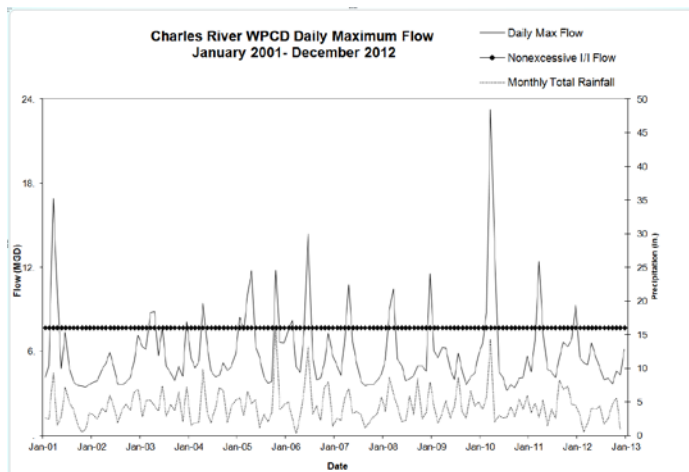
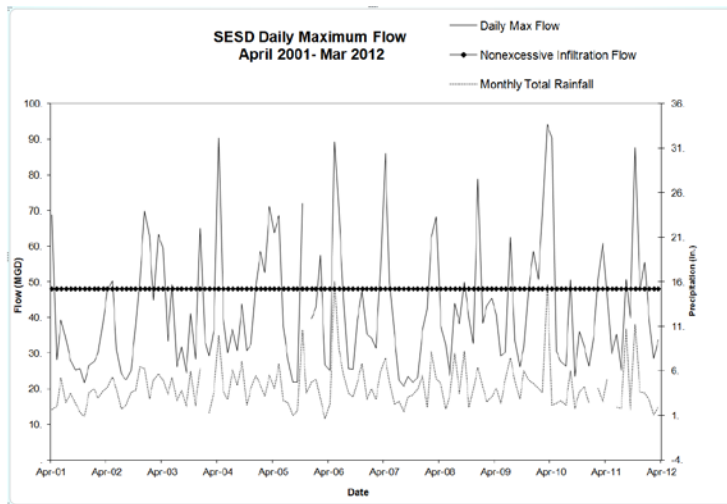


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



Figures 3 and 4 shows the average flows for the CRPCD and SESD, which exceed the nonexcessive infiltration standard for all but the driest months. This indicates that these systems experience high levels of groundwater infiltration into the system even during dry weather.

Figure 3. CRPCD 12 Month Average Flow Compared to Nonexcessive Infiltration Standard

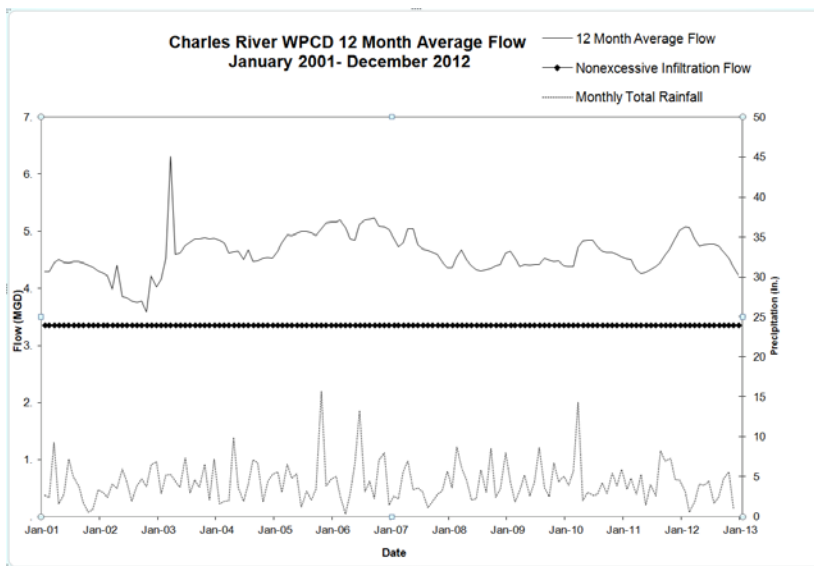
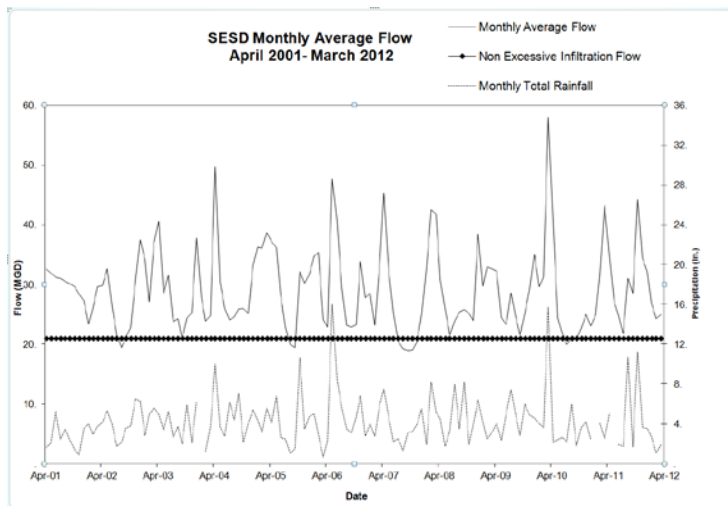


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard



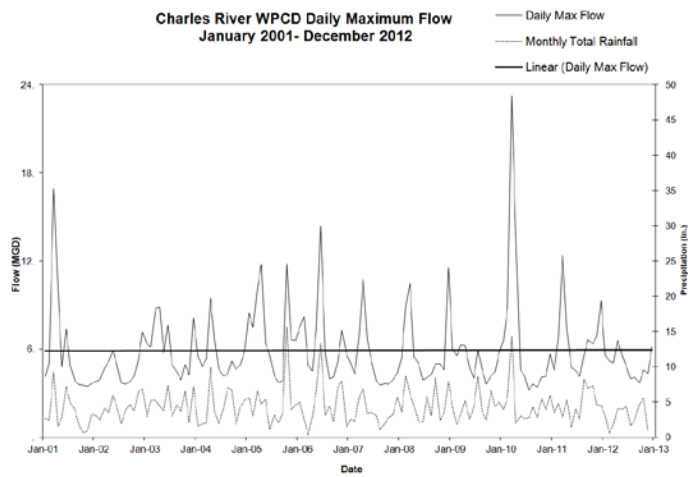
## II. Flow Trends

Successful I/I reduction programs should result in decreases in wet weather flows to the treatment plant over the long term. Figures 5 and 6 show the trend in maximum daily flows since 2001. The maximum daily flow reflects the highest wet weather flow for each month. Charts are shown for both the reported maximum daily flow and for a one year rolling average of the maximum daily flow (provided to reduce the impact of seasonality on the regression results). The linear regressions indicates a weak trend over this time period of increasing maximum daily flow; while most of the variability from year to year is due to changes in precipitation, the trends are generally inconsistent with reduction in maximum daily flow over this time period. This indicates that I/I has not been reduced in either system.



Figure 5. CRPCD Daily Maximum Flow Trends

a. Reported Daily Maximum Flows



b. One Year Rolling Average of Daily Maximum Flows

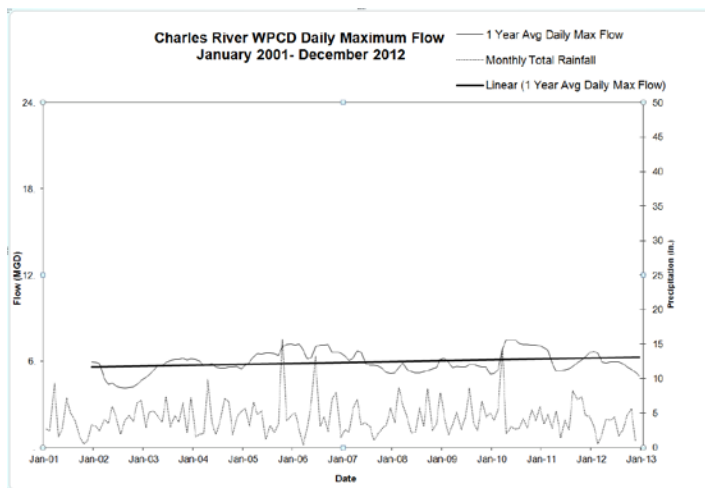
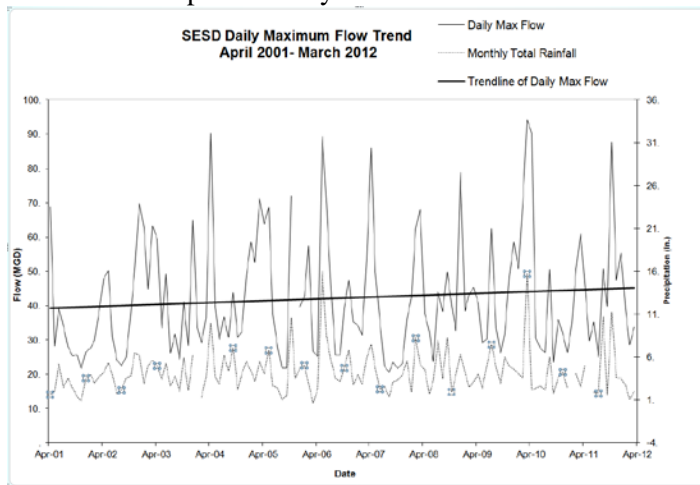
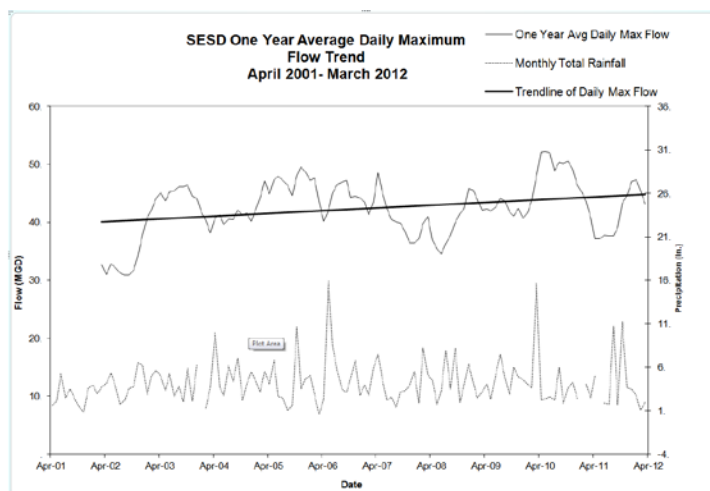


Figure 6. SESD Daily Maximum Flow Trend

a. Reported Daily Maximum Flows



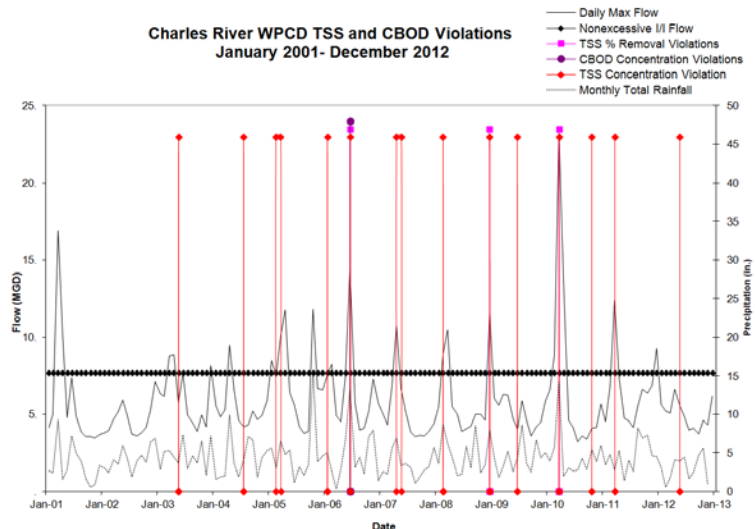
b. One Year Rolling Average of Daily Maximum Flows



### III. Violations Associated with Wet Weather Flows

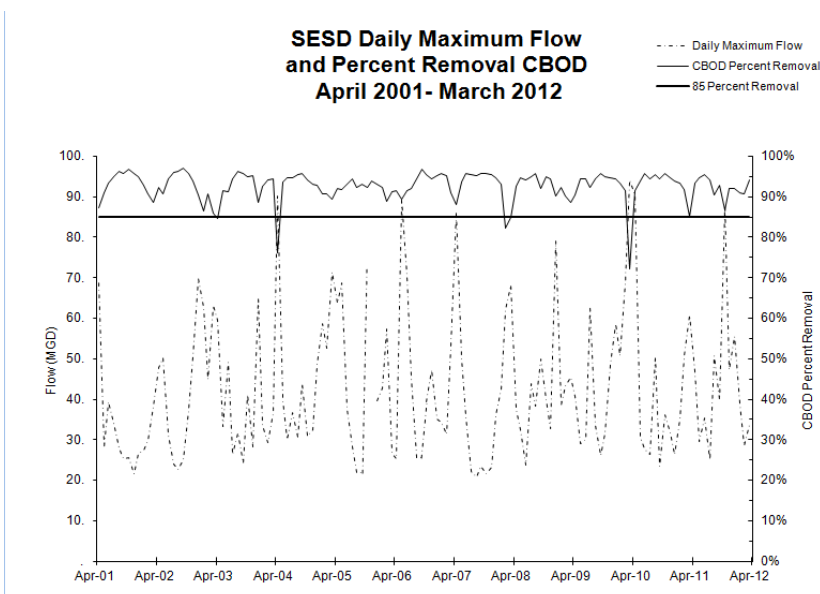
The CRPCD has experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Thirteen of the nineteen violations occurred during months when daily maximum flows exceeded the EPA standard.

Figure 7. CRPCD CBOD and TSS Effluent Limit Violations



In addition, SESD has been unable to achieve the secondary treatment requirement of 85% CBOD removal, also related to I/I. Figure 8 shows SESD's results for removal of CBOD, in percentage, as compared to maximum daily flow. SESD had three months where CBOD removal fell below 85%, all during months with high maximum daily flows. While SESD's current permit requires 85% removal in dry weather, so that these excursions did not constitute permit violations, SESD's proposed draft permit does not limit this requirement to dry weather. Relief from the 85% removal requirement is allowed only when the treatment plant receives flows from CSOs or if it receives less concentrated influent wastewater from separate sewers that is not the result of excessive I/I (including not exceeding the 275 gpcpd nonexcessive I/I standard). 40 CFR § 133.103(a) and (d).

Figure 8. SESD CBOD Percent Removal



#### IV. SSO Reporting

In addition, both of these regional POTWs have experienced SSOs within the municipal satellite collection systems. In the SEDS system, Beverly, Danvers, Marblehead and Peabody have reported SSOs between 2006 and 2008, based on data provided by MassDEP. In the CRPCD system, Bellingham reported SSOs in its system between 2006 and 2009.

### **Exhibit C**

#### Form of Regional Administrator's or Authorized Delegate's Waiver of Permit Application Requirements for Municipal Satellite Collection Systems



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
REGION 1  
1 CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023

#### **Re: Waiver of Permit Application and Signatory Requirements for [Municipal Satellite Sewage Collection System]**

Dear \_\_\_\_\_:

Under NPDES regulations, all POTWs must submit permit application information set forth in 40 C.F.R. § 122.21(j) unless otherwise directed. Where the Region has “access to substantially identical information,” the Regional Administrator [or Authorized Delegate] may waive permit application requirements for new and existing POTWs. *Id.* Pursuant to my authority under this regulation, I am waiving NPDES permit application and signatory requirements applicable to the above-named municipal satellite collection systems.

Although EPA has the authority to require municipal satellite collection systems to submit individual permit applications, in this case I find that requiring a single permit application executed by the regional POTW treatment plant owner/operator will deliver “substantially identical information,” and will be more efficient, than requiring separate applications from each municipal satellite collection system owner/operator. Municipal satellite collection system owners/operators are expected to consult and coordinate with the regional POTW treatment plant operators to ensure that any information provided to EPA about their respective entities is accurate and complete. In the event that EPA requires additional information, it may use its information collection authority under CWA § 308. 33 U.S.C. § 1318.

This notice reflects my determination based on the specific facts and circumstances in this case. It is not intended to bind the agency in future determinations where a separate permit for municipal satellites would not be duplicative or immaterial.

If you have any questions or would like to discuss this decision, please contact [EPA Contact] at [Contact Info].

Sincerely,

Regional Administrator

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND - REGION I  
ONE CONGRESS STREET, SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023**

**FACT SHEET**

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

NPDES PERMIT NO: **MA0100501**

NAME AND ADDRESS OF APPLICANT:

**South Essex Sewerage District  
P.O. Box 989  
50 Fort Avenue  
Salem, MA 01970**

The municipalities of Beverly, Danvers, Marblehead, Middleton, Peabody, and Salem, are co-permittees for specific activities required by the permit. See Sections VI (SESD and all co-permittees) and VII (Marblehead only) of this fact sheet and Sections I.C., I.D., I.F. and I.G of the draft permit. The responsible parties are:

**City of Beverly  
c/o City Engineer  
Beverly City Hall  
191 Cabot Street  
Beverly, MA 01915**

**Town of Danvers  
c/o Town Engineer  
Public Works Engineering Division  
1 Burroughs Street  
Danvers, MA 01923**

**Town of Marblehead  
c/o Superintendent  
Water/Sewer Department  
P.O. Box 1108  
Marblehead, MA 01945**

**Town of Middleton  
c/o Superintendent of  
Public Works  
195 North Main Street  
Middleton, MA 01949**

**City of Peabody  
c/o Director of Public Services  
50 Farm Avenue  
Peabody, MA 01960**

**City of Salem  
c/o City Engineer  
120 Washington Street  
4<sup>th</sup> Floor  
Salem, MA 01970**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**South Essex Sewerage District  
50 Fort Avenue  
Salem, MA 01970**

RECEIVING WATERS: **Salem Sound (North Coastal Watershed, Segment MA 93-25)**

CLASSIFICATION: **Class SA**

## TABLE OF CONTENTS

I.	PROPOSED ACTION .....	3
II.	TYPE OF FACILITY AND DISCHARGE LOCATION.....	3
III.	DESCRIPTION OF DISCHARGE.....	3
IV.	LIMITATIONS AND CONDITIONS .....	3
V.	PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION..	3
A.	PROCESS DESCRIPTION .....	3
B.	EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS .....	4
VI.	INFLOW/INFILTRATION REQUIREMENTS.....	11
VII.	SANITARY SEWER OVERFLOWS .....	11
VIII.	SLUDGE INFORMATION AND REQUIREMENTS.....	11
IX.	PRETREATMENT .....	12
X.	ANTI-BACKSLIDING .....	12
XI.	ANTIDEGRADATION .....	12
XII.	ESSENTIAL FISH HABITAT .....	13
XIII.	MONITORING AND REPORTING .....	15
XIV.	STATE PERMIT CONDITIONS .....	15
XV.	GENERAL CONDITIONS.....	15
XVI.	STATE CERTIFICATION REQUIREMENTS .....	16
XVII.	PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION .....	16
XVIII.	EPA CONTACT .....	16



I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit became effective on October 10, 2001; 30 days after EPA withdrew four contested permit conditions. It expired on October 10, 2005, four years from the effective date. This draft permit, after it becomes effective, will expire five (5) years from the effective date.

II. TYPE OF FACILITY AND DISCHARGE LOCATION

The facility is a secondary wastewater treatment plant with an average daily design flow of 29.71 million gallon per day (mgd)<sup>1</sup>. The facility discharges via a multiport diffuser approximately 1.4 miles offshore into Salem Sound (See Figure 1). According to the application, the collection system is 100% separate sanitary sewer. The South Essex Sewer District is a regional collection system which serves five municipalities with a total population of 174,931.

The facility's discharge outfalls are listed below:

<u>Outfall</u>	<u>Description of Discharge</u>	<u>Receiving Water</u>
001	Treated Effluent	Salem Sound

III. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs) submitted for September 2005 through December 2007, and the April 2005 application, are shown in Tables 1 and 2 of this fact sheet, respectively.

IV. LIMITATIONS AND CONDITIONS

The effluent limitations and monitoring requirements may be found in the draft NPDES permit.

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

The South Essex Sewerage District Wastewater Treatment Facility (SESD) was originally built as a primary treatment facility in 1978. The facility was upgraded in 1998 to provide secondary treatment. The upgraded facility has an average daily design flow of 29.71 mgd with year-round chlorination and dechlorination and discharges to the Salem Sound (Figure 1).

The District is a regional collection system which serves six municipalities each responsible for their own infrastructure. Additionally, the treatment facility receives flows from several county and state facilities (Essex County Industrial Farm (new jail), Essex County Agricultural and Technical Institute and the Commonwealth of Massachusetts Department of Public Health (Danvers State Hospital)). In addition, there are 26 significant industrial users, 18 of which are subject to categorical limitations. The facility also accepts septage from all of the district communities.

The following is a brief description of the treatment process (See Figure 2); raw wastewater enters the aerated grit chambers and then flows into the primary settling tanks, where floating and settleable solids are removed. The primary effluent is then distributed to the oxygen reactors, and then flows to the stacked secondary clarifiers. The secondary effluent is chlorinated, then dechlorinated, and the final effluent is then pumped and discharged via the multiport diffuser into Salem Sound.

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<sup>1</sup> Camp Dresser & McKee, Inc., 1992, Final Environmental Impact Report and Final Facilities Plan, p. 6-138.

Sludge is thickened and dewatered on-site and then trucked off-site for disposal by an outside contractor.

## B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

### 1. Overview of Federal and State Regulations

Under Section 301(b)(1)(B) of the Clean Water Act ("CWA"), publicly owned treatment works ("POTWs") must have achieved effluent limitations based upon Secondary Treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 C.F.R. Part 133.102. In addition, Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water.

Pursuant to 40 C.F.R. § 122.44 (d), permittees must achieve water quality standards established pursuant to Section 303 of the Clean Water Act (CWA), including state narrative criteria for water quality. Additionally, under 40 C.F.R. § 122.44 (d)(1)(i), "Limitations must control all pollutants or pollutant parameters which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard." When determining whether a discharge causes, or has the reasonable potential to cause or contribute to an in-stream excursion above a narrative or numeric criterion, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, and where appropriate, consider the dilution of the effluent in the receiving water.

### 2. Water Quality Standards; Designated Use

Effluent from the SESD WWTF is discharged to Salem Sound; segment MA93-25, which is part of Massachusetts Bay and classified as a Class SA water<sup>2</sup> (See Figure 3). Class SA waters are designated by the Commonwealth of Massachusetts as "excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting without depuration (Approved and Conditionally Approved Shellfish Areas). These waters shall have excellent aesthetic value (314 CMR 4.05(4)(a))."

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL). Salem Sound is listed on the Massachusetts 2006 Integrated List of Waters (303d) as impaired and requiring the development of a TMDL<sup>2</sup>. The listed impairment for this segment is pathogens. According to MassDEP, the primary cause of the impairment is wet weather discharges from separate storm sewers but MassDEP also suspects marina/boating pumpout releases and on-vessel discharges<sup>3</sup>.

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<sup>2</sup> Massachusetts Department of Environmental Protection, Division of Watershed Management, August 2007, Massachusetts Year 2006 Integrated List of Waters, Final Listing of the Condition of Massachusetts' Waters Pursuant to Sections 303(d) and 305(b) of the Clean Water Act, p. 121.

<sup>3</sup> Massachusetts Department of Environmental Protection, Division of Watershed Management, March 2007, North

#### Available Dilution

When appropriate, water quality based limits are established with the use of a dilution factor. The previous permit used dilution factors (chronic 32:1 and acute 26:1) which were estimated in the SESD Draft Environmental Impact Report (SESD DEIR)<sup>4</sup> using the ULINE model.

Initial dilution processes occur on the order of minutes, and therefore, initial dilution calculations are often performed using hourly flow rates. The flow rates analyzed in the SESD DEIR were determined from measured flows (January 1988-December 1989) which were then projected as future flows using a correction factor of 1.05 (1988-1989 annual average flow (26.6 mgd)/future annual average flow (27.9 mgd)). It is noted, however, that the final design was 29.7 not 27.9, which is a 6.4% increase over the modeled design flow.

A second modeling effort was conducted in 2001 by Applied Science Associates, Inc, under a contract with Massachusetts Coastal Zone Management. The dilutions were calculated using the CORMIX 2 model, which is specific to submerged multiport diffusers, and using the same flows modeled in 1991, however, the results were more conservative. The chronic dilution was 24:1 and the acute dilution was 16:1.

Given that the final design flow (29.7 mgd) is slightly greater than that modeled (27.9 mgd) in 1991, EPA has adopted the more conservative dilution factors into this permit. It is also noted that the CORMIX 2 model is specific to modeling submerged multiport diffusers and therefore, the results are thought to be more representative.

Flow - The draft permit includes a flow limit to protect the dilution factor and to assure that flows do not exceed design and compromise treatment quality. The flow limit is based on the average daily design flow of the treatment plant, which is 29.71 mgd. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method (See Permit Footnote 1). The monthly average and maximum daily flow shall also be reported.

#### OUTFALL 001 - CONVENTIONAL POLLUTANTS

Carbonaceous Biochemical Oxygen Demand (CBOD<sub>5</sub>) - The draft permit proposes the same CBOD<sub>5</sub> concentration limits that are in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average CBOD<sub>5</sub> concentration of 25 mg/l and a weekly average concentration of 40 mg/l. The draft permit requires the permittee to report the maximum daily CBOD<sub>5</sub> value each month, but does not establish an effluent limit. The monitoring frequency continues to be once per day.

A review of DMR data submitted over the last 28 months shows that there have not been any permit violations for CBOD<sub>5</sub>. Based on the DMR data, the average values for CBOD<sub>5</sub> monthly average, weekly average and maximum daily were 10.61 mg/l (range 6.0-16.0 mg/l; n=28), 13.36 mg/l (6.0-25.0 mg/l; n=28) and 20.04 (8.0-60.0 mg/l; n=28), respectively. These values are below the permit limits of 25 mg/l average monthly and 40 mg/l average weekly.

<sup>4</sup> Camp, Dresser & McKee, Inc., September 1991, SESD Draft Environmental Impact Report, Phase II Facilities Plan for Wastewater Treatment and Disposal, p. 6-84

Pursuant to 40 CFR §122.45(f) the permit also includes mass limits for CBOD<sub>5</sub>. The average monthly and average weekly allowable mass-based (load) limitations for CBOD<sub>5</sub> are based on the concentration limits described above and the POTW's average daily design flow of 29.71 MGD and the appropriate constituent concentration for the respective time period being limited.

**CBOD<sub>5</sub> Mass Loading Calculations:**

Calculations of maximum allowable loads for average monthly, average weekly and maximum daily CBOD<sub>5</sub> are based on the following equation:

$L = C \times DF \times 8.34$  where:

L = Maximum allowable load in lbs/day.

C = Maximum allowable effluent concentration for reporting period in mg/l.

Reporting periods are average monthly and weekly and daily maximum.

DF = Annual average design flow of facility in MGD.

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

(Concentration limit) [25] X 8.34 (Constant) X 29.71 (Design flow) = 6,194 lb/day

(Concentration limit) [40] X 8.34 (Constant) X 29.71 (Design flow) = 9,911 lb/day

**Total Suspended Solids (TSS)** - The draft permit proposes the same TSS limitations as in the existing permit. The average monthly and average weekly limits are based on the secondary treatment requirements set forth at 40 CFR 133.102 (b)(1), (2) and 40 CFR 122.45 (f) and are a monthly average TSS concentration of 30 mg/l, and a weekly average concentration of 45 mg/l. The draft permit requires the permittee to report the maximum TSS value each month, but does not establish a maximum daily effluent limit. The monitoring frequency continues to be once per day.

A review of DMR data submitted over the last 28 months shows that there have not been any permit violations for TSS. Based on the DMR data, the average values for TSS monthly average, weekly average and maximum daily were 13.79 mg/l (range 6.0-23.0 mg/l; n=28), 17.50 mg/l (7.0-29.0 mg/l; n=28) and 30.79 (9.0-81.0 mg/l; n=28), respectively. These values are below the permit limits of 30 mg/l average monthly and 45 mg/l average weekly.

Pursuant to 40 CFR §122.45(f) the permit also includes mass limits for TSS. The average monthly and average weekly allowable mass-based (load) limitations for TSS are based on the concentration limits described above and the POTW's average daily design flow of 29.71 MGD and the appropriate constituent concentration for the respective time period being limited.

**TSS Mass Loading Calculations:**

Calculations of maximum allowable loads for average monthly and average weekly TSS are based on the following equation:

$L = C \times DF \times 8.34$  where:

L = Maximum allowable load in lbs/day.

C = Maximum allowable effluent concentration for reporting period in mg/l.

Reporting periods are average monthly and weekly and daily maximum.

DF = Design flow of facility in MGD.

8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

(Concentration limit) [30] X 8.34 (Constant) X 29.71 (design flow) = 7,433 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 29.71 (design flow) = 11,150 lb/day

Eighty-Five Percent (85%) CBOD<sub>5</sub> and TSS Removal Requirement - The provisions of 40 CFR §§133.102(a)(3), (4) and (b)(3) requires that the 30 day average percent removal for CBOD<sub>5</sub> and TSS be not less than 85%. The previous permit required that the 85% removal requirement only be met in dry weather.

For separate sanitary sewers, adjustments of the percent removal requirements can only be made if it is demonstrated that the limits can not be met due to less concentrated influent, and that the less concentrated influent is not the result of excessive I/I. Because such a demonstration has not been made the 85% removal limit in the draft permit applies at all times.

pH - The draft permit includes pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 C.F.R. §133.102(c). The pH of the effluent shall not be less than 6.5 or greater than 8.5 standard units at any time.

A review of DMR data submitted over the last 28 months shows that there have not been any permit violations for pH. Based on the DMR data, the pH values have ranged from 6.5 to 7.5 standard units.

Oil and Grease – The current permit includes an effluent limit of 15 mg/l for oil and grease. This value meets the narrative “free from oil and grease and petrochemicals” in the SA criteria. Since the current permit became effective on October 10, 2001, the maximum daily value for oil and grease has not exceeded 9 mg/l and has an average maximum daily value of 7.83 mg/l (n=70). EPA has determined that there is no reasonable potential and has removed the requirement from the permit.

Fecal Coliform Bacteria - The existing permit includes effluent limitations for fecal coliform bacteria which are in accordance with the Massachusetts Surface Water Quality Standards (SWQS) at 314 CMR 4.05 (4)(b) for Class SB waters. However, the discharge is to Salem Sound which is part of Massachusetts Bay and listed as a Class SA water body<sup>5</sup> (See Figure 1 and 3).

In Class SA waters designated for shellfishing, fecal coliform bacteria shall not exceed a geometric mean of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed 28 organisms per 100 ml. Colony forming units (cfu) or most probable number (MPN) units are determined by the method of analysis used for bacteria analysis. Both units are acceptable.

Between September 2005 and December 2007, there were no violations of the existing fecal coliform bacteria effluent limitations of average monthly of 200 cfu/100 ml and a maximum daily of 400 cfu/100 ml. Based on Discharge Monitoring Reports (DMRs) submitted by the permittee, the average values for fecal coliform bacteria were a monthly average of 16 cfu/100 ml and an average maximum daily of 101 cfu/100 ml.

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<sup>5</sup> Massachusetts Department of Environmental Protection, Division of Watershed Management, March 2007, North Shore Coastal Watersheds, 2002 Water Quality Assessment Report, p. 116

Enterococci – The Commonwealth of Massachusetts has adopted revisions to the Massachusetts SWQS which also use the indicator bacteria, enterococci, for recreational waters. The standard for Class SA bathing beach waters is that no single enterococci sample taken during the bathing season shall exceed 104 colonies per 100 ml, and the geometric mean of the five most recent samples taken within the same bathing season shall not exceed a geometric mean of 35 colonies per 100 ml.

Since this is a new requirement, the draft permit allows the permittee to monitor enterococci once per day for the first year of the permit without an effluent limit. After one year, the effluent limitations apply as follows: the discharge shall not exceed 104 colonies per 100 ml and the geometric mean of the five most recent samples taken within the bathing season shall not exceed a geometric mean of 35 colonies per 100 ml.

The permittee must sample for enterococci, concurrently with samples for fecal coliform bacteria and total residual chlorine.

#### OUTFALL 001 - NON-CONVENTIONAL POLLUTANTS

Total Residual Chlorine - Chlorine is a toxic chemical. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. DMRs show chlorine residual levels below the minimum detection level for the past 28 months. The draft permit includes Total Residual Chlorine (TRC) limitations based on state water quality standards [Title 314 CMR 4.05(5)(e)].

The acute and chronic water quality criteria for chlorine defined in the 2002 EPA National Recommended Water Quality Criteria for saltwater are 13 ug/l and 7.5 ug/l, respectively. Given the dilution factors of 16 and 24, respectively, the total residual chlorine limits have been calculated as 0.208 mg/l maximum daily and 0.18 mg/l average monthly. The sampling frequency has been reduced to twice (2) per day. Samples must be collected concurrently with the samples for Fecal Coliform Bacteria and Enterococci.

A review of DMR data submitted over the last 28 months shows that there have been two (2) permit violations for TRC. A maximum daily value of 0.6 mg/l was reported in May 2007 and 0.48 mg/l was reported in January 2007.

Total Residual Chlorine Limitations:

(acute criteria \* dilution factor) = Acute (Maximum Daily)

$(13 \text{ ug/l} \times 16) = 208 \text{ ug/l} = 0.208 \text{ mg/l}$

(chronic criteria \* dilution factor) = Chronic (Monthly Average)

$(7.5 \text{ ug/l} \times 24) = 180 \text{ ug/l} = 0.180 \text{ mg/l}$

Nitrogen – The current permit requires the permittee to monitor for ammonia nitrogen, total kjeldahl nitrogen and total nitrate. These requirements were established due to concerns of potential extensive nutrients in the effluent which could cause effects to marine life. Given that essential fish habitat has been designated in the vicinity of the discharge, EPA has maintained these monitoring requirements in the draft permit.

Metals - Certain metals like copper, lead, nickel, silver and zinc can be toxic to aquatic life. EPA has evaluated the reasonable potential for the discharge of these metals to cause or contribute to violations of water quality standards. Based on this evaluation, EPA has determined that there is no reasonable potential and no need to limit or monitor these metals.

The calculation of reasonable potential for copper, lead, nickel, silver and zinc was done by calculating the allowable acute and chronic discharge concentration for each metal and comparing those values to the concentrations measured in the discharge (See Table 2). If the actual discharge concentration exceeds the allowable discharge concentration, there is reasonable potential and the permit must contain an effluent limit for that pollutant. The effluent metals concentrations were taken from the permittee's 2005 application.

Allowable discharge concentrations were calculated using the following equation:

$$C = WQC * DF$$

Where C = allowable effluent concentration

WQC = water quality criteria for the metal, expressed as total recoverable metal

DF = dilution factor

As discussed earlier, the dilution factors calculated in 2001 by Massachusetts CZM's contractor are a chronic dilution of 24.1:1 and an acute dilution of 16:1.

The water quality criteria were obtained from National Recommended Water Quality Criteria 2002. Since the discharge is to a marine water, the criteria for salt water were used. Most metals have two criteria, one for acute exposure and the other for chronic exposure. As of the 2002 criteria, only an acute criteria has been established for silver. Acute criteria are generally used to calculate maximum daily limits and chronic criteria are used to calculate monthly average limits.

In all cases, the calculated allowable effluent concentration was far greater than the reported effluent concentration; therefore, reasonable potential does not exist.

#### OUTFALL 001 - WHOLE EFFLUENT TOXICITY (WET)

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria:

*All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.*

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial sources, the state narrative water quality criterion, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the draft permit includes a whole effluent acute toxicity limitation (LC50 =100%) and requires testing and report of the chronic endpoint. (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", September, 1991.)

The current permit requires the permittee to conduct quarterly (4/year) acute toxicity tests. EPA Region 1 policy requires marine discharges with an initial dilution between 20:1 and 10:1 to conduct quarterly acute toxicity tests on two species *Mysidopsis bahia* (Mysid shrimp) and *Menidia beryllina* (Inland silverside) and quarterly chronic toxicity testing on one species *Arbacia* (sea urchin).

Previous acute toxicity testing using Mysid shrimp and Inland silverside found Inland silverside to be the more sensitive species. Since the current permit was issued there have been five (5) violations of the  $LC50 \geq 100\%$  for Inland silverside and two (2) violations of the  $LC50 \geq 100\%$  for Mysid shrimp. The violations for Mysid shrimp occurred in 2004 and were coincident with violations for Inland silverside. The draft permit proposes to reduce the number of test species for acute toxicity testing to *Menidia beryllina*, only.

The draft permit also includes a new chronic toxicity testing requirement, consistent with Region 1 policy for permittees with initial dilutions between 20:1 and 10:1. This requirement is a direct result of the revised initial dilution.

Pursuant to MassDEP and EPA Region I policy, chronic toxicity testing is required four times per year. The permittee is required to report the chronic endpoint.

According to the WET reports, the permittee has switched to the use of an alternative dilution water. EPA has no record of a request or approval for the use of alternative dilution water. The current permit requires the permittee to submit a written request and supporting documentation for use of an alternative dilution water (See Attachment A of the current permit). The permittee was not to substitute an alternative dilution water until after receiving written approval from EPA.

Furthermore, the permittee has not provided a site water control data as required. The draft permit requires the permittee to return to the use of the site (receiving) water as a diluent. If future WET results document that the receiving water is toxic or unreliable, the permittee must follow the protocol in **Attachment C of the permit** for switching to an alternative dilution water.

If alternative dilution water is warranted, a site water control sample must be run in addition to an alternative dilution water control sample. Chemical data of the receiving water and dilution water samples must be included in the WET report. EPA will reject WET test reports that do not follow Permit requirements, applicable protocols, and meet all minimum criteria for acceptability and variability of test results, and will require tests be repeated until valid results are obtained. Results, valid or otherwise, must be submitted by the date specified in Part I of the Permit, even if the test must be repeated.

The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A, B, and C**. The tests will be conducted four times a year, during the second week of the following months, February, April, June and August.

The permit shall be modified or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any state water quality criterion. Results from these toxicity tests are considered "New Information" and the permit may be modified pursuant to 40 CFR 122.62(a)(2).



## VI. INFLOW/INFILTRATION REQUIREMENTS

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems.

Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems, and combined sewer overflows in combined systems.

The draft permit includes requirements for the permittee and the co-permittees to control infiltration and inflow (I/I) into the collection system it owns and operates. The permittee and co-permittees shall each develop an I/I removal program commensurate with the severity of the I/I in their portion of the collection system. In sections of the collection system that have minimal I/I, the control program will logically be scaled down. It greatly increases the potential for sanitary sewer overflows (SSO) in separate systems.

The permit standard conditions for 'Proper Operation and Maintenance' are found at 40 CFR §122.41(e). These conditions require proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. Similarly, the co-permittees have a 'duty to mitigate' as stated in 40 CFR §122.41 (d). This requires the co-permittees to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component of ensuring permit compliance under both of these provisions.

## VII. SANITARY SEWER OVERFLOWS

The Town of Marblehead is a permittee under NPDES permit MA0100374. The permit addresses the use of an emergency overflow from the Sargent Road Pumping Station. On April 11, 2005, EPA sent a letter to the Town of Marblehead informing the Town of EPA's intention to terminate the permit as the permit does not authorize the discharge but only establishes the conditions under which the EPA has authority to enforce in the event of bypass. The Town of Marblehead responded and requested that the individual permit be reissued.

However, given that the Town of Marblehead is named as a co-permittee in the draft permit and the point source addressed in MA0100374 is a part of the collection system conveying flow to the South Essex Sewerage District, EPA believes that coverage under this permit should replace coverage under Permit No. MA0100374. Accordingly, EPA will revoke coverage under NPDES Permit MA0100374 upon the effective date of this permit.

## VIII. SLUDGE INFORMATION AND REQUIREMENTS

The draft permit requires that the permittee comply with all existing federal and state laws that apply to sewage sludge use and disposal practices and with the Clean Water Act Section 405(d) technical standards (see 40 CFR Section 503). Sludge from the SESD WWTF is currently sent to an off-site facility for disposal; because the final disposal or use of the permittees sludge is done by others, the permittee is not subject to the requirements of 40 CFR Section 503. However, if the ultimate sludge disposal method changes, the permittee is responsible for complying with the applicable state and federal requirements.

IX. PRETREATMENT

The facility accepts industrial wastewater from 26 Significant Industrial Users (SIU), 18 of which are categorical SIUs.

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR §122.44(j), 40 CFR Part 403 and Section 307 of the Act. The permittee's pretreatment program received EPA approval on September 28, 1990 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit, which were consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

Upon reissuance of this NPDES permit, the permittee is required to review its pretreatment program and modify it as necessary to ensure that it is consistent with current Federal Regulations. Those activities that the permittee must address include, but are not limited to, the following: (1) develop and enforce EPA approved specific effluent limits (technically-based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

Lastly, the permittee must continue to submit an annual report describing the permittee's pretreatment program activities for the twelve (12) month period ending 60 days before the due date in accordance with 403.12(i). The annual report shall be submitted **no later than March 1 of each year**.

The Permit requires the permittee to submit to EPA, within 60 days of the permit's effective date, all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated rule. To the extent the permittee's legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

X. ANTI-BACKSLIDING

Anti-backsliding, as described in Section 402 (o) of the Clean Water Act and 40 CFR §122.44(l)(1), requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit unless the circumstances allow application of one of the defined exceptions.

XI. ANTIDEGRADATION

The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. All existing uses of the Salem Sound must be protected. This draft permit is being reissued with allowable discharge limits that are as stringent or more stringent than the current permit with the same parameter coverage. The effluent limit for oil and grease has been removed from the permit since recent data indicates there is no reasonable potential for oil and grease to cause an exceedance of the Water Quality Standards. There is no change in outfall location. The public is invited to participate in the anti-degradation finding through the permit public notice procedure.

## XII. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat," 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," 16 U.S.C. § 1802(10). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

Although EFH has been designated for this general location, EPA has concluded that this activity is not likely to affect EFH or its associated species for the following reasons:

- This is a reissuance of an existing permit with the same or stricter effluent limits;
- Limits specifically protective of aquatic organisms have been established for chlorine based on EPA water quality criteria;
- Acute and chronic toxicity testing is required four (4) times per year;
- The permit prohibits any violation of state water quality standards.

Accordingly, EPA has determined that a formal consultation with NMFS is not required. NMFS will be notified and EFH will be reinitiated if adverse impacts to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

### **Summary of Essential Fish Habitat (EFH) Designation**

#### **10' x 10' Square Coordinates:**

Boundary	North	East	South	West
Coordinate	42° 40.0' N	70° 50.0' W	42° 30.0' N	71° 00.0' W

**Square Description (i.e. habitat, landmarks, coastline markers):** Waters within the square within the Atlantic Ocean within Massachusetts Bay south of Marblehead, MA., Salem, MA., Danvers, MA., Beverly, MA., and Beverly Farms, MA. Features also affected include: Salem Harbor, Bass River, North River, Waters River, Crane River, Danvers River, Bass River, Salem Neck, Peaches Pt., Naugus Head, Pickering Pt., Derby Wharf, northern Marblehead Harbor, northwest Marblehead Neck, Woodbury Pt., Cove Village, Hospital Pt., and Curtis Pt., and western Salem Sound.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod ( <i>Gadus morhua</i> )	X	X	X	X
haddock ( <i>Melanogrammus aeglefinus</i> )	X	X		
pollock ( <i>Pollachius virens</i> )	X	X	X	X
whiting ( <i>Merluccius bilinearis</i> )	X	X	X	X
red hake ( <i>Urophycis chuss</i> )	X	X	X	X
white hake ( <i>Urophycis tenuis</i> )	X	X	X	X
redfish ( <i>Sebastes fasciatus</i> )	n/a	X	X	X
winter flounder ( <i>Pleuronectes americanus</i> )	X	X	X	X
yellowtail flounder ( <i>Pleuronectes ferruginea</i> )	X	X	X	X
windowpane flounder ( <i>Scopthalmus aquosus</i> )	X	X	X	X
American plaice ( <i>Hippoglossoides platessoides</i> )	X	X	X	X
ocean pout ( <i>Macrozoarces americanus</i> )	X	X	X	X
Atlantic halibut ( <i>Hippoglossus hippoglossus</i> )	X	X	X	X
Atlantic sea scallop ( <i>Placopecten magellanicus</i> )	X	X	X	X
Atlantic sea herring ( <i>Clupea harengus</i> )		X	X	X
bluefish ( <i>Pomatomus saltatrix</i> )			X	X

long finned squid ( <i>Loligo pealei</i> )	n/a	n/a	X	X
short finned squid ( <i>Illex illecebrosus</i> )	n/a	n/a	X	X
Atlantic butterfish ( <i>Peprilus triacanthus</i> )	X	X	X	X
Atlantic mackerel ( <i>Scomber scombrus</i> )	X	X	X	X
summer flounder ( <i>Paralichthys dentatus</i> )				X
scup ( <i>Stenotomus chrysops</i> )	n/a	n/a	X	X
black sea bass ( <i>Centropristus striata</i> )	n/a			X
surf clam ( <i>Spisula solidissima</i> )	n/a	n/a	X	X
bluefin tuna ( <i>Thunnus thynnus</i> )			X	X

### **XIII. MONITORING AND REPORTING**

The permittee is required to monitor and report sampling results to EPA and the MassDEP within the time specified in the permit. The effluent monitoring requirements have been established to yield data representative of the discharge by the authority under Section 308(a) of the CWA in accordance with 40 CFR 122.441(j), 122.44, and 122.48.

The remaining general conditions of the permit are based primarily on the NPDES regulations 40 CFR 122 through 125 and consist primarily of management requirements common to all permits.

### **XIV. STATE PERMIT CONDITIONS**

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the MassDEP Commissioner.

### **XV. GENERAL CONDITIONS**

The general conditions of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

**XVI. STATE CERTIFICATION REQUIREMENTS**

The staff of the Massachusetts Department of Environmental Protection ("MassDEP") has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

**XVII. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION**

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, MA Unit, One Congress Street, Suite-1100, Boston, Massachusetts 02114. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. Public hearings may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period and after a public hearing, if such a hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

**XVIII. EPA CONTACT**

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

Michele Cobban Barden  
Office of Ecosystem Protection  
U.S. Environmental Protection Agency  
One Congress Street, Suite-1100 (CPE)  
Boston, MA 02114-2023  
Telephone: (617) 918-1539  
Barden.Michele@epa.gov

September 23, 2013  
Date

Stephen Perkins, Director  
Office of Ecosystem Protection  
U.S. Environmental Protection Agency

MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
COMMONWEALTH OF MASSACHUSETTS  
1 WINTER STREET  
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY – REGION 1  
OFFICE OF ECOSYSTEM PROTECTION  
5 POST OFFICE SQUARE  
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF COMMENT PERIOD PERTAINING TO A PARTIALLY  
REVISED DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM  
(NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES  
UNDER SECTION 301 AND 402 OF THE CLEAN WATER ACT (THE “ACT”), AS  
AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF  
THE ACT.

DATE OF NOTICE: September 25, 2013

PERMIT NUMBER: **MA0100501**

PUBLIC NOTICE NUMBER: MA-026-2013

NAME AND MAILING ADDRESS OF APPLICANT:

South Essex Sewerage District  
50 Fort Avenue  
P.O. Box 989  
Salem, MA 01970

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

South Essex Wastewater Treatment Facility  
50 Fort Avenue  
Salem, MA 01970

RECEIVING WATER: Salem Sound (Class SB)

**PREPARATION OF THE PARTIALLY REVISED DRAFT PERMIT:**

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a partially revised National Pollutant Discharge Elimination System (NPDES) draft permit authorizing discharge from the South Essex Wastewater Treatment Facility to Salem Sound. A draft permit was released for public notice on March 27, 2008. The public comment period was originally scheduled to close April 25, 2008, but was extended through June 6, 2008 at the request of the permittee.

EPA and MassDEP have decided to partially reopen the Draft Permit for public comment on the following requirements; a change to the fecal coliform limits, the decision to add of co-permittees for sewer system operation and maintenance and unauthorized discharges to the 2008

Draft Permit, recently updated standard permit conditions and recently revised requirements for submitting monitoring and reporting data.

The agencies have concluded that an opportunity for interested parties to review the partially revised Draft Permit and partially revised Fact Sheet, and to submit comments on these revisions will assist the agencies in their deliberations and improve the quality of the Final Permit decision.

Therefore, pursuant to 40 CFR § 124.14(b), public comment on the partially revised Draft Permit has been reopened. In accordance with 40 CFR § 124.14(c), comments filed during the reopened comment period shall be limited to the “substantial new questions that caused its reopening.”

The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00, and State Surface Water Quality Standards at 314 CMR 4.00. EPA has requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

#### **INFORMATION ABOUT THE PARTIALLY REVISED DRAFT PERMIT:**

A revised fact sheet (describing the basis for the revised draft permit conditions and significant factual, legal and policy questions considered in preparing the draft permit) may be obtained at no cost at [http://www.epa.gov/region1/npdes/draft\\_permits\\_listing\\_ma.html](http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html) or by contacting EPA's contact person named below:

Michele Cobban Barden  
U.S. Environmental Protection Agency – Region 1  
5 Post Office Square, Suite 100 (OEP06-1)  
Boston, MA 02109-3912  
Telephone: (617) 918-1539

The administrative record containing all documents relating to this draft permit including all data submitted by the applicant may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

#### **PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:**

All persons, including applicants, who believe any condition of the partially revised draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by October 24, 2013, to the address listed above. Any person, prior to such date, may submit a request in writing to EPA and MassDEP for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.



**FINAL PERMIT DECISION:**

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

DAVID FERRIS, DIRECTOR  
MASSACHUSETTS WASTEWATER  
MANAGEMENT PROGRAM  
MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

KEN MORAFF, ACTING DIRECTOR  
OFFICE OF ECOSYSTEM PROTECTION  
EPA-REGION 1