

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),

Town of Marshfield
Department of Public Works

is authorized to discharge from the facility located at

Marshfield Wastewater Treatment Facility
P.O. Box 268
200 Joseph Driebeek Way
Marshfield, MA 02050

to receiving water named **Massachusetts Bay (MA94)** in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

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

This permit expires at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on November 9, 2006

This permit consists of 15 pages in **Part 1** including effluent limitations and monitoring requirements; **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012, 10 pages); and **Part II** (25 pages including NPDES Part II Standard Conditions).

Signed this 4th day of December, 2014

_____/S/SIGNATURE ON FILE_____
Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

_____/S/SIGNATURE ON FILE_____
David R. Ferris, Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A.1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number 001 to Massachusetts Bay. Such discharges shall be limited and monitored as specified below.							
<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>			<u>MONITORING REQUIREMENTS</u> ³		
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
FLOW ²	*****	*****	2.1 MGD	*****	Report MGD	CONTINUOUS	RECORDER
FLOW ²	*****	*****	Report MGD	*****	*****	CONTINUOUS	RECORDER
BOD ₅ ⁴	525 lbs/Day	788 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HOUR COMPOSITE ⁵
TSS ⁴	525 lbs/Day	788 lbs/Day	30 mg/l	45 mg/l	Report mg/l	1/WEEK	24-HOUR COMPOSITE ⁵
pH RANGE ¹	6.0 - 8.5 SU (SEE PERMIT PARAGRAPH I.A.1.b.)					1/DAY	GRAB
FECAL COLIFORM ^{1,6}	*****	*****	14 cfu/100 ml	*****	28 cfu/100 ml	3/WEEK	GRAB
ENTEROCOCCUS ^{1,6,11}	*****	*****	35 cfu/100 ml	*****	276 cfu/100 ml	3/WEEK	GRAB
DISSOLVED OXYGEN	Report mg/l					5/WEEK	GRAB

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<u>EFFLUENT CHARACTERISTIC</u>		<u>EFFLUENT LIMITS</u>				<u>MONITORING REQUIREMENTS</u> ³	
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
AMMONIA-NITROGEN	Report lbs/Day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMPOSITE ⁵
TOTAL KJELDAHL NITROGEN	Report lbs/Day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMPOSITE ⁵
TOTAL NITRATE	Report lbs/Day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMPOSITE ⁵
TOTAL NITRITE	Report lbs/Day	*****	Report mg/l	*****	Report mg/l	1/MONTH	24-HOUR COMP ⁵
WHOLE EFFLUENT TOXICITY ^{7,8,9}	Acute LC ₅₀ ≥ 100%					2/YEAR	24-HOUR COMP ⁵
HARDNESS ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
AMMONIA NITROGEN AS N ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
TOTAL RECOVERABLE CADMIUM ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
TOTAL RECOVERABLE LEAD ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
TOTAL RECOVERABLE COPPER ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
TOTAL RECOVERABLE ZINC ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵
TOTAL RECOVERABLE NICKEL ¹⁰	*****	*****	*****	*****	Report mg/l	2/YEAR	24-HOUR COMP ⁵

Sampling Location: BOD, TSS, pH, Fecal Coliform, Enterococcus and WET tests are performed at the open effluent channel after ultraviolet disinfection. Dissolved Oxygen shall be sampled from the wet well just prior to the outfall.

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 sampling shall be of the discharge and shall be collected at the point specified on page 3. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented in correspondence appended to the applicable discharge monitoring report.

All samples shall be tested 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.
5. 24-hour composite samples will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period (e.g. 0700 Monday – 0700 Tuesday)
6. The monthly average limits for fecal coliform and enterococcus are expressed as geometric means.
7. The permittee shall conduct acute toxicity tests *two* times per year. The permittee shall test Mysid shrimp only. Toxicity test samples shall be collected during the months of July and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due August 31st and November 30th, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC ₅₀
July October	August 31 st November 30th	Mysid Shrimp (See Attachment A)	≥ 100%

8. The LC₅₀ is the concentration of effluent that 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.
9. 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 be found 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**.
10. For each whole effluent toxicity test the permittee shall report on the appropriate discharge monitoring report (DMR), the concentrations of hardness, ammonia nitrogen as nitrogen, total recoverable cadmium, lead, copper, zinc and nickel 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.
11. The Permittee shall comply with the enterococci limits in accordance with the upgrade schedule contained in Section E below. In the interim, the facility shall be operated in order to minimize enterococci concentrations in the effluent as best possible using the existing disinfection system.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. The pH of the effluent shall be in the range of 6.0 through 8.5 standard units and not more than 0.2 units outside of the natural background range. 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 not contain a visible oil sheen, foam, or floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
 - f. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.
 - g. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
2. All POTWs must provide adequate notice to the Director of the following:
- a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; 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.

3. Prohibitions Concerning Interference and Pass Through:

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

4. 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 the promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. 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. UNAUTHORIZED DISCHARGES

This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions 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 to EPA and MassDEP 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>

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 is required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

The permittee 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 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 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 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 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 completed, implemented and submitted 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 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 its design flow (1.68 MGD) based on the annual average flow during the reporting year, 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 shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works¹ it owns and operates.

D. 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, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to Section 405(d) of the CWA, 33 U.S.C. § 1345(d).

¹ As defined at 40 CFR §122.2, which references the definition at 40 CFR §403.3

2. If both state and federal requirements apply to the permittee's sludge use and/or disposal practices, the permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge 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 requirements of 40 CFR Part 503 do not apply to facilities that dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or 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 40 CFR. Part 503 requirements including the following elements:
 - General requirements
 - Pollutant limitations
 - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
 - Management practices
 - Record keeping
 - Monitoring
 - Reporting

Which of the 40 CFR Part 503 requirements apply to the permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999), may be used by the permittee to assist it in determining the applicable requirements.²

² This guidance document is available upon request from EPA Region 1 and may also be found at:
<http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

Sampling of the sewage sludge shall use the procedures detailed in 40 CFR 503.8.

7. Under 40 CFR § 503.9(r), the permittee is a “person who prepares sewage sludge” because it “is ... the person who generates sewage sludge during the treatment of domestic sewage in a treatment works ...” If the permittee contracts with *another* “person who prepares sewage sludge” under 40 CFR § 503.9(r) – i.e., with “a person who derives a material from sewage sludge” – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the permittee does not engage a “person who prepares sewage sludge,” as defined in 40 CFR § 503.9(r), for use or disposal, then the permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.
8. The permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19** (*see also* “EPA Region 1 - NPDES Permit Sludge Compliance Guidance”). Reports shall be submitted to the address contained in the reporting section of the permit. If the permittee engages a contractor or contractors for sludge preparation and ultimate use or disposal, the annual report need contain only the following information:
- a. Name and address of contractor(s) responsible for sludge preparation, use or disposal
 - b. Quantity of sludge (in dry metric tons) from the POTW that is transferred to the sludge contractor(s), and the method(s) by which the contractor will prepare and use or dispose of the sewage sludge.

E. SPECIAL CONDITIONS

1. Compliance Schedule for Enterococci

The permittee shall attain the monthly average, and maximum daily enterococci limits according to the following schedule:

- a. From the effective date of the permit until such time as the necessary facility improvements to achieve compliance with the enterococcus permit limits have been constructed and started-up, the Permittee shall sample and report enterococcus according to the schedule and frequency of sampling in Part A.1. of the final permit.
- b. From January 2015 through May 2015, the Permittee shall study the appropriate means to achieve compliance with the enterococcus limits and shall submit to EPA and MassDEP, on or before June 30, 2015, a status report relative to the planning of the facilities necessary to achieve enterococcus permit limits.
- c. From June 2015 through February 2016, the Permittee shall complete design of the facility improvements required to achieve the enterococcus permit limits.
- d. The Permittee shall have until October 30, 2016 to finalize any additional design elements necessary and to secure any construction funding not already appropriated. The Permittee shall submit a status report to EPA and to MassDEP on or before November 30, 2016 summarizing activities since the previous status report.
- e. On or before July 30, 2017, the Permittee shall complete construction of the necessary facility improvements to achieve compliance with the enterococcus permit limits.
- f. On or before September 30, 2017, the Permittee shall start-up the necessary facility improvements and achieve compliance with the enterococcus permit limits.
- g. The permittee shall notify EPA and MassDEP of its compliance or noncompliance with the requirements of this part in writing no later than 14 days after each interim or final date of compliance.

F. MONITORING AND REPORTING

- 1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report 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. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: <http://www.epa.gov/netdmr>. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports (“opt-out request”).

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. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be 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) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt-Out Requests

Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request be approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

And

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. All reports required under this permit, including MassDEP Monthly Operation and Maintenance Reports, shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II 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**

All sludge monitoring reports required herein shall be submitted to the following address:

**U.S. Environmental Protection Agency, Region 7
Biosolids Center
Water Enforcement Branch
11201 Renner Boulevard
Lenexa, Kansas 66219**

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

**MassDEP – Southeast Region
Bureau of Resource Protection (Municipal)
20 Riverside Drive
Lakeville, MA 02347**

Copies of toxicity tests and nitrogen optimization reports only to:

**Massachusetts Department of Environmental Protection
Watershed Planning Program
8 New Bond Street
Worcester, MA 01606**

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.

G. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection

Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 CFR 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.
3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

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 hold 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 chlorine¹ (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate prior to

¹ For this protocol, total residual chlorine is synonymous with total residual oxidants
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sample use for toxicity testing. If performed on site the results should be included on the 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 location in the receiving water body immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2, Test Results & Permit Limits.

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

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

If the use of 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 is the case where repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity 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 TEST¹

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>\leq 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 ²	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 ³	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

Footnotes:

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

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST¹

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 ²	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions ³	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:

- ¹ Adapted from EPA 821-R-02-012.
- ² If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.
- ³ 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.

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

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

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

V.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. ≥ 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^{*1} (mg/L)</u>
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine ^{*2}	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:

^{*1} 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.

^{*2} 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.

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

2. Permit Actions

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

3. Duty to Provide Information

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

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4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

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

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8. Duty to Reapply

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

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. Bypass not exceeding limitations

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

c. Notice

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

d. Prohibition of bypass

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

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

5. Upset

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

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

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

2. Inspection and Entry

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

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

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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- f. Compliance Schedules. Reports of compliance or noncompliance with, any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.
 - h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.
2. Signatory Requirement
- a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)
 - b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.
3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

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

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

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

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

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

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

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

Construction Activities - The following definitions apply to construction activities:

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

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

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

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

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

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

EPA means the United States “Environmental Protection Agency”.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means “National Pollutant Discharge Elimination System”.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Waters of the United States means:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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 ₂	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 ³ /day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH ₃ -N	Ammonia nitrogen as nitrogen
NO ₃ -N	Nitrate as nitrogen
NO ₂ -N	Nitrite as nitrogen
NO ₃ -NO ₂	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

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 ₅₀	LC ₅₀ is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC ₅₀ = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

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

FACT SHEET

**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 NUMBER: MA0101737

PUBLIC NOTICE START AND END DATES: February 13, 2014 – March 14, 2014

NAME AND MAILING ADDRESS OF APPLICANT:

**Town of Marshfield
Department of Public Works
870 Moraine Street
Marshfield, MA 02050**

The Town of Duxbury is a co-permittee for specific activities required by the permit, as set forth in Section 7 of this Fact Sheet and Sections 1.B and 1.C. of the Draft Permit. These activities pertain to the operation and maintenance of the collection system owned and operated by the co-permittee. The responsible municipal department is:

**Town of Duxbury
Department of Public Works
878 Tremont Street
Duxbury, MA 02332**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Marshfield Wastewater Treatment Facility
P.O. Box 268
200 Joseph Driebeek Way
Marshfield, MA 02050**

**RECEIVING WATERS: Massachusetts Bay - (South Coastal Watershed, Segment MA94)
[Massachusetts Bay is classified in the North Coastal Table as SA Shellfishing]**

RECEIVING WATER CLASSIFICATION: Class SA - Shellfishing

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ATTACHMENTS

- Attachment A: “EPA Region 1 NPDES Permitting Approach for Publically Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems”
- Attachment B: Statistical Analysis for Lead
- Attachment C: Statistical Analysis for Zinc
- Attachment D: Endangered Species Act Assessment

1. 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, Massachusetts Bay. The current permit was issued on November 9, 2006 and became effective on February 1, 2007. The permittee submitted an appeal to the Environmental Appeals Board (EAB) on February 5, 2007. The EAB denied review of the appeal on March 27, 2007. The current permit expired on January 31, 2012. A timely re-application was received on October 20, 2011 and the current permit was administratively continued as allowed under 40 CFR 122.6. This draft permit is conditioned to expire five (5) years from the effective date.

2. TYPE OF FACILITY AND DISCHARGE LOCATION

The Marshfield Wastewater Treatment Facility (WWTF) is a 2.1 million gallon per day (mgd) secondary wastewater treatment facility that uses ultraviolet irradiation for disinfection. The facility discharges into Massachusetts Bay from a multiport diffuser located approximately 2900 feet offshore, (See Figure 1). The collection system is 100 percent separate sanitary sewer and serves a total population of 4,888 (Town of Marshfield, 4,638 and Town of Duxbury, 250).

The facility's discharge outfall is listed below:

<u>Outfall</u>	<u>Description of Discharge</u>	<u>Receiving Water</u>	<u>Outfall Location</u>
001	Treated Effluent	Massachusetts Bay	42° 5' 22" N; 70° 38' 39" W

3. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs) submitted for October 2010 through October 2013 and the October 2011 application, are shown in Appendices A and B which are attached to this fact sheet.

4. LIMITATIONS AND CONDITIONS

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

5. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATIONS

5.1. *Process Description*

The following is a short description of the Marshfield WWTF treatment processes. Raw wastewater passes through a channel grinder and then enters the facility's main pump station where it is then pumped to the aerated grit chamber. Flows are then split into three aeration tanks for biological activated sludge treatment. From the aeration tanks, the wastewater flows

by gravity to the two final clarifiers. From the final clarifiers, effluent flows into the ultraviolet irradiation channel for disinfection. Final effluent is then pumped to the outfall diffuser. A flow diagram of the treatment facility is Figure 2.

Sludge from the clarifiers is aerobically digested, thickened and then stored in a covered tank until being shipped off-site by Waste Water Services of Wareham, MA. The contractor uses more than one disposal site. The annual quantity of sludge is approximately 265 metric tons.

6. Statutory and Regulatory Authority

6.1. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. An NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements, including monitoring and reporting requirements. This draft NPDES permit was developed in accordance with the various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, and 125.

When developing permit limits, EPA is required to consider (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit. These requirements are described in the following paragraphs.

6.1.1. Technology-based Requirements

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 CFR 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 CFR § 122.44 (d), permittees must achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality. Additionally, under 40 CFR § 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.

6.1.2. Water Quality Standards; Designated Use; Outfall 001

Massachusetts Bay is classified in the Massachusetts Surface Water Quality Standards (MA SWQS) at 314 CMR 4.00 as a Class SA water, and is designated for shellfishing in the Table 23 of 314 CMR 4.06. Class SA waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migrations, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish and 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.

Section 303(d) of the 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). Massachusetts Bay has not been included on the Massachusetts Integrated List of Waters requiring a TMDL.

6.1.2.1. Massachusetts Division of Marine Fisheries Shellfishing Designation¹

Separate from the MA SWQS classification, marine waters are also classified by the Massachusetts Division of Marine Fisheries (MA DMF) in accordance with the National Shellfish Sanitation Program (NSSP). *The NSSP is a federal/state cooperative program recognized by the U. S. Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC) for the sanitary control of shellfish produced and sold for human consumption. The purpose of the NSSP is to promote and improve the sanitation of shellfish (oysters, clams, mussels and scallops) moving in interstate commerce through federal/state cooperation and uniformity of State shellfish programs².* Under the NSSP, marine waters in Massachusetts are classified in Shellfish Growing Area Maps prepared by MA DMF using the classifications of approved, conditionally approved, restricted, conditionally restricted, and prohibited.

The NSSP requires that growing areas be classified as “prohibited” if they are “adjacent to a sewage treatment plant outfall or other point source outfall with public health significance”³. As such, the area immediately adjacent to the Marshfield diffuser, labeled MB2.2 on the Shellfish Growing Area Map, is classified as “prohibited” for shellfishing solely based on the presence of the outfall⁴ (See Figure

¹ The Massachusetts Division of Marine Fisheries (MADMF) shellfishing designation is not the same as the shellfishing designation in the MA Surface Water Quality Standards (MASWQS). Waters designated for shellfishing in the MASWQS are subject to shellfishing water quality criteria regardless of whether shellfishing areas in those waters are approved for shellfishing by MADMF.

² US FDA, “National Shellfish Sanitation Program”. 5/3/2012. <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/default.htm> 7/24/2012.

³ National Shellfish Sanitation Program, 2009, Guide for the Control of Molluscan Shellfish: 2009 Revision.

⁴ MA Division of Marine Fisheries, 2009, “Designated Shellfish Growing Area, Growing Area Code: MB2, Area Name: Marshfield East Coastal, Area Towns: Duxbury, Marshfield, Scituate.

3).

The prohibited zone, MB2.2, was sized and configured by MA DMF according to the following criteria found in the NSSP 2009 Section II, Chapter IV – Shellstock Growing Areas, NSSP, Guide for the Control of Molluscan Shellfish:

5. Wastewater Discharges

b) The determination of the size of the area to be classified as prohibited adjacent to each outfall shall include the following minimum criteria:

1. (i) The volume flow rate, location of discharge, performance of the wastewater treatment plant and the bacteriological or viral quality of the effluent;
2. (ii) The decay rate of the contaminants of public health significance in the wastewater discharged;
3. (iii) The wastewater's dispersion and dilution, and the time of waste transport to the area where shellstock may be harvested; and
4. (iv) The location of the shellfish resources, classification of adjacent waters and identifiable landmarks or boundaries.

The prohibited area encompasses approximately 0.5 square mile. The area just outside of MB2.2 is classified as “approved”, which means that it is “(a) safe for the direct marketing of shellfish; (b) not subject to contamination from human or fecal matter at levels that, in the judgement of the Authority, presents an actual or potential public health hazard; and (c) not contaminated with: (i) pathogenic organisms; (ii) poisonous or deleterious substances; (iii) marine biotoxins; or (iv) bacteria concentrations exceeding the bacteriological standards for a growing area in this classification.”

6.1.2.2. Available Dilution

Where appropriate, water quality based limitations are established with the use of a calculated available dilution. The Marshfield WWTF discharge is from a 12-port diffuser located approximately 2900 feet offshore, northeast of the tower at Brant Rock (See Figure 1).

EPA performed modeling for the outfall in 1994 and 1995 in support of the re-issuance of the Marshfield NPDES permit. EPA used both CORMIX and PLUMES models. Both models required manipulation to model the configuration of the Marshfield outfall since the angle of the diffusers cannot be directly input into the models. Below is a table of the parameters used by EPA.

Table 1: EPA Modeling Parameters

Parameter	Value
Distance offshore:	2900 feet to diffusers 3140 feet to end of diffuser zone
Number of Diffusers:	12
Spacing between ports:	40 feet between ports on the same side 20 feet between alternating ports
Port/Nozzle diameter:	4.8 inches
Total Discharge:	5.7 MGD peak flow 2.1 MGD average design flow
Discharge Port Height:	1.5 feet above bottom based on design 6.5 feet above bottom, actual
Vertical Discharge Angle (Design):	15 degrees above horizontal
Horizontal Angle:	90 degrees to outfall pipe (0 degrees to feeder pipes)
Ambient Current Velocity:	0.03 knots

EPA's modeling resulted with dilution factors of approximately 53:1 during average conditions and 44:1 during peak (peak flow, low tide, slack tidal current). The model predicted that this dilution is achieved at a distance of 17 feet (5.2 meters) from the axis of the diffuser and extends for the full length (240 feet). This zone of initial dilution (ZID) is consistent with the recommended sizing of toxic dilution zones contained in EPA's Technical Support Document. It is significantly smaller than the prohibited zone designated by MADMF.

In 2007, the Town of Marshfield hired Applied Science Associates (ASA) to conduct a discharge analysis to (1) review the modeling conducted by EPA to determine the zone of initial dilution (ZID) and the average and critical dilutions for the outfall used in the 2007 NPDES Permit and; (2) to calculate the allowable fecal coliform dilution based on updated modeling⁵. This effort was made in response to the NPDES Permit issued to the Town of Marshfield in 2006 and included much stricter effluent limits on fecal coliform bacteria as required for SA waters designated for shellfishing, and requested by the MA DMF⁶. According to the ASA report, "discussions with MassDEP in April 2007 resulted in an agreement that a mixing zone study would be conducted to assess the ability of the present end-of-pipe fecal coliform concentrations could meet necessary water quality standards through dilutions⁷."

ASA ran several CORMIX and Visual Plumes simulations as previously mentioned; and as with the EPA modeling effort, the exact configuration of the Marshfield diffuser could not be simulated using either model. The modeling conducted by ASA included additional scenarios given that the configuration of the diffuser cannot be directly input to the models due to limitations of the models (See Tables 2 and 3).

⁵ Applied Science Associates, 2007, "Marshfield WWTF Discharge Analysis", pp. 70.

⁶ Ltr from Paul J. Diodati, Director, Commonwealth of Massachusetts, Division of Marine Fisheries to Mr. Suproakash Sarker, USEPA, Office of Ecosystem Protection, NPDES Permit Program Unit, dated September 18, 2006.

⁷ ASA, 2007, p. 1.

Table 2: List of CORMIX simulations and the results, *adapted from ASA, 2007, p. 6.*

Case	Modeling Scenario	Diffuser Type	Flow	Number of Ports	Vertical Angle	Port Spacing	Plume Distance at Surface	Dilution
1	Alternating diffuser heads at 90°; design flow	Alternating Direction	2.1 MGD (0.092 m ³ /s)	12	90	20 ft. (6.1 m)	2.8 ft. (0.84 m)	64.3
2	Alternating diffuser heads at 90°; maximum flow	Alternating Direction	5.7 MGD (0.250 m ³ /s)	12	90	20 ft. (6.1 m)	1.7 ft. (0.52 m)	34.1
3	Single side of diffuser, half of diffuser heads at 15°; half of design flow	Uni-directional	1.05 MGD (0.046 m ³ /s)	6	15	40 ft. (12.2 m)	10.7 ft (3.26 m)	73.4
4	Single side of diffuser, half of diffuser heads at 15°; half of maximum flow	Uni-directional	2.85 MGD (0.125 m ³ /s)	6	15	40 ft. (12.2 m)	18.3 ft (5.57 m) 17.7 ft (5.38 m)*	45.7 40.2*
5	All diffusers on one side at 15°; design flow	Uni-directional	2.1 MGD (0.092 m ³ /s)	12	15	20 ft. (6.1 m)	10.7 ft (3.26 m)	73.4
6	All diffusers on one side at 15°; maximum flow	Uni-directional	5.7 MGD (0.250 m ³ /s)	12	15	20 ft (6.1 m)	18.3 ft (5.57 m) 17.7 ft (5.38 m)*	45.7 40.2*

* Model results at 2.8 ft (0.85 m) below surface

Table 3: List of Visual Plumes simulations and results, adapted from ASA, 2007 p. 7.

Case	Modeling Scenerio	Diffuser Type	Flow	Number of Ports	Vertical Angle	Port Spacing	Plume Distance at Surface	Dilution
3	Single side of diffuser, half of diffuser heads at 15°; half of design flow	Uni-directional	1.05 MGD (0.046 m ³ /s)	6	15	40 ft (12.2 m)	9.8 ft (3.0 m)	109.7
4	Single side of diffuser, half of diffuser heads at 15°; half of maximum flow	Uni-directional	2.85 MGD (0.125 m ³ /s)	6	15	40 ft (12.2 m)	18.2 ft (5.56 m) 17.7 ft (5.38 m)	72.3 65.4*
5	All diffusers on one side at 15°; design flow	Uni-directional	2.1 MGD (0.092 m ³ /s)	12	15	20 ft (6.1 m)	9.8 ft (3.0 m)	109.7
6	All diffusers on one side at 15°; maximum flow	Uni-directional	5.7 MGD (0.250 m ³ /s)	12	15	20 ft (6.1 m)	18.2 ft (5.56 m) 17.7 ft (5.38 m)	72.3 65.4*

* Model results at 3.6 ft (1.1 m) below surface

Table 4: Dilution calculation summary at the edge of a mixing zone of approximately 17 ft, From ASA, 2007 p. 7

Calculation	Dilution
USEPA Average	53
USEPA Critical	44
Alt CORMIX Average	64
Alt CORMIX Critical	34
Uni CORMIX Average	73
Uni CORMIX Critical	40
Uni PLUMES Average	110
Uni PLUMES Critical	65

As can be seen in Table 4, dilutions for the EPA CORMIX model simulations and the ASA Alt CORMIX model simulations are similar, with the ASA simulation having a higher average dilution and a lower critical dilution. EPA has maintained the estimated dilution as 53:1 during average conditions and 44:1 during peak (peak flow, low tide, slack tidal current) conditions in the water quality-based limit calculations in the draft permit.

6.2. Permit Basis and Explanation of Effluent Limitations

6.2.1. Flow

The proposed flow limit is based on the average daily design flow of the treatment plant, which is 2.1 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 2). The average monthly and maximum daily flow for each month shall also be reported.

A review of recent DMR data shows that the reported monthly flows have been in compliance with the 2.1 mgd flow limit. The annual average flow over the 37 month period shown in Appendix A was 1.32 MGD (1.13-1.58MGD, n=37).

6.2.2. Conventional Pollutants

6.2.2.1. Biochemical Oxygen Demand (BOD₅)

The draft permit proposes the same BOD₅ limits as 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 BOD₅ concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily BOD₅ value each month, but does not establish an effluent limit. The mass-based limitations for BOD₅ are based on a 2.1 mgd design flow. The average monthly mass limit has been reduced from 526 to 525 lbs/day to correct a rounding error. The monitoring frequency continues to be once per week.

A review of recent DMR data shows that there have been no permit violations of BOD₅ concentration limits. Based on the DMR data, the average values for BOD₅ monthly average, weekly average and maximum daily were 4.43mg/l (range 3.52-5.34 mg/l; n=37), 5.10 mg/l (3.58-7.02 mg/l; n=37) and 5.18 (3.58-7.02 mg/l; n=37), respectively.

BOD Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly, average weekly and maximum daily BOD₅ 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 (2.1 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 2.1 (Design flow) = 525 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 2.1 (Design flow) = 788 lb/day

6.2.2.2. Total Suspended Solids (TSS)

The draft permit proposes the same TSS limits as 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 TSS concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily TSS value each month, but does not establish an effluent limit. The mass-based limitations for TSS are based on a 2.1 mgd design flow. The average monthly mass limit has been reduced from 526 to 525 lbs/day to correct a rounding error. The monitoring frequency continues to be once per week.

A review of recent DMR data shows that there have been no permit violations of TSS concentration limits. Based on the recent DMR data, the average values for TSS monthly average, weekly average and maximum daily were 24.90 mg/l (range 17.75-29.29 mg/l; n=37), 27.87 mg/l (23.00-37.85 mg/l; n=37) and 28.01 (23.00-37.85 mg/l; n=37), respectively.

TSS Mass Loading Calculations:

Calculations of maximum allowable loads for average monthly, average weekly and maximum daily 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 = Annual average design flow of facility (2.1 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 2.1 (Design flow) = 525 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 2.1 (Design flow) = 788 lb/day

6.2.2.3. Eighty-Five Percent (85%) BOD₅ 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 BOD₅ and TSS be not less than 85%. This requirement was included in the previous permit.

A review of DMR data shows that BOD₅ and TSS removal percentages average 95 % and 90%, respectively. There have been no violations of the 85% removal requirement for BOD₅ or TSS over the 37 month review period.

6.2.2.4. pH

MA SWQS for SA waters require pH to be “in a range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.” The current permit allows for pH in a range of 6.0-8.5 standard units as requested by the permittee during the public comment period. EPA found this range to be “acceptable and would result in the achievement of water quality standards outside the initial mixing zone due to the large dilution available at the point of discharge and the buffering capacity of ocean water.”

The draft permit includes the same limitations as the current permit. These limits are at least as stringent as pH limitations set forth at 40 CFR §133.102(c). The monitoring frequency is daily.

A review of DMR data submitted over the 37 month review period shows that there has been one violation for pH with a reported minimum pH of 3.6 in May 2011. With exception of the 3.6, pH values have ranged from 6.2-8.5 standard units.

6.2.2.5. Bacteria

The MA SWQS include criteria for two bacterial indicators for Class SA waters. Fecal coliform bacteria are applicable in water designated for shellfishing, and enterococci criteria have been established to protect recreational uses. Criteria for enterococci were first promulgated for Massachusetts coastal waters by EPA on November 16, 2004 (see 40 CFR 131.41). Massachusetts subsequently adopted enterococci criteria for marine waters into its water quality standards that were approved by EPA on September 19, 2007. Both indicator bacteria criteria are applicable to this discharge.

6.2.2.5.1. Fecal Coliform

The 2006 draft permit included fecal limits of 14 per 100/ml and 43 per 100/ml. The permittee submitted comments during the 2006 public notice period stating that these limits were not applicable to the Marshfield discharge. EPA responded that the limits were based on the Massachusetts surface water quality standards for Class SA – open shellfishing waters. The maximum daily limit was further reduced in the final permit to 28 per 100 ml at the request of the MA DMF “in order to be consistent with standards established by the National Shellfish Sanitation Program”⁸. Following the issuance of the permit, the permittee appealed the permit on February 5, 2007⁹. The Environmental Appeals Board (EAB) issued an order denying review on March 27, 2007 on the basis that the appeal was not timely¹⁰.

Since that time, the MassDEP has revised its SWQS and requires that SA waters

⁸ EPA Region 1, 2006, “Response to Public Comments, NPDES Permit MA0101737, Town of Marshfield, Marshfield, MA”

⁹ Town of Marshfield, 2007, “Petition for Review”

¹⁰ Environmental Appeals Board (EAB), 2007, “Order Denying Review”

designated for shellfishing not exceed a fecal coliform median or geometric mean MPN of 14 per 100 mg/l nor shall more than 10% of the samples exceed a MPN of 28 per 100 ml. In other words, the criteria are now the same as the limits in the existing permit.

A review of DMR data shows that the permittee has been in compliance with these limits. The monthly geometric mean fecal coliform bacteria counts range from 3-11.30 cfu/100 ml. The maximum value reported over the last 37 month review period was 16.40 cfu/100 ml.

The Town of Marshfield has continued to express concern about these limits. A letter accompanying the Town of Marshfield's 2011 application noted that the fecal coliform bacteria limits of 14 cfu/100 ml average monthly and 28 cfu/100 ml maximum monthly should not apply to the Marshfield discharge because an "existing automatic closure zone, where no shellfish harvesting can take place, which surrounds the WWTF outfall¹¹." The letter also stated that DEP suggested that the Town "investigate a mixing zone around the outfall and if SA standards could be met could be met at the edge of closure zone, less restrictive SB standards may be acceptable for end-of-the-pipe discharge."

First, regarding the suggestion that the fecal coliform criteria should be applied at the edge of the 381 acres closure zone established by the MA DMF, this is clearly not allowed under the MA SWQS, which do not establish any link between its water quality criteria for protecting waters designated for shellfishing and administrative closure zones established by MA DMF. Simply put, water quality in Massachusetts Bay must support its designated use of shellfishing even if MA DMF determines that the use should not be exercised within portions of that waterbody. *See* January 12, 2007 Letter from EPA to MassDEP re: Review and Action on Water Quality Standards, September 19, 2007, at 4.

Next, regarding the suggestion that a mixing zone be established for achieving the fecal coliform criteria, the MA SWQS at 314 CMR 4.03(2), Mixing Zones, allow the recognition of a limited area or volume of a waterbody as a mixing zone, and that waters within the mixing zone may fail to meet specific water quality criteria. However, among the conditions that must be met before a mixing zone may be established is that the mixing zone may not "interfere with the existing or designated uses of surface waters." Because bacterial counts in excess of the applicable water quality criteria would interfere with attainment of designated uses within the mixing zone (in this case shellfish harvesting), EPA and MassDEP have historically not allowed mixing zones for bacteria and have instead incorporated the water quality criteria as end-of-pipe limits.

This practice is further supported by MassDEP's "Implementation Policy for Mixing Zones." Part III(a) of this policy states that "The most important site-

¹¹ Ltr from Michael F. Valenti, Jr., Chairman of the Board of Public Works, Town of Marshfield to Olga Vergara, EPA New England, dated July 11, 2011.

specific factors governing the application of mixing zones are the actual and projected water uses in a segment. Certain uses may be deemed critical in that no excursions from criteria are desirable. These include areas that are highly sensitive or extensively used. In order to provide a reasonable margin of safety for these uses, no mixing zone can be permitted.” The critical uses identified in part III a) include shellfish harvest areas (Class SA and SB) and public bathing beaches and other heavily used recreational waters. The specific language in Part III a) regarding mixing zones in shellfish harvest areas is “Shellfish Harvest Waters - Mixing zones in shellfish harvest waters (Class SA and Class SB) shall not be authorized unless it is affirmatively demonstrated that the mixing zone does not encompass important shellfish harvest areas and will not adversely diminish the established population of shellfish in the segment.”

Further support for exercising caution when allowing mixing zones for bacteria is found in a November 12, 2008, memo prepared by EPA’s Office of Science and Technology regarding initial zones of dilution for bacteria in rivers and streams designated for primary contact recreation that concludes that “...we cannot envision a circumstance where discharges that elevate bacteria levels beyond criteria can be viewed as protective of the primary recreation use in fresh flowing waters like rivers and streams.”¹² While this analysis is specifically evaluating mixing zones in fresh water, the principles on which it is based – that people recreating in or downstream from a zone of initial dilution may be exposed to greater risk of the acute endpoint of gastrointestinal illness- is also applicable to marine waters. Given that this receiving water is also designated for shellfishing, and that consumers of shellfish with elevated bacteria would also be subject to increased risk of illness, the risk in marine waters designated for both contact recreation and shellfishing would be more elevated than for fresh waters.

The facility is currently meeting the bacterial limits in the current permit and antibacksliding considerations would also counsel against a relaxation of the limits. Furthermore, in light of the existing and designated recreational and aquatic life uses in the receiving waters, and the human health concerns associated with excursions of bacterial criteria, EPA believes it is appropriate to follow this reasonably conservative approach.

Considering the foregoing, the Agencies have determined that a margin of safety is reasonable in this case and no mixing zone for attaining the bacteria criteria should be allowed.

The draft permit includes a monthly geometric mean limit of 14 colony forming units (cfu) per 100 ml, and maximum daily limit of 28 cfu/100 ml.

The sampling frequency of three (3) times per week has been maintained in the draft permit.

¹² Ephraim S. King, Director, Office of Science and Technology, U.S. EPA Memo to Walter Spratlin, Director, Water, Wetlands and Pesticides, U.S. EPA, RE: Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation, November 12, 2008, p 2.

6.2.2.5.2. *Enterococci*

The water quality criteria for Class SA bathing beach waters require that no single sample shall exceed 104 colonies per 100 ml, and that the geometric mean of the five most recent samples taken within the same bathing season shall not exceed 35 enterococci colonies per 100 ml and during the non-bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml.

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.

The current permit requires the permittee to sample enterococcus once per month and report the maximum daily enterococcus count. The values have ranged from 13.71-222.85 cfu/100 ml and the average of the data set is 56.37 cfu/100 ml. Since the current permit became effective (February 1, 2007), there have been ten (10) single samples that have exceed 104 cfu/100 ml and three (3) of three (3) bathing seasons that the geometric means of 5 samples have exceeded 35 cfu/100 ml.

This reporting requirement has been in place for a full permit term and Enterococci monthly geometric means have ranged from 13.71 to 222.85 cfu/100 ml between October 2010 and October 2013. EPA has established a monthly average (geometric mean) effluent limit of 35 cfu/100 ml and a daily maximum effluent limit of 276 cfu/100 ml for Enterococci in the draft permit in order to ensure that the discharge does not cause or contribute to exceedances of the MA SWQS found at 314 CMR 4.05 (4)(a)4b. The sampling frequency for enterococci is also three (3) times per week and must be collected concurrent with samples for fecal coliform bacteria.

6.2.2.6. **Dissolved Oxygen**

The 2011 application indicates that the effluent dissolved oxygen concentration is well below the MA SWQS of 6.0 mg/l with a maximum daily discharge of 3.98 mg/l and an average daily discharge of 3.22 mg/l. EPA discussed this issue with the permittee and found that samples were being collected in the contact tank upstream from the drop to the wet well just prior to discharge to the outfall¹³. At EPA's request, the permittee collected samples from the both the contact tank (before the drop) and in the wet well (after the drop) and found, as expected, that the dissolved oxygen levels in the wet well were significantly higher (Table 5).

Table 5: Dissolved Oxygen concentrations sampled upstream and downstream of weir.

Time of Sampling	Dissolved Oxygen (mg/l)					
	800 hrs		1100 hours		1400 hours	
	Old pre-weir	New post-	Old pre-	New post-	Old pre-	New post-

¹³ Kevin Silva (personal communications, April 3, 2013)

		weir	weir	weir	weir	weir
4/3/2013	3.91	***	***	8.59	***	8.36
4/4/2013	4.06	7.12	4.47	8.65	4.34	8.26
4/5/2013	3.65	6.31	3.93	8.16	3.90	8.04
4/6/2013	4.53	6.31	4.52	8.50	4.54	8.41
4/7/2013	4.17	6.40	4.48	7.61	4.45	8.41
4/8/2013	3.63	7.60	4.41	6.71	4.34	8.03
4/9/2013	3.50	7.86	4.24	7.73	4.25	7.81
4/10/2013	3.54	9.03	4.09	5.86	4.19	7.42
4/11/2013	3.25	8.07	3.95	7.62	***	***
4/12/2013	***	7.82	***	***	***	***
4/13/2013	***	8.25	***	***	***	***
4/14/2013	***	8.55	***	***	***	***
4/15/2013	***	8.14	***	***	***	***
4/16/2013	***	9.28	***	***	***	***
4/17/2013	***	8.16	***	***	***	***
4/18/2013	***	7.92	***	***	***	***
4/19/2013	***	6.82	***	***	***	***
4/20/2013	***	6.7	***	***	***	***
4/23/2013	3.96	9.7	3.88	6.5	3.95	8.82
4/24/2013	3.82	8.3	4.31	6.66	4.21	8.3
4/25/2013	3.88	8.28	4.3	6.03	4.02	8.01
4/26/2013	3.75	8.11	4.45	6.31	4.41	7.73
4/27/2013	4.41	8.25	4.56	7.34	4.23	7.03
4/28/2013	4.38	8.58	4.56	7.76	4.53	6.86
4/29/2013	4.09	8.12	4.5	8.38	4.57	6.35
4/30/2013	4.14	8.29	4.49	8.77	4.41	8.02
5/1/2013	4.04	8.1	4.39	8.4	4.24	8.23
5/2/2013	4.13	8.12	***	***	***	***

*** no data

EPA has authorized the permittee to move the sampling location to the wet well since it provides a more representative sample of the discharge.

EPA has concluded that an effluent limit is not necessary at this time. The permittee is required to report the average monthly dissolved oxygen concentration and the maximum daily dissolved oxygen concentration. The sampling frequency is five (5) days per week.

6.2.3. Non-conventional Pollutants

Relatively low concentrations of metals in receiving waters can be toxic to resident aquatic life species. EPA is required to limit any pollutant that is, or may be discharged at a level that causes, or has reasonable potential to cause, or contributes to an excursion above any water quality criterion. See 40 CFR 122.44(d)(1)(vi). Effluent metals data submitted with whole effluent toxicity test reports were reviewed to determine if concentrations of other toxics in the discharge have the potential to exceed aquatic life criteria in Massachusetts Bay.

Table 6: National Water Quality Criteria for selected metals

Parameter	Dissolved	Dissolved	Translator*	Total Criteria	Total Criteria
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	Criteria CMC (ug/l) (Acute)	Criteria CCC (ug/l) (Chronic)		CMC (ug/l)	CCC (ug/l)
Cadmium	40	8.8	0.994	40.24	8.85
Chromium	1100	50	0.993	1107.75	50.35
Copper	4.8	3.1	0.83	5.8	3.7
Lead	210	8.1	0.951	220.82	8.52
Nickel	74	8.2	0.990	74.75	8.28
Zinc	90	81	0.946	95.14	85.62

*Same translator is used for both acute and chronic criteria for saltwater.

Table 7: Applicable Water Quality Criteria

Parameter	Total Recoverable Criteria		Critical Dilution Factor	Average Dilution Factor	Applicable Acute Criteria (ug/l) = CMC * Critical Dilution Factor	Applicable Chronic Criteria (ug/l) = CCC * Average Dilution Factor
	Acute Criteria CMC (ug/l)	Chronic Criteria CCC (ug/l)				
Cadmium	40.24	8.85	44	53	1770.56	469.05
Chromium	1107.75	50.35			48741	2668.55
Copper	5.8	3.7			255.2	196.1
Lead	220.82	8.52			9716.08	451.56
Nickel	74.75	8.28			3289	438.84
Zinc	95.14	85.62			4186.16	4537.86

Table 8: Metals concentrations as reported in Whole Effluent Toxicity (WET) reports

Date	Cadmium (ml=1 ug/l)	Chromium (ml = 5 ug/l)	Copper (ml = 2.5 ug/l)	Lead (ml = 5 ug/l)	Nickel (ml = 4 ug/l)	Zinc (ml = 20 ug/l)
	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
10/9/2012	<4	<5	28	<1	<10	104
7/10/2012	<4	<5	21	<1	<10	86
10/11/2011	<4	<5	13	<1	<10	107
7/12/2011	<4	<5	8	<1	<10	29
10/12/2010	<4	<5	10	<1	<10	64
7/8/2010	<4	<5	8	<1	<10	68
10/13/2009	<4	<5	13	<1	<10	<20
10/16/2008	<4	<5	7	<1	<10	52
7/15/2008	<4	<5	10	<1	<10	64
10/10/2007	<4	<5	94	1	<10	125
7/10/2007	<4	<5	24	2	<10	73
Minimum			7	1		29
Maximum			94	2		125
Median			13	1.5		77.2
Number (detects)			11	2		10

ml = minimum quantification level

The minimum detection levels used to report cadmium and nickel are higher than those required by the Marine Acute Toxicity Test Procedure and Protocol (September 1996) which was attached to the current permit. They are, however, lower than the applicable criteria when dilution is considered. Copper, lead and zinc were found in quantifiable concentrations in the Marshfield WWTF effluent discharge.

EPA bases its determination of “reasonable potential” on a characterization of the upper bound of expected effluent concentrations based on statistical analysis of the available monitoring data. As noted in EPA’s *Technical Support Document for Water Quality-Based Toxics Control*, March, 1991 (TSD) “[a]ll monitoring data, including results for concentrations of individual chemicals, have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty.” Thus with a limited data set, the maximum concentration that has been found in the samples may not reflect the full range of effluent concentration. On the other hand, individual high points may be outliers or otherwise not indicative of the normal range of effluent concentrations.

To account for this, EPA has developed a statistical approach to characterizing effluent variability in order to reduce uncertainty in the process. As “experience has shown pollutant discharges are generally lognormally distributed,” TSD at App. E, EPA uses a lognormal distribution to model the shape of the observed data, unless analysis indicated a different distributional model provides a better fit to the data. The model parameters (mean and variance) are derived from the monitoring data.

The lognormal distribution generally provides a good fit to environmental data because it is bounded on the lower end (i.e. you cannot have pollutant concentrations less than zero) and is positively skewed. It also has the practical benefit that if an original lognormal data set X is logarithmically transformed (i.e. $Y = \ln [X]$) the resulting variable Y will be lognormally distributed. Then the upper percentile expected values of X can be calculated using the z -score of the standardized normal distribution (i.e. the normal distribution with mean = 0 and variance = 1), a common and relatively simple statistical calculation. The p^{th} percentile of X is estimated by

$$X_p = \exp(\mu_y + z_p \sigma_y), \quad \begin{array}{l} \text{where } \mu_y = \text{mean of } Y \\ \sigma_y = \text{standard deviation of } Y \\ Y = \ln[X] \end{array}$$

For the 95th and 99th percentiles, $z_{95} = 1.645$ and $z_{99} = 2.326$, so that

$$X_{95} = \mu_y + 1.645 \sigma_y$$

$$X_{99} = \mu_y + 2.326 \sigma_y$$

These upper percentile values are used to determine whether a discharge has a reasonable potential to cause or contribute to an exceedance of a water quality standard. For reasonable potential to exceed the acute criterion, which is based on acute effects with one hour of exposure to the pollutant, the 99th percentile is used to represent the maximum expected pollutant level. For the chronic criterion, representing a four day exposure, the 95th percentile is used. The combination of these upper bound effluent concentrations with dilution in the receiving water is calculated to determine whether the water quality criteria will be exceeded.

As applied to the Marshfield discharge, the analysis is as follows. Table 9 shows effluent

concentrations for copper, along with the log-transformed data. (The datasets for lead and zinc, which include non-detects, are analyzed below.)

Table 9: Analysis of Copper Data

Date	Cu (ug/L)	ln(Cu)
10/9/2012	28	3.332
7/10/2012	21	3.045
10/11/2011	13	2.565
7/12/2011	8	2.079
10/12/2010	10	2.303
7/8/2010	8	2.079
10/13/2009	13	2.565
10/16/2008	7	1.946
7/15/2008	10	2.303
10/10/2007	94	4.543
7/10/2007	24	3.178
μ = mean of ln(X)		2.722
σ = standard deviation of ln(X)		0.764
95th percentile = $\exp(\mu+1.645\sigma)$	52.95	
99th percentile = $\exp(\mu+2.326\sigma)$	89.81	

Based on the mean (μ) and the standard deviation (σ) of the log-transformed data, the 95th and 99th percentile expected concentrations are calculated and compared with the effluent concentration required to meet the instream criteria (relevant water quality criteria times dilution factor).

Table 10: Applicable water quality criteria for copper times dilution compared with effluent data.

	Applicable Criteria times dilution factor	95 th percentile	99 th percentile
Copper			
acute	255		89.81
chronic	196	52.95	

As Table 10 indicates, the upper bound copper concentrations are below the relevant criteria times the dilution factor so no further analysis is necessary.

For lead and zinc, the datasets include a mixture of non-detect values and values above the detection limit. Therefore, EPA characterized the data using a “delta-lognormal” distribution as recommended in the *TSD*. The analysis for lead, shown in Attachment B, report that the upper bound expected pollutant concentrations for lead are 1.89 ug/l (95th percentile) and 3.09 ug/l (99th percentile).

Attachment C shows the analysis for zinc which calculated the upper bound expected pollutant concentrations for zinc as 124.5 ug/l (95th percentile) and 186.92 ug/l (99th percentile)

Table 11: Applicable water quality criteria for lead

	Applicable Criteria times dilution factor	95th percentile	99th percentile
Lead			
acute	9716		3.09
chronic	451	1.89	
Zinc			
acute	4186		186.92
chronic	4538	124.50	

Table 11 shows that reported concentrations of lead and zinc in the discharge are significantly less than the applicable criteria times the dilution factor; therefore, there is no reasonable potential and limits do not need to be established.

6.2.3.1. Nutrients

The current permit does not including any nutrient monitoring requirements. The National Estuarine Eutrophication Assessment Update¹⁴ identifies Massachusetts Bay as experiencing a moderate level of overall eutrophication. There is some concern about high chlorophyll a levels and macroalgae production. An emerging concern is the occurrence of annual nuisance toxic blooms that cause shellfish bed closures; however, in the case of Massachusetts Bay, these blooms appear to originate offshore and are advected into the bay. For this reason, the nuisance/toxic bloom rating for Massachusetts Bay was adjusted to low since the blooms do not originate within the bay. The emerging theory is that these blooms, mostly of *Alexandrium* spp., may originate within estuaries, due to cysts that have settled in the estuarine sediments.

At this time, EPA does not believe that the discharge of nitrogen from this facility has the reasonable potential to cause or contribute to an exceedance of water quality standards. However, given the ongoing concerns discussed above, EPA has included monitoring requirements for ammonia nitrogen, Total Kjeldahl nitrogen and nitrate plus nitrite concentrations in the proposed permit. The sampling frequency is once (1) per month.

6.2.4. 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 MA SWQS 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” [314 CMR 4.05(5)(e)].

¹⁴ 2007, Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner, 2007. Effects of Nutrient Enrichment in the Nation’s Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

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 sources, the state narrative water quality criterion, the level of dilution at the discharge location 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 ($LC_{50} \geq 100\%$). (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and TSD.)

MassDEP's *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) requires limits and monitoring of whole effluent toxicity in NPDES permits. In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentrations in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into Massachusetts Bay in amounts which would affect aquatic or human life.

Consistent with EPA/MassDEP policies, an LC50 limit of 100% has been included in the draft permit. The LC50 limit is the recommended limit for facilities with a dilution ratio of more than 20:1 and less than 100:1.

The draft permit carries forward a requirement for two acute toxicity tests per year using Mysid Shrimp only. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted two times per year. The tests are to be conducted during the months of July and October.

A review of 24 months of WET results shows compliance for Mysid Shrimp with all tests with the result of an $LC_{50} \geq 100\%$.

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).

7. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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 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-permittee has a ‘duty to mitigate’ as stated in 40 CFR §122.41 (d). This requires the co-permittee 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.

The proposed permit includes additional new Operation and Maintenance requirements. The permittee and co-permittee are required to prepare a map of the sewer collection systems it owns within 30 months of the effective of the permit. Details of the mapping requirements can be found in the permit in Section C.4.

Because Duxbury owns and operates a collection system that discharge to the Marshfield treatment works, it has been included as a co-permittee for the specific permit requirements discussed in the paragraph above. The historical background and legal framework underlying this co-permittee approach is set forth in Attachment A to this Fact Sheet, *EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that Include Municipal Satellite Sewage Collection Systems*.

8. 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 CWA Section 405(d) technical standards (see 40 CFR Section 503) and that it submit an annual reports describing its sludge disposal practices. Sludge from the treatment facility is shipped offsite by Waste Water Services, Inc. Because the final disposal or use of the permittees sludge is done by others, the permittee is not currently 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. Under its current disposal method the permittee is only required to submit an annual report by February 19th.

9. ANTI-BACKSLIDING

Section 402(o) of the CWA generally provides that the effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the previous permit. Except under certain limited circumstances, “backsliding” from effluent limitations contained in previously issued permits is prohibited. EPA has also promulgated anti-backsliding regulations, which are found at 40 CFR § 122.44(l).

The draft permit does not include any less stringent effluent limitations and so is consistent with antibacksliding.

10. ANTIDEGRADATION

The Massachusetts Antidegradation Policy is found at 314 CMR 4.04. The Commonwealth has also developed implementation procedures¹⁵. All existing uses of Massachusetts Bay must be protected. EPA believes that the antidegradation policy has been met because the draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage.

11. 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 CFR § 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.

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.

11.1. EFH Species

The following is a list of the EFH species and applicable lifestage(s) for the area that includes Atlantic Ocean waters around Marshfield:

¹⁵ Haas, Glenn, MassDEP, 2009, "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00".

Summary of Essential Fish Habitat (EFH) Designation

10 x 10 Square Coordinates:

Boundary	North	East	South	West
Coordinate	42° 20.0 N	70° 40.0 W	42° 10.0 N	70° 50.0 W

Square Description (i.e. habitat, landmarks, coastline markers): Waters within the Atlantic Ocean within Massachusetts Bay within the square east of Scituate., MA, and north and east of Cohasset, MA., affecting the following: east of from the North River, Marshfield, MA., to Straits Pond and Black Rock Beach in Cohasset, MA. Other features affected include: Herring River, Rivermoor, Third Cliff, Second Cliff, First Cliff, Scituate Harbor, Cedar Pt., Tar Pouch, Stellwagen Ledges, Collamore Ledge, Bates Rock, Jason Shoal, Davis Ledge, Cowens Rocks, Musquashcut Pond, N. Scituate Beach, Smith Rocks, Strawberry Pt., Minots Ledge, Cohasset Harbor, The Grampuses, Little Harbor, eastern Straits Pond, and Black Rocks. Also included is part of the Boston Harbor Shipping Traffic Lanes on the northeast corner.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (<i>Gadus morhua</i>)	X	X	X	X
haddock (<i>Melanogrammus aeglefinus</i>)	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
winter flounder (<i>Pseudopleuronectes americanus</i>)	X	X	X	X
yellowtail flounder (<i>Limanda ferruginea</i>)	X		X	X
windowpane flounder (<i>Scophthalmus 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
monkfish (<i>Lophius americanus</i>)	X	X		X
bluefish (<i>Pomatomus saltatrix</i>)			X	X
long finned squid (<i>Loligo pealeii</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>Centropristis striata</i>)	n/a		X	X
surf clam (<i>Spisula solidissima</i>)	n/a	n/a	X	X
spiny dogfish (<i>Squalus acanthias</i>)	n/a	n/a		X
bluefin tuna (<i>Thunnus thynnus</i>)			X	X

Massachusetts Bay in the vicinity of the Marshfield Wastewater Treatment Facility discharge is designated essential fish habitat (EFH) for the species listed in the table above. EPA has determined that the limits and conditions contained in this draft permit minimize adverse effects to the EFH species present for the following reasons:

- This is a reissuance of an existing permit;
- The dilution factor is 53:1 under average conditions and 44:1 under peak conditions;
- The facility discharges from a multiport diffuser approximately 2,900 feet offshore about 1 foot above the bottom of Massachusetts Bay. These factors provide a sufficient zone of passage unaffected by the discharge to allow the movement of EFH species;
- Draft permit limits specifically protective of aquatic organisms have been established for chlorine, based on EPA water quality criteria;
- The facility withdraws no water from Massachusetts Bay, so no life stages of EFH species are vulnerable to impingement or entrainment from this facility;
- Acute toxicity tests will be conducted two times per year to ensure that the discharge does not present toxicity problems;
- The draft permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the draft permit were developed to be protective of all aquatic life;
- The draft permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the draft permit adequately protect all aquatic life, including those species with EFH designation in the receiving water, and that further mitigation is not warranted. NMFS will be notified and EFH consultation 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.

12. ENDANGERED SPECIES

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on Federal agencies regarding endangered or threatened species of fish,

wildlife, or plants (listed species) and habitat of such species that has been designated as critical (a “critical habitat.”). The ESA requires every Federal agency, in consultation with and with the assurance of the Secretary of Interior, to insure that any action it authorizes, funds or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The NMFS administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to determine if any listed species might potentially be impacted by the re-issuance of this NPDES permit. Coastal areas of Massachusetts provide habitat for a number of federally protected marine species, including: mammals (whales: North Atlantic Right, Humpback, Fin, Sei, Sperm, Blue – all endangered); reptiles (sea turtles: Kemp’s Ridley, Leatherback, Green – all endangered; Loggerhead – Threatened but proposed for listing as endangered).

Based on the expected distribution of these species, it is unlikely that any of the marine NMFS listed species identified above would be expected to be present in the action area of the Marshfield WWTP discharge, which is 2,900 feet from shore and one foot above the bottom, northeast of Brant Rock. Therefore, consultation is not required for these protected species.

It is EPA’s understanding that the only federally listed species that have the potential to occur in the action area of the Marshfield WWTF are the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), and to a lesser extent, the shortnose sturgeon (*Acipenser brevirostrum*). EPA has evaluated the potential impacts of the permit action on these two species of sturgeon. On the basis of this evaluation, EPA’s preliminary determination is that this action “is not likely to adversely affect listed species or critical habitat.”¹⁶ 16 CFR § 402.13(a). EPA is requesting NMFS’s written concurrence with EPA’s determination through the information contained in this fact sheet and Attachment, as well as a letter from EPA to NMFS, under separate cover.

Attachment D provides the complete discussion of EPA’s Endangered Species Act assessment as it relates to the renewal of the Marshfield WWTF’s NPDES permit.

13. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW

40 CFR § 122.49 (d) states: The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulation (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce) overrides the State’s nonconcurrence).

¹⁶ A project can be considered “unlikely to adversely affect” a listed species “when direct or indirect effects of the proposed project on listed species are expected to be discountable, insignificant or completely beneficial.” August 20, 2009, Letter from Patricia A. Kurkul, Regional Administrator, NOAA, National Marine Fisheries Service, Northeast Region, to Melville P. Cote, EPA Region 1 (“NOAA’s August 20, 2009, Rockport Consultation Letter”) (addressing ESA issues concerning EPA’s proposed NPDES permit for the Rockport, MA, POTW).

The discharge is within the defined CZM boundaries. The permittee has submitted a letter dated June 15, 2011 to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

14. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under the authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41(j), 122.44(l), and 122.48.

The draft permit includes new provisions related to DMR submittals to EPA and the State. The draft permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports that precludes the use of NetDMR from submitting DMRs and reports (“opt-out request”). In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to 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 accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1 is provided on this website.

EPA currently conducts free training on the use of NetDMR and anticipates that the ability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit <http://www.epa.gov/netdmr> for contact information for Massachusetts.

The draft permit requires the permittee to report monitoring results obtained during each calendar month using Net DMR, 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 as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

The draft permit also includes an “opt-out” request process. Permittees, who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility

would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the draft permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

15. 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.

16. GENERAL CONDITIONS

The standard 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.

17. STATE CERTIFICATION REQUIREMENTS

The staff of 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.

18. 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, Attn: Michele Cobban Barden, 5 Post Office Square, Suite-100, (OEP06-1), Boston, Massachusetts 02109-3912 or via email to barden.michele@epa.gov. The comments should reference the name and permit number of the facility for which they are being provided.

Any person, prior to such date, may submit a request in writing to EPA and the State's Agency for a public hearing to consider the 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 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. Within thirty (30) days following the notice of final permit decision, permit may be appealed to the Environmental Appeals Board in the manner described at 40 CFR § 124.19.

EPA AND MassDEP CONTACTS

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:

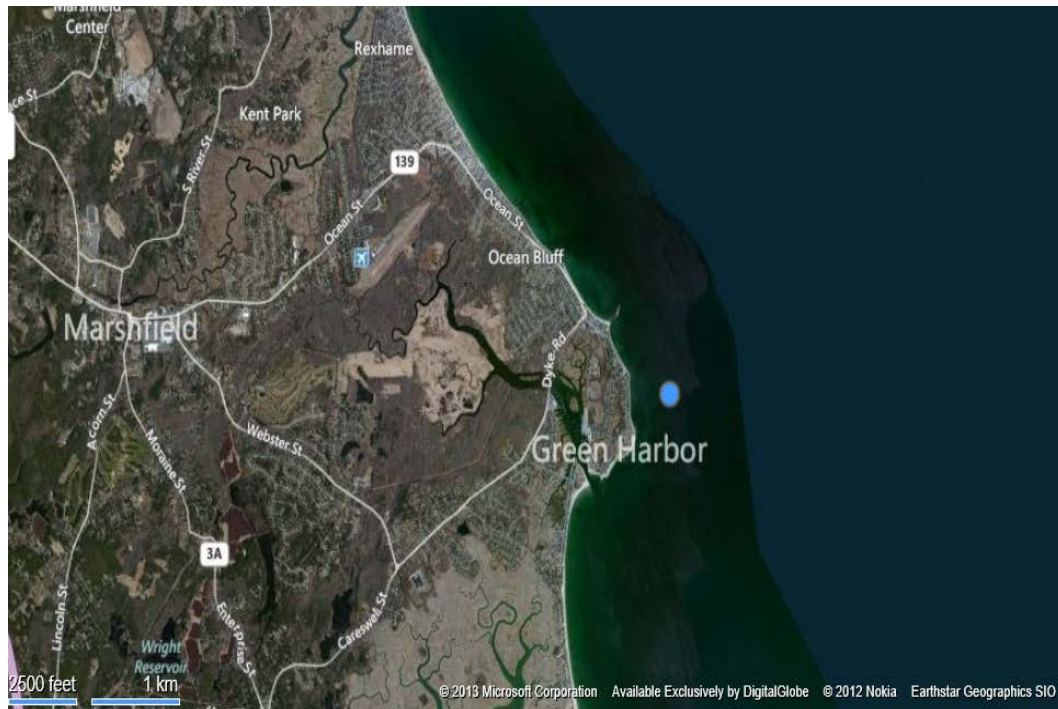
Michele Cobban Barden
EPA New England, Region1
5 Post Office Square, Suite-100 (OEP06-1)
Boston, MA 02109-3912
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Claire Golden
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Division of Watershed Management
Surface Water Discharge Permit Program
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February 11, 2014
Date

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

Figure 1: Location of the Marshfield WWTF Outfall



Appendix A: Facility DMR Data

The following effluent characteristics were derived from analysis of discharge monitoring data collected from Outfall 001 from October 2010 through October 2013. All data are taken from the monthly discharge monitoring reports. These effluent values characterize the treated wastewater discharged from this facility.

	Flow			BOD5					BOD % Removal	TSS					TSS % Removal	pH		Fecal Coliform Bacteria		Enterococcus		L M S
	(MGD)			(mg/l)			lbs/day		%	(mg/l)			lbs/day		%	(S.U)		cfu/100 ml		mg/l		
	Average Monthly (Annual Average)	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Minimum	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Minimum	Minimum	Maximum	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	
Effluent Limit	2.1	Report	Report	30.00	45.00	Report	526.00	789	85.0%	30	45	Report	536.00	789.00	85.0%	6	8.5	14	28	***	Report	
Oct-13	1.4	0.94	1.037	4.39	4.52	5.06	33.90	36.2	95.1%	27.2	28	28	228.50	228.50	91.2%	6.4	7.3	13.4	16.4	***	109.10	
Sep-13	1.45	1	1.218	4.68	5.95	5.95	39.00	50.7	94.9%	25.6	30	29.96	249.00	249.00	94.6%	6.2	7.2	9.8	16.4	***	144.50	
Aug-13	1.5	1.17	1.365	4.72	5.82	5.82	44.20	54.6	85.0%	29.3	37.9	37.85	355.30	355.30	93.7%	6.3	7.1	8.6	13.7	***	144.50	
Jul-13	1.54	1.43	1.935	4.62	5.93	5.93	56.10	77.6	95.2%	23.1	27	29	435.60	435.60	91.2%	6.7	8.2	5.3	11.1	***	165.20	
Jun-13	1.5	1.97	3.128	4.88	5.66	5.66	74.40	91.3	94.7%	26	28.1	28.12	515.50	515.50	91.9%	6.6	7.8	7	16.4	***	129.80	
May-13	1.49	1.16	1.298	4.53	5.08	5.47	45.20	52.3	94.9%	25.5	28	28	297.30	279.50	92.6%	6.7	7.6	5.1	13.7	***	144.50	
Apr-13	1.58	1.25	1.503	3.75	4.01	4.01	38.90	44.4	96.0%	26.8	28.6	28.57	300.60	300.60	88.8%	6.8	7.8	11.3	13.7	***	81.42	
Mar-13	1.56	2.08	3.757	4.13	4.84	4.84	65.00	68.2	95.3%	24.5	28	28	518.90	518.90	89.6%	6.9	7.9	6.6	12.4	***	81.71	
Feb-13	1.26	1.64	2.588	4.16	4.56	4.56	58.80	84.8	95.4%	24.3	28	28	582.70	582.70	87.0%	6.7	7.7	2.8	5.3	***	72.57	
Jan-13	1.24	1.17	1.392	5.03	5.69	5.69	48.70	57.9	94.4%	25.6	28	28	292.70	292.70	89.5%	6.6	7.5	1.4	3.1	***	65.71	
Dec-12	1.16	1.29	1.719	4.51	5.24	5.24	51.50	67	94.7%	27.4	28.4	28.42	337.00	337.00	91.8%	6.7	7.6	4.8	13.7	***	127.42	
Nov-12	1.16	1.2	1.803	4.77	5.43	5.78	54.00	71.9	94.3%	20.4	24.2	27	364.50	364.50	91.2%	6.8	7.7	8.8	15	***	102.85	
Oct-12	1.16	1.09	1.328	4.95	5.76	5.76	45.60	55.7	94.3%	27.2	28	28	270.80	270.80	93.0%	6.9	7.7	11.4	15	***	165.20	

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Sep-12	1.17	1.05	1.25	4.74	5.36	5.36	43.20	46.7	94.8%	26.5	28	28	264.80	264.80	89.3%	6.8	7.5	10.6	14.9	***	144.50	
Aug-12	1.18	1.2	1.43	5.27	5.81	6.18	52.00	59.1	85.0%	27.7	28.5	29	310.10	310.10	85.1%	6.8	7.6	10.4	13.7	***	100.57	
Jul-12	1.17	1.2	1.49	4.66	5.69	5.69	46.70	51.7	95.2%	27.4	28	28	310.40	310.40	90.2%	6.6	7.3	11.3	13.1	***	222.85	
Jun-12	1.16	1.28	1.66	4.76	5.59	5.59	51.50	63.7	94.6%	27	28	28	343.90	343.90	87.9%	6.6	7.8	6.9	12	***	97.14	
May-12	1.13	1.25	1.627	4.64	5.94	5.94	48.40	63.9	94.6%	27	28.4	28.42	366.80	366.80	90.0%	6.4	7.4	4.9	10.9	***	97.71	
Apr-12	1.13	1.04	1.185	4.74	5.38	5.38	40.30	50.3	93.8%	25.4	27	27	243.10	243.10	91.6%	6.6	7.2	8.1	13.7	***	97.14	
Mar-12	1.16	1.12	1.298	4.59	5.36	5.36	41.40	44.7	94.3%	25.1	28	28	260.10	260.10	93.1%	6.7	7.3	8.2	13.7	***	48.57	
Feb-12	1.19	1.11	1.285	4.67	5.40	5.4	44.80	52.1	94.9%	25	28	28	260.60	260.60	93.8%	6.8	7.3	7.9	11.4	***	58.28	
Jan-12	1.19	1.21	1.419	4.70	5.59	5.59	46.60	55.3	94.9%	22.5	28	28	274.50	274.50	90.1%	6.7	7.4	6.3	8	***	38.85	
Dec-11	1.34	1.38	1.955	4.63	4.95	4.95	56.00	74.7	94.8%	25.5	27	27	408.40	408.40	90.9%	6.6	7.9	4	5.7	***	30.28	
Nov-11	1.34	1.45	1.994	3.83	4.67	4.67	49.50	53.8	95.8%	22.2	28	28	331.70	331.70	87.9%	6.7	7.3	7.2	10.3	***	30.28	
Oct-11	1.31	1.46	2.47	4.21	4.51	4.51	57.70	83.6	95.1%	23.6	27	27	375.30	375.30	85.0%	6.8	7.5	7	11.4	***	32.57	
Sep-11	1.32	1.29	1.973	3.98	4.19	4.59	45.80	63.3	95.7%	24.2	28	28	460.70	460.70	89.5%	6.9	7.7	8	12	***	33.71	
Aug-11	1.32	1.23	1.611	4.36	5.05	5.05	45.80	55.2	95.2%	25.8	27	27	334.60	334.60	90.7%	7.3	7.9	5.8	8	***	54.85	
Jul-11	1.34	1.21	1.556	4.25	4.86	4.86	43.10	50.7	95.4%	25.5	28	28	271.30	271.30	89.7%	7.3	7.8	5.9	10.9	***	23.42	
Jun-11	1.36	1.18	1.28	3.88	3.66	4.82	34.90	34.9	96.0%	23.2	28	28	241.70	241.70	91.4%	7.2	7.8	5.5	12	***	41.71	
May-11	1.39	1.26	1.36	3.67	3.98	3.98	38.40	42.7	95.9%	20.3	28	28	286.90	286.90	94.9%	3.6	7.7	4	9.7	***	29.71	
Apr-11	1.41	1.45	1.885	4.03	4.94	4.94	50.30	69.7	95.6%	17.8	23	23	258.70	258.70	85.0%	7.1	7.8	4.8	13.1	***	26.28	
Mar-11	1.39	1.37	1.801	4.15	4.88	4.88	55.40	57.9	95.5%	23.8	27	27	363.30	363.30	96.7%	7.2	8.5	4.1	9.1	***	25.14	
Feb-11	1.41	1.51	2.096	3.52	3.58	3.58	41.30	47.2	95.9%	18.8	26	26	323.40	323.40	89.9%	7.1	7.5	3.1	4.7	***	17.71	
Jan-11	1.42	1.33	1.551	4.68	5.18	5.18	54.20	64.6	94.8%	24.3	27	27	335.20	335.20	88.8%	7.2	7.7	3	4	***	13.71	
Dec-10	1.37	1.28	2.749	3.85	4.55	4.55	39.90	43.5	95.9%	27.8	28	28	378.70	340.20	92.2%	7.1	7.7	4	6.5	***	24.57	
Nov-10	1.37	1.22	1.539	3.61	3.99	3.99	37.30	40.4	95.9%	25.3	27	27	346.50	346.50	92.8%	7.1	7.7	3.9	6.8	***	22.28	
Oct-10	1.34	1.11	1.358	5.34	7.02	7.02	51.90	68.2	93.7%	27	28	28	294.20	294.20	89.8%	7.1	8	3.6	5.4	***	18.28	
Min	1.13	0.94	1.04	3.52	3.58	3.58	33.90	34.90	0.85	17.75	23.00	23.00	228.50	228.50	0.85	3.60	7.10	1.40	3.10		13.71	1
Max	1.58	2.08	3.76	5.34	7.02	7.02	74.40	91.30	0.96	29.29	37.85	37.85	582.70	582.70	0.97	7.30	8.50	13.40	16.40		222.85	1
Avg	1.32	1.29	1.73	4.43	5.10	5.18	47.88	58.12	0.95	24.90	27.87	28.01	334.95	333.43	0.91	6.72	7.63	6.62	11.00		77.42	1

Appendix B: Summary of Effluent Characteristics from 2011 NPDES Application

Parameter	Maximum Daily Value	Average Daily Value	Units	Number of Samples
pH (minimum)	7.21	***	Standard Units	***
pH (maximum)	7.59	***	Standard Units	***
Flow Rate	4.58	1.25	MGD	
Temperature (Winter)	65.80	69.70	F	123
Temperature (Spring)	69.90	69.70	F	91
BOD	5.34	4.16	mg/l	52
Fecal Coliform Bacteria	9.30	5.00	#/100 mg	156
Total Suspended Solids	27.80	23.53	mg/l	52
Ammonia	21.00	10.43	mg/l	3
Total Residual Chlorine	0.10	0.10	mg/l	3
Dissolved Oxygen	3.98	3.22	mg/l	365
Total Kjeldahl Nitrogen	27.00	13.13	mg/l	3
Nitrate Nitrogen	16.00	5.47	mg/l	3
Oil and Grease	5.30	3.70	mg/l	3
Phosphorus (Total)	0.91	0.46	mg/l	3
Total Dissolved Solids	1900	1323	mg/l	3
Copper	0.028	0.019	mg/l	3
Zinc	0.094	0.052	mg/l	3
Total Phenolic Compounds	0.030	0.02	mg/l	3
Hardness	312	270	mg/l	3

Figure 2: Flow Diagram for Marshfield WWTF

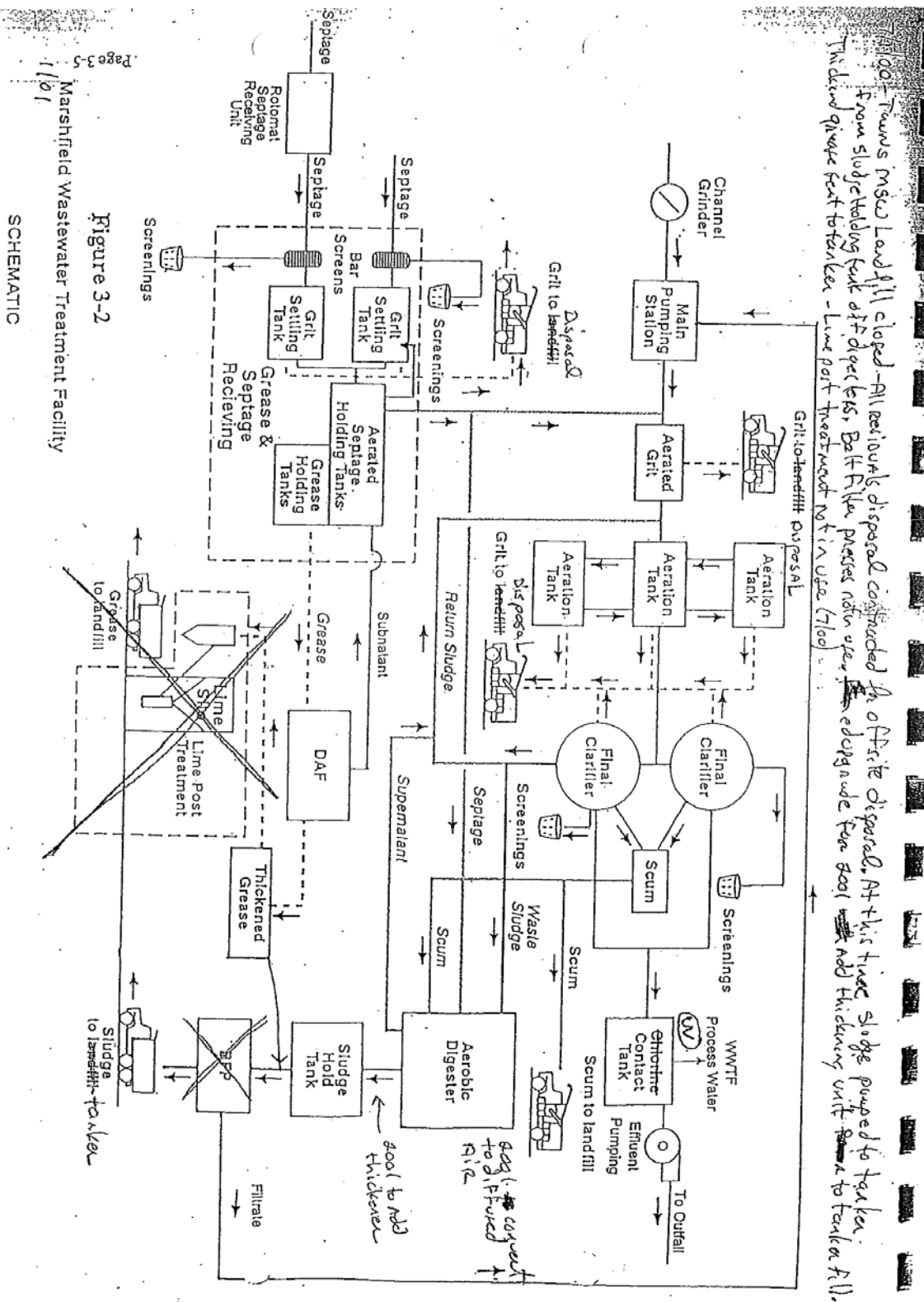
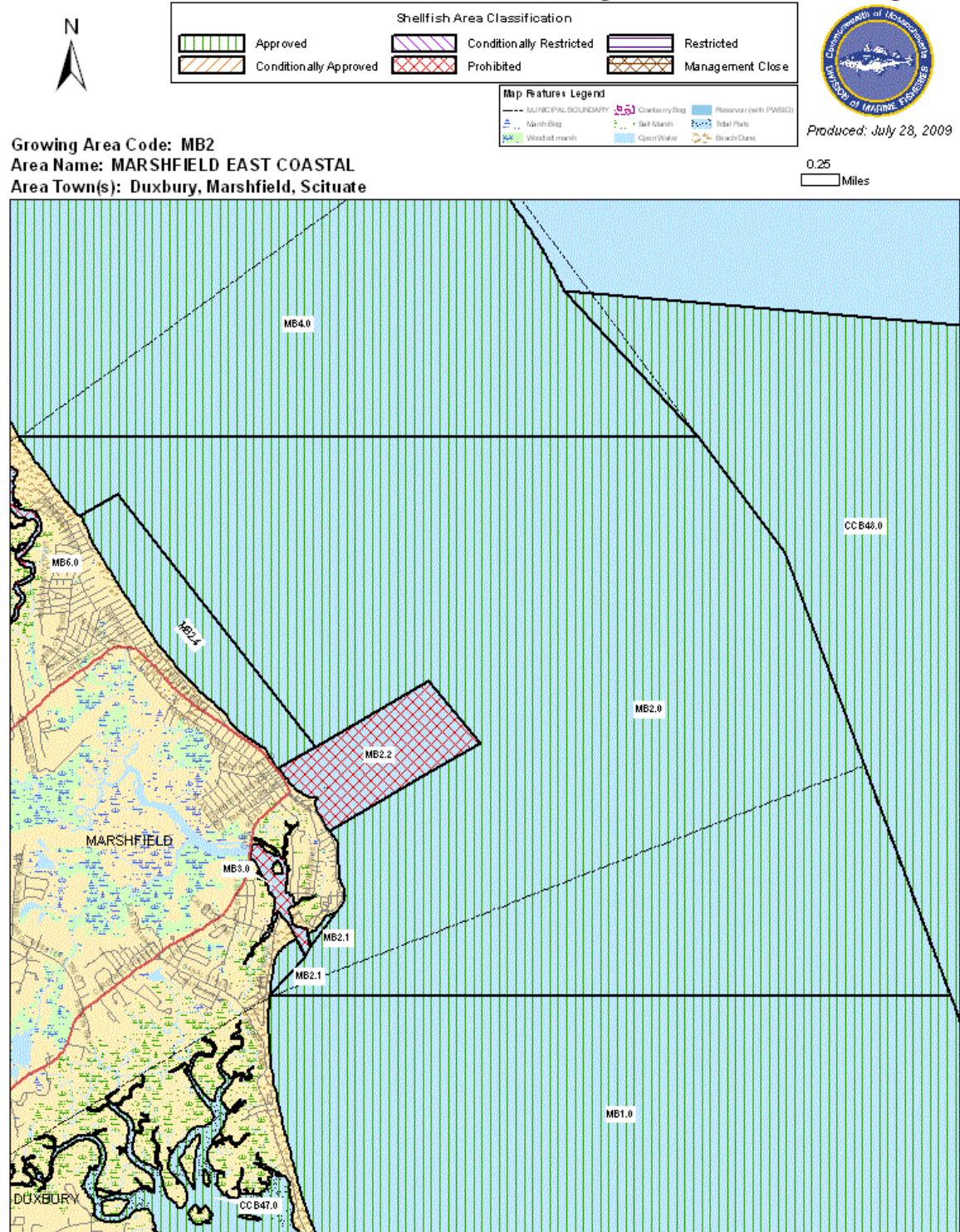


Figure 3: Shellfishing Growing Area Map in the vicinity of the Marshfield point of discharge

Massachusetts Division of Marine Fisheries - Designated Shellfish Growing Area



This product is for planning and educational purposes only. It is not to be used by itself for legal boundary definition or regulatory interpretation.

ATTACHMENT A

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."¹⁷

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

¹⁷ 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).

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 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).¹⁸ 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?

¹⁸ 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.

- (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?
- (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.¹⁹ See 40 C.F.R. §

¹⁹ 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.

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 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.

- I.
- II. 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.²⁰
- III. 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.

20 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).

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.

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.²¹ In light of its past permitting experience and the need to effectively address 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).²² 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

21 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 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.

22 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.").

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 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).²³ Consistent with Region 1’s interpretation, courts have similarly taken a broad reading of the terms treatment works and POTW.²⁴ 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.²⁵

²³ “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 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.”

²⁴ 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”).

²⁵ 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

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:

“.... 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

jurisdiction reinforces the approach taken here.

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. 26 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.²⁷ 40 C.F.R. § 122.2 defines “discharge of a pollutant” as follows:

“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

26 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.

27 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).

zone” and are thus captured under sections (a) and (b) of this definition.²⁸

(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 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.

²⁸ 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.”)

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).²⁹ 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

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

²⁹ 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.*

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

Name	Issue Date
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

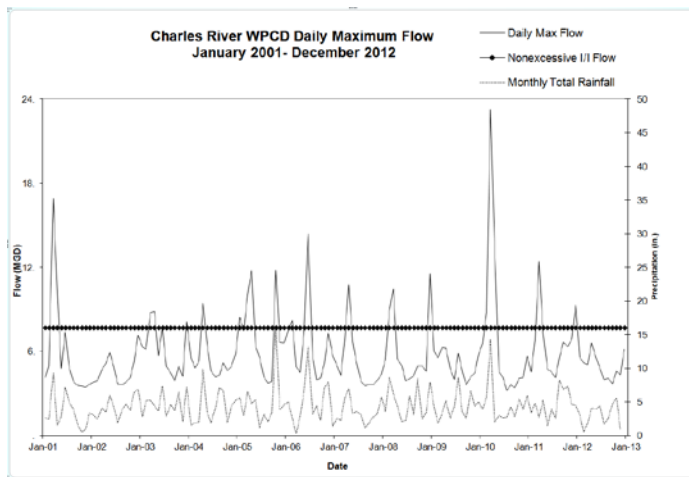
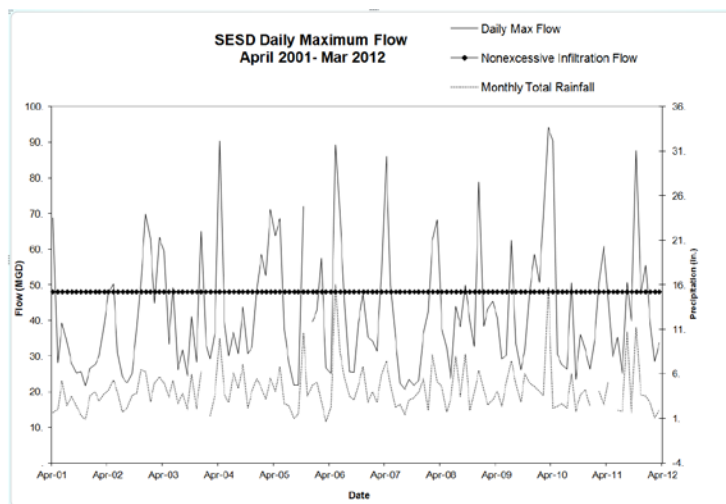


Figure 2. SESD Daily Maximum Flow Compared to Nonexcessive I/I Standard



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

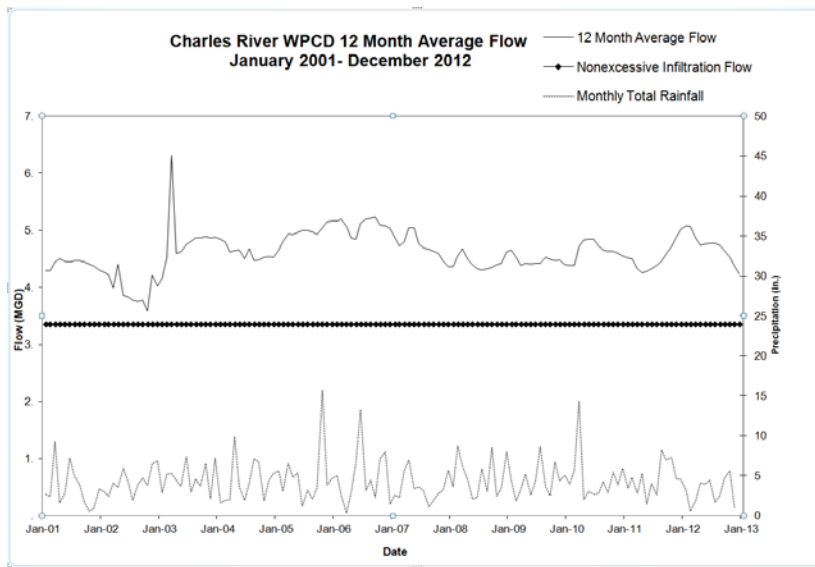
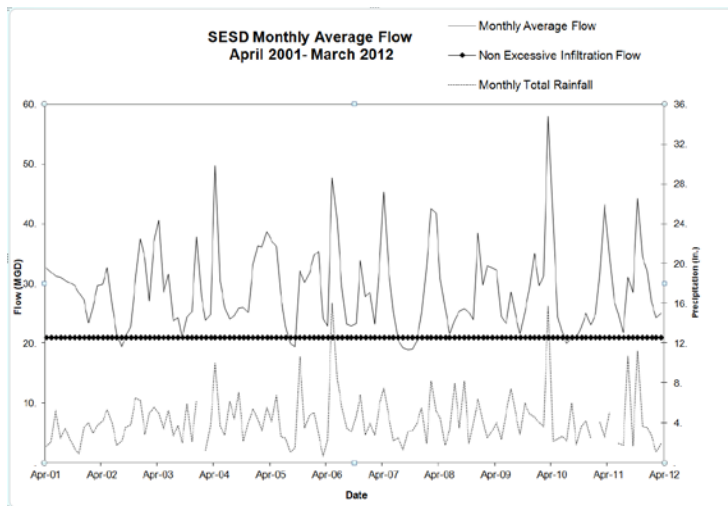


Figure 4. SESD Monthly Average Flow Compared to Nonexcessive Infiltration Standard

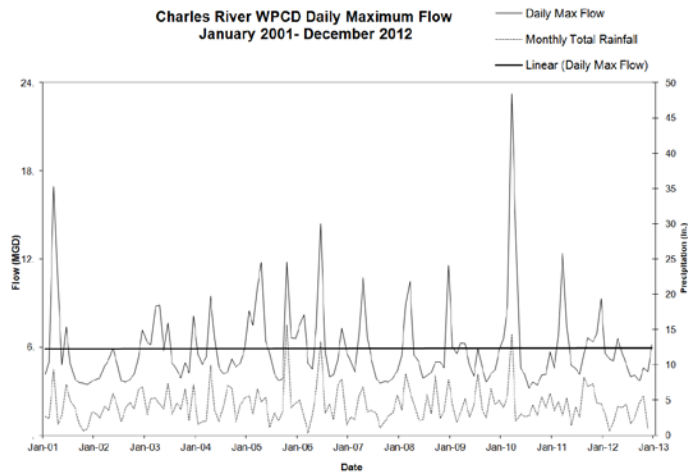


II. Flow Trends

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

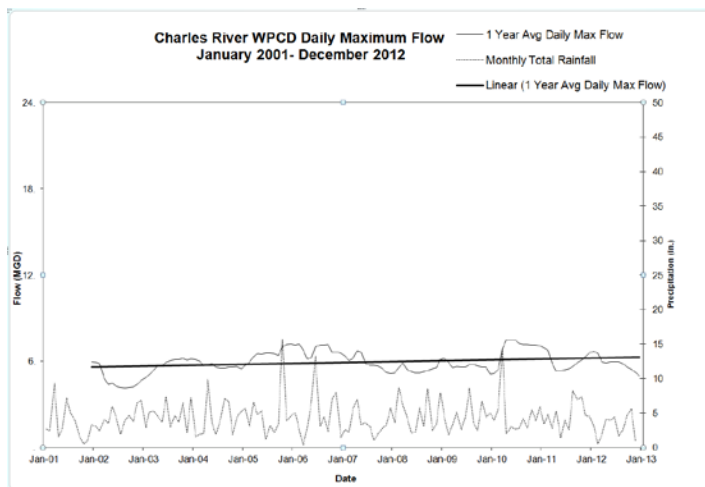
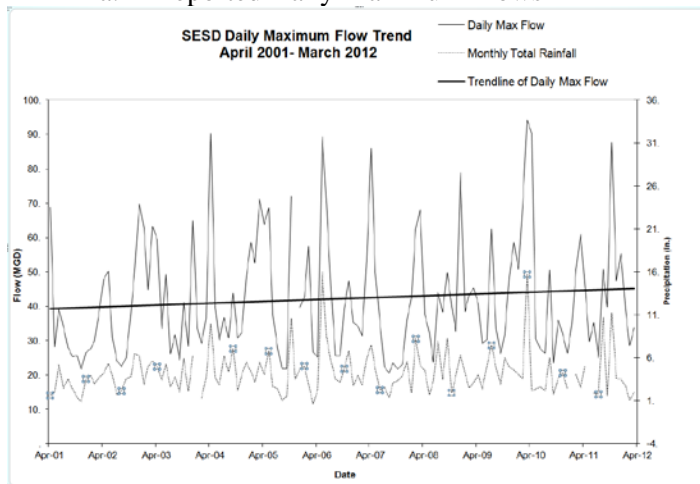
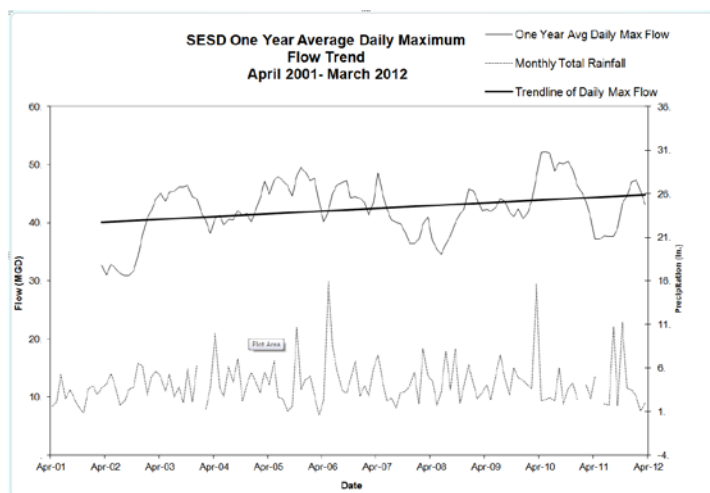


Figure 6. SESD Daily Maximum Flow Trend

a. Reported Daily Maximum Flows



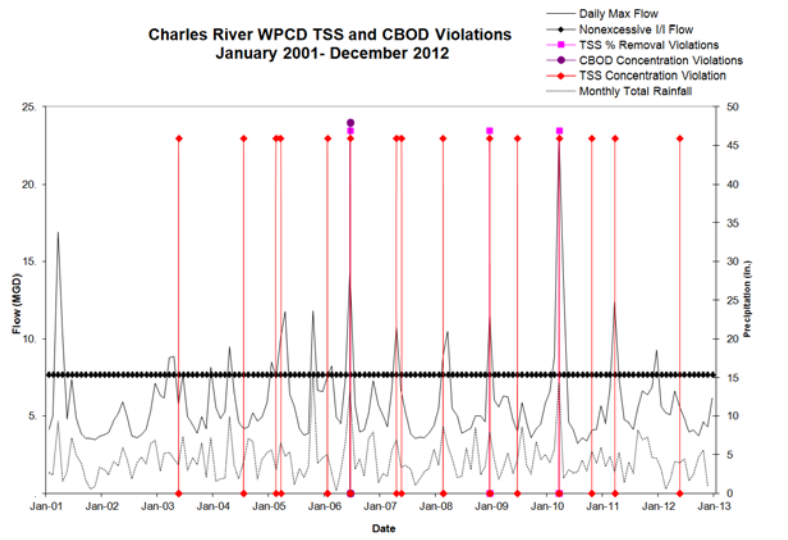
b. One Year Rolling Average of Daily Maximum Flows



III. Violations Associated with Wet Weather Flows

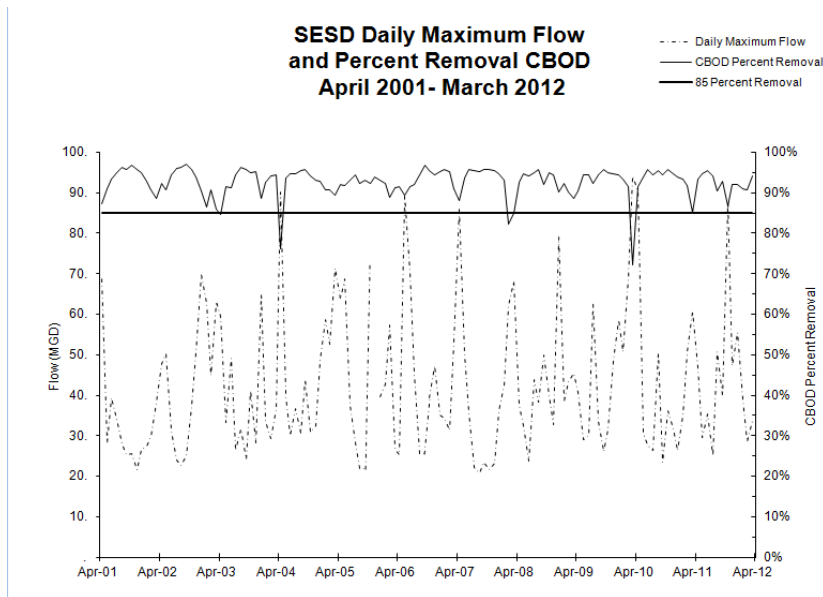
The CRPCD has experienced permit violations that appear to be related to I/I, based on their occurrence during wet weather months when excessive I/I standards are exceeded. Figure 7 shows violations of CRPCD's effluent limits for CBOD (concentration) and TSS (concentration and percent removal). Thirteen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

Attachment B: Statistical Analysis for Lead

Reasonable Potential Analysis
data with ND, >10 samples, lognormal distribution

Dilution Factor: 1

Date	Pb* (ug/l)	lnPb (ug/l)	$(y_i - u_y)^2$
10/9/2012	0		
7/10/2012	0		
10/11/2011	0		
7/12/2011	0		
10/12/2010	0		
7/8/2010	0		
10/13/2009	0		
10/16/2008	0		
7/15/2008	0		
10/10/2007	1	0.0000	0.1201133
7/10/2007	2	0.6931	0.1201133

Pb- (Lognormal distribution, ND)

Daily Maximum Effluent Derivation (some measurements < detection limit)

Detection Limit** = 1.0
 u_y = Avg of Nat. Log of daily Discharge (mg/L) = 0.34657
 $S(y_i - u_y)^2$ = 0.24023
 k = number of daily samples = 11
 r = number of non-detects = 9
 s_y^2 = estimated variance = $(S[(y_i - u_y)^2]) / (k-r-1) = 0.24023$
 s_y = standard deviation = square root $s_y^2 = 0.49013$
 δ = number of nondetect values/number of samples = 0.81818
 z 99th percentile = $z\text{-score}[(0.99-\delta)/(1-\delta)] = 1.59819$
 z 95th percentile = $z\text{-score}[(0.95-\delta)/(1-\delta)] = 0.597760126$

Daily Max = $\exp(u_y + z\text{-score} * s_y)$

99th Percentile Daily Max Estimate = 3.0953 ug/l

99th Percentile Daily Max Estimate including dilution factor = 3.0953 ug/l

95th Percentile Daily Max Estimate = 1.8956 ug/l

95th Percentile Daily Max Estimate including dilution factor = 1.8956 ug/l

** Detection limit here is the detection limit that resulted in the greatest number of Non Detects in the dataset

Attachment C: Statistical Analysis for Zinc

Reasonable Potential Analysis
data with ND, >10 samples, lognormal distribution

Dilution Factor:	1
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Date	Zn* (ug/l)	lnZn (ug/l)	$(y_i - u_y)^2$
10/9/2012	104	4.6444	0.5751356
7/10/2012	86	4.4543	0.3230028
10/11/2011	107	4.6728	0.6190776
7/12/2011	29	3.3673	0.2690685
10/12/2010	64	4.1589	0.0744576
7/8/2010	68	4.2195	0.1112181
10/13/2009	0	0.0000	
10/16/2008	52	3.9512	0.0042549
7/15/2008	64	4.1589	0.0744576
10/10/2007	125	4.8283	0.8879289
7/10/2007	73	4.2905	0.1635761

*ND replaced with zeroes

Mean 3.8860

Pb- (Lognormal distribution, ND)

Daily Maximum Effluent Derivation (some measurements < detection limit)

Detection Limit** = 20.0

u_y = Avg of Nat. Log of daily Discharge (mg/L) = 3.88601

$S(y_i - u_y)^2$ = 3.10218

k = number of daily samples = 11

r = number of non-detects = 1

s_y^2 = estimated variance = $(S[(y_i - u_y)^2]) / (k-r-1) =$ 0.34469

s_y = standard deviation = square root $s_y^2 =$ 0.58710

δ = number of nondetect values/number of samples = 0.09091

z 99th percentile=z-score[(0.99- δ)/(1- δ)] = 2.29037

z 95th percentile=z-score[(0.95- δ)/(1- δ)] = 1.59819314

Daily Max = $\exp(u_y + z\text{-score} \cdot s_y)$

99th Percentile Daily Max Estimate= 186.9215 ug/l

99th Percentile Daily Max Estimate including dilution factor= 186.9215 ug/l

95th Percentile Daily Max Estimate = 124.5009 ug/l

95th Percentile Daily Max Estimate including dilution factor= 124.5009 ug/l

** Detection limit here is the detection limit that resulted in the greatest number of Non Detects in the dataset

Attachment D – NPDES Permit for the Marshfield Wastewater Treatment Facility, Marshfield, Massachusetts, Permit No. MA0101737 Endangered Species Act Assessment, June 28, 2013

Endangered Species Act Assessment

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to determine if any listed species might potentially be impacted by the re-issuance of this NPDES permit. The only two listed species that have the potential to occur in the action area of the Marshfield Wastewater Treatment Facility (WWTF) are the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) and to a lesser extent, the shortnose sturgeon (*Acipenser brevirostrum*). EPA has evaluated the potential impacts of the permit action on these two species of sturgeon. Based on the analysis presented below, EPA has determined that impacts to shortnose sturgeon and Atlantic sturgeon from the Marshfield WWTF, if any, will be insignificant or discountable.

Atlantic Sturgeon Information

The following information was taken from the Status Review of Atlantic Sturgeon (Atlantic Sturgeon Status Review Team. 2007. Status Review of Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*). Report to National Marine Fisheries Service, Northeast Regional Office. February 23, 2007.)

Upon reaching a size of approximately 76-92 cm, the subadults may move to coastal waters (Murawski and Pacheco 1977, Smith 1985), where populations may undertake long range migrations (Dovel and Berggren 1983, Bain 1997, T. King supplemental data 2006). Tagging and genetic data indicate that subadult and adult Atlantic sturgeon may travel widely once they emigrate from rivers. Subadult Atlantic sturgeon wander among coastal and estuarine habitats, undergoing rapid growth (Dovel and Berggren 1983, Stevenson 1997). These migratory subadults, as well as adult sturgeon, are normally

captured in shallow (10-50m) near shore areas dominated by gravel and sand substrate (Stein et al. 2004a). Coastal features or shorelines where migratory Atlantic sturgeon commonly aggregate include the Bay of Fundy, **Massachusetts Bay** [*bold added by EPA*], Rhode Island, New Jersey, Delaware, Delaware Bay, Chesapeake Bay, and North Carolina, which presumably provide better foraging opportunities (Dovel and Berggren 1983, Johnson et al. 1997, Rochard et al. 1997, Kynard et al. 2000, Eyler et al. 2004, Stein et al. 2004a, Dadswell 2006). Despite extensive mixing in coastal waters, Atlantic sturgeon return to their natal river to spawn as indicated from tagging records (Collins et al. 2000a, K. Hattala, NYSDEC, Pers. Comm. 1998) and the relatively low rates of gene flow reported in population genetic studies (King et al. 2001, Waldman et al. 2002). (Page 4)

Similarly, Stein et al. (2004b) examined bycatch of Atlantic sturgeon using the NMFS sea sampling/observer 1989-2000 database. The bycatch study identified that the majority of recaptures occurred in five distinct coastal locations (**Massachusetts Bay** [*bold added by EPA*], Rhode Island, New Jersey, Delaware, and North Carolina) in isobaths ranging from 10 to 50 m, although sampling was not randomly distributed. Similar results were reported in the Atlantic Coast Sturgeon Tagging Database (USFWS); noting most recaptures occurred off the coast of New Jersey, at the mouth of the Chesapeake Bay, within the Chesapeake Bay, and the eastern portion of the Albemarle Sound, NC (Eyler et al. 2004). (Page 61)

Based on the information included in the Status Review document, subadult and adult Atlantic sturgeon are likely present in Massachusetts Bay. Since sturgeon are generally found in benthic habitat, this would potentially place them in the vicinity of the Marshfield WWTF benthic discharge diffuser. Spawning activity does not take place in this marine, near coastal habitat, so no other lifestages of Atlantic sturgeon would be present in the action area.

Shortnose Sturgeon Information

Shortnose sturgeon generally prefer the near shore marine, estuarine, and riverine habitat of large river systems. As noted for Atlantic sturgeon, shortnose sturgeon are found in benthic habitat. This species, unlike other anadromous species in the region such as shad or salmon, do not appear to make long distance offshore migrations. EPA is aware that the argument could be made that shortnose sturgeon are not expected to be present in the action area of the facility outfall. However, Kynard (1997) reported that some marine emigrants of shortnose sturgeon have been documented in coastal waters. Also, the historical coastal by-catch of sturgeon in Massachusetts Bay was not identified to species with any confidence. Taking this information into consideration, EPA selected a conservative approach and included subadult and adult shortnose sturgeon in this discussion. Spawning activity does not take place in this marine, near coastal habitat, so no other lifestages of shortnose sturgeon would be present in the action area.

Facility Description

The Marshfield WWTF is a 2.1 million gallon per day (mgd) secondary wastewater treatment facility which uses ultraviolet irradiation for disinfection. The facility discharges from a single outfall into the marine environment, using a 240 foot, 12 port diffuser approximately 2,900 feet offshore and one foot off the bottom, into Massachusetts Bay (See Figure 1 of the fact sheet). The collection system is 100 percent separate sanitary sewer and serves a total population of 4,888 (Town of Marshfield, 4,638 and Town of Duxbury, 250).

EPA performed modeling for the outfall diffuser in 1994 and 1995 in support of the re-issuance of the Marshfield NPDES permit. EPA used both CORMIX and PLUMES models. EPA's modeling resulted with dilution factors of approximately 53:1 during average conditions and 44:1 during peak (peak flow, low tide, slack tidal current). The model predicted that this dilution is achieved at a distance of 17 feet (5.2 meters) from the axis of the diffuser and extends for the full length (240 feet). This zone of initial dilution (ZID) is consistent with the recommended sizing of toxic dilution zones contained in EPA's Technical Support Document. It is significantly smaller than the prohibited zone designated by MADMF.

In 2007, the Town of Marshfield hired Applied Science Associates (ASA) to conduct a discharge analysis to (1) review the modeling conducted by EPA to determine the zone of initial dilution (ZID) and the average and critical dilutions for the outfall used in the 2007 NPDES Permit and; (2) to calculate the allowable fecal coliform dilution based on updated modeling. This effort was made in response to the NPDES Permit issued to the Town of Marshfield in 2006 and included much stricter effluent limits on fecal coliform bacteria as required for SA waters designated for shellfishing, and requested by the MA DMF. According to the ASA report, "discussions with MassDEP in April 2007 resulted in an agreement that a mixing zone study would be conducted to assess the ability of the present end-of-pipe fecal coliform concentrations could meet necessary water quality standards through dilutions."

The EPA and ASA model simulations were generally similar, yet the ASA simulation had a higher average dilution and a lower critical dilution. EPA has maintained the estimated dilution as 53:1 during average conditions and 44:1 during peak (peak flow, low tide, slack tidal current) conditions in the water quality-based limit calculations in the Draft Permit. Section 6.1.2.2 of the fact sheet contains a complete discussion of the modeling and resulting dilution factors.

Receiving Water Description

The receiving waters of the Marshfield WWTF discharge is Massachusetts Bay South Coastal Watershed, Segment MA94. Massachusetts Bay is classified in the North Coastal Table as Class SA Shellfishing. Class SA waters are designated as an excellent habitat for fish, other aquatic life and wildlife, including for their reproduction, migrations, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, excellent habitat for fish and 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.

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). Massachusetts Bay has not been included on the Massachusetts Integrated List of Waters requiring a TMDL.

Separate from the MA SWQS classification, marine waters are also classified by the Massachusetts Division of Marine Fisheries (MA DMF) in accordance with the National Shellfish Sanitation Program (NSSP). *The NSSP is a federal/state cooperative program recognized by the U. S. Food and Drug Administration (FDA) and the Interstate Shellfish Sanitation Conference (ISSC) for the sanitary control of shellfish produced and sold for human consumption. The purpose of the NSSP is to promote and improve the sanitation of shellfish (oysters, clams, mussels and scallops) moving in interstate commerce through federal/state cooperation and uniformity of State shellfish programs*³⁰. Under the NSSP, marine waters in Massachusetts are classified in Shellfish Growing Area Maps prepared by MA DMF using the classifications of approved, conditionally approved, restricted, conditionally restricted, and prohibited.

The NSSP requires that growing areas be classified as “prohibited” if they are “adjacent to a sewage treatment plant outfall or other point source outfall with public health significance”³¹. As such, the area immediately adjacent to the Marshfield diffuser, labeled MB2.2 on the Shellfish Growing Area Map, is classified as “prohibited” for shellfishing solely based on the presence of the outfall³² (See Figure 3).

The prohibited zone, MB2.2, was sized and configured by MA DMF according to the following criteria found in the NSSP 2009 Section II, Chapter IV – Shellstock Growing Areas, NSSP, Guide for the Control of Molluscan Shellfish:

5. Wastewater Discharges

b) The determination of the size of the area to be classified as prohibited adjacent to each outfall shall include the following minimum criteria:

1. (i) The volume flow rate, location of discharge, performance of the wastewater treatment plant and the bacteriological or viral quality of the effluent;

³⁰ US FDA, “National Shellfish Sanitation Program”. 5/3/2012. <http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/FederalStatePrograms/NationalShellfishSanitationProgram/default.htm> 7/24/2012.

³¹ National Shellfish Sanitation Program, 2009, Guide for the Control of Molluscan Shellfish: 2009 Revision.

³² MA Division of Marine Fisheries, 2009, “Designated Shellfish Growing Area, Growing Area Code: MB2, Area Name: Marshfield East Coastal, Area Towns: Duxbury, Marshfield, Scituate.

2. (ii) The decay rate of the contaminants of public health significance in the wastewater discharged;
3. (iii) The wastewater's dispersion and dilution, and the time of waste transport to the area where shellstock may be harvested; and
4. (iv) The location of the shellfish resources, classification of adjacent waters and identifiable landmarks or boundaries.

The prohibited area encompasses approximately 0.5 square mile. The area just outside of MB2.2 is classified as “approved”, which means that it is “(a) safe for the direct marketing of shellfish; (b) not subject to contamination from human or fecal matter at levels that, in the judgment of the Authority, presents an actual or potential public health hazard; and (c) not contaminated with: (i) pathogenic organisms; (ii) poisonous or deleterious substances; (iii) marine biotoxins; or (iv) bacteria concentrations exceeding the bacteriological standards for a growing area in this classification.”

Pollutant Discharges Permitted and Potential Effects on Atlantic Sturgeon and Shortnose Sturgeon

The Draft Permit includes water quality based effluent limitations on all pollutants for which the Marshfield WWTF has a reasonable potential to cause, or contributes to, an exceedance of water quality standards in the receiving water. These include effluent limitations on biochemical oxygen demand (BOD₅), total suspended solids (TSS), pH, fecal coliform bacteria and enterococcus bacteria. The derivation of these permit limits and more detailed information concerning these pollutants can be found in Section 6.2 of the fact sheet.

Biochemical Oxygen Demand (BOD₅)

The draft permit proposes the same BOD₅ limits as 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 BOD₅ concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily BOD₅ value each month, but does not establish an effluent limit. The mass-based limitations for BOD₅ are based on a 2.1 mgd design flow. The average monthly mass limit has been reduced from 526 to 525 lbs/day to correct a rounding error. The monitoring frequency continues to be once per week.

EPA has determined that these effluent limits are sufficient to ensure that discharges from this facility do not cause an excursion below the Massachusetts Water Quality Standard, which requires that Class SA waters attain a minimum DO saturation of 6.0 mg/l. While information regarding the impact of DO levels on Atlantic sturgeon specifically are not available, shortnose sturgeon are known to be adversely affected by DO levels below 5 mg/l (Jenkins et al. 1994, Niklitschek 2001). As such, the BOD criteria are protective of Atlantic sturgeon and shortnose sturgeon in Massachusetts Bay.

Total Suspended Solids (TSS)

The draft permit proposes the same TSS limits as 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 TSS concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily TSS value each month, but does not establish an effluent limit. The mass-based limitations for TSS are based on a 2.1 mgd design flow. The average monthly mass limit has been reduced from 526 to 525 lbs/day to correct a rounding error. The monitoring frequency continues to be once per week.

TSS can affect aquatic life directly by killing them or reducing growth rate or resistance to disease, by preventing the successful development of fish eggs and larvae, by modifying natural movements and migration, and by reducing the abundance of available food (EPA 1976). These effects are caused by TSS decreasing light penetration and by burial of the benthos. Eggs and larvae are most vulnerable to increases in solids, but this area is not considered spawning habitat for Atlantic sturgeon.

Studies of the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected (Burton 1993). The studies reviewed by Burton demonstrated lethal effects to fish at concentrations of 580 mg/L to 700,000 mg/L depending on species. Sublethal effects have been observed at substantially lower turbidity levels. For example, prey consumption was significantly lower for striped bass larvae tested at concentrations of 200 and 500 mg/L compared to larvae exposed to 0 and 75 mg/L (Breitburg 1988 in Burton 1993). Studies with striped bass adults showed that pre-spawners did not avoid concentrations of 954 to 1,920 mg/L to reach spawning sites (Summerfelt and Moiser 1976 and Combs 1979 in Burton 1993). While there have been no directed studies on the effects of TSS on Atlantic sturgeon, shortnose sturgeon have been documented in turbid water in the juvenile and adult stage. Dadswell (1984) reports that shortnose sturgeon are more active under lowered light conditions, such as those in turbid waters. As such, sturgeon species are assumed to be at least as tolerant to suspended sediment as other estuarine fish such as striped bass. Based on this information, it is likely that the effluent from this facility will have an insignificant effect on Atlantic sturgeon and shortnose sturgeon.

Eighty-Five Percent (85%) BOD₅ 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 BOD₅ and TSS be not less than 85%. This requirement was included in the previous permit.

This requirement is designed to ensure that water quality impacts from BOD₅ and TSS do not violate water quality standards. This further supports the determination that BOD₅ and TSS levels from this facility will have an insignificant effect on Atlantic sturgeon and shortnose sturgeon.

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 6.0 or greater than 8.5 standard units at any time. The monitoring frequency is daily.

A pH of 6.0 – 9.0 is harmless to most marine organisms (Ausperger 2004) . As such, no adverse effects to Atlantic sturgeon or shortnose sturgeon are likely to occur as a result of the discharge of this pH into Massachusetts Bay.

Bacteria

The MA SWQS include criteria for two bacterial indicators for Class SA waters. Fecal coliform bacteria are applicable in water designated for shellfishing and enterococci criteria have been established to protect recreational uses. Criteria for enterococci were first promulgated for Massachusetts coastal waters by EPA on November 16, 2004 (see 40 CFR 131.41). Massachusetts subsequently adopted enterococci criteria for marine waters into its water quality standards that were approved by EPA on September 19, 2007. Both indicator bacteria criteria are applicable to this discharge.

Fecal Coliform

The 2006 final permit included fecal limits of 14 per 100/ml and 28 per 100/ml based on the MassDEP SWQS that require that SA waters designated for shellfishing not exceed a fecal coliform median or geometric mean MPN of 14 per 100 mg/l nor shall more than 10% of the samples exceed a MPN of 28 per 100 ml. The limits in the draft permit are the same as those in the existing permit.

The draft permit includes a monthly geometric mean limit of 14 colony forming units (cfu) per 100 ml, and maximum daily limit of 28 cfu/100 ml, with no mixing zone allowed for attaining the bacteria criteria.

Fecal bacteria are not known to be toxic to aquatic life and are expected to have no direct effect on Atlantic sturgeon or shortnose sturgeon.

Enterococci

The water quality criteria for Class SA bathing beach waters require that no single sample shall exceed 104 colonies per 100 ml, and that the geometric mean of the five most recent samples taken within the same bathing season shall not exceed 35 enterococci colonies per 100 ml and during the non-bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml.

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.

As stated earlier, fecal bacteria are not known to be toxic to aquatic life and are expected to have no direct effect on Atlantic sturgeon or shortnose sturgeon.

Finding

Based on the analysis of potential impacts to Atlantic sturgeon and shortnose sturgeon presented in this attachment, EPA has determined that impacts to Atlantic sturgeon and shortnose sturgeon from the Marshfield WWTF discharge, if any, will be insignificant or discountable. Therefore, EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. EPA is seeking concurrence from NMFS regarding this determination through the information in this attachment, as well as supporting information contained in the fact sheet and the draft permit. In addition, a letter under separate cover will be sent to NMFS from EPA to request concurrence.

Reinitiation of consultation will take place: (a) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the consultation; (b) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the consultation; or (c) if a new species is listed or critical habitat is designated that may be affected by the identified action.

**EPA AND MASSDEP JOINT RESPONSE TO PUBLIC COMMENTS
MARSHFIELD WASTEWATER TREATMENT FACILITY
NPDES PERMIT NO. MA0101737**

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's response to comments received on the draft National Pollutant Discharge Elimination System ("NPDES") Permit #MA0101737. The response to comments explains and supports EPA's determinations that form the basis of the final permit. From February 13, 2014 to March 14, 2014, the United States Environmental Protection Agency ("EPA" or the "Region") and the Massachusetts Department of Environmental Protection ("MassDEP") (together, the "Agencies") solicited public comment on a draft NPDES Permit #MA0101737, developed pursuant to an application from the Town of Marshfield ("Permittee"), for the reissuance of an NPDES permit to discharge treated wastewater from outfall number 001 to Massachusetts Bay.

The Region and MassDEP re-opened the public comment period to remedy an error in which the Town of Duxbury was not listed as a co-permittee in the original public notice. The revised public notice was published on June 3, 2014 in the *Patriot Ledger* and listed the Town of Duxbury as a co-permittee. The re-opened public comment period ran from June 3, 2014 to July 2, 2014. EPA received no additional comments during the re-opened public comment period.

The permittee owns, operates and maintains, among other things, interceptor sewer lines, pumping stations, a treatment plant in Marshfield, Massachusetts and the ocean outfall pipe from the treatment plant. The Marshfield Wastewater Treatment Facility ("WWTF") also receives flows from the satellite sewage collection system of Duxbury. The Town of Duxbury owns, operates and maintains its own collection system that diverts wastewater to the Marshfield WWTF. The Marshfield WWTF discharges via a multiport diffuser into Massachusetts Bay.

Based on additional information gathered by the Region and MassDEP, EPA has removed the Town of Duxbury as a co-permittee in the Marshfield permit. Flows from the town of Duxbury began being treated at the Marshfield WWTF about 1980 indicating that the system is relatively young. The collection system serves a minimal area, serving only 195 homes along Duxbury Beach; and some of these homes are seasonal residences. MassDEP does not have any reports of SSOs or any other problems in the Duxbury collection system. Marshfield confirms that they have not had any problems with excessive flows from Duxbury. If problems are identified in the future, the Town of Duxbury may be included as a co-permittee in a future permit.

Several address changes have occurred since the close of the public notice and the issuance of the final permit, NetDMR opt-out notices are to be sent to MassDEP's Boston office (see page 14 of the final permit); and MassDEP's Worcester office has moved and an updated address is included on page 15 of the final permit.

The table of contents below lists each party's comments on the draft permit (essentially reproduced verbatim) and the page on which its comments begin. Each comment is followed by the Agencies' response.

A) Thomas J. Reynolds, Superintendent, Marshfield Department of Public Works for the Marshfield Board of Public Works.....	3
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After a review of the comments received on the draft permit, EPA and MassDEP have made a final decision to issue this permit authorizing the discharge.

EPA's decision-making process has benefitted from the comments and additional information; the information and arguments presented did not raise any substantial new questions concerning the permit. EPA did, however, make changes in response to comments and additional information. The analyses underlying these changes is explained in the responses to individual comments that follow and is reflected in the final permit.

A copy of the final permit may be obtained by writing or calling Michele Cobban Barden, United States Environmental Protection Agency, 5 Post Office Square – Suite 100, OEP06-1, Boston, Massachusetts, 02109-3912; Telephone (617) 918-1539.

A. Comments submitted by Thomas J. Reynolds, Superintendent, Marshfield Department of Public Works for the Marshfield Board of Public Works, dated March 13, 2014.

Comment A.1: “This is to inform you that the Town of Marshfield will be seeking a modification of its new NPDES permit regarding the Enterococci limits, a re-evaluation of the Fecal Coliform limits and other conditions as described in the following narrative. The Town reserves its rights to contest any of the permit conditions at a future time based on evidence, data or studies.”

Response A.1: EPA has responded to each of the specifically addressed issues below. With regard to the Town’s assertion of its right to contest any of the permit conditions at a future time, EPA directs the town to EPA’s regulations at 40 C.F.R. §124.13 regarding the obligation to raise issues and provide information during the public comment period, and 40 C.F.R. § 124.19 regarding the NPDES appeals process, including the timeframe for timely contesting permit conditions. The Town may in the future choose to pursue a permit modification based upon, among other things, new information not available at the time of permit issuance if in accordance with regulations at 40 C.F.R. §122.62.

Comment A.2: “**Insufficient Time to Review Draft Permit.** The Town received the draft permit from EPA in February 2014, about 31 months after the reapplication package was submitted in July 2011. Response with supporting arguments are due March 14, 2014. One month is insufficient to fully evaluate the compliance and cost implication of a permit with significant new requirements.”

Response A.2: EPA regulations at 40 C.F.R. § 124.10(b)(1) state that “Public notice of the preparation of a draft permit required under paragraph (a) of this section shall allow at least 30 days for public comment. The public notice for the draft Marshfield NPDES permit ran from February 13, 2014 through March 14, 2014, a thirty-day (30) period.

As stated in the Fact Sheet, the previous permit was signed on November 9, 2006, and became effective on February 1, 2007. That permit expired 5 years later on January 31, 2012. However, EPA’s regulations state, “[w]hen EPA is the permit-issuing authority, the conditions of an expired permit continue in force under 5 U.S.C. 558(c) until the effective date of the new permit ...” according to 40 C.F.R. §122.6(a). Therefore, the original permit remained and still remains in force until the final Permit becomes effective.

On February 10, 2014, EPA notified the Town that the public notice period for the draft permit had been scheduled for February 13 through March 14, 2014¹ and that the public notice package had been sent to the Town.

¹ Email from Michele Barden, EPA to Kevin E. Silva and Paul Tomkavage, Town of Duxbury, “Marshfield WWTF,” dated February 10, 2014

Additionally, on March 10, 2014, Michele Barden of EPA spoke by phone with Paul Tomkavage, Project Manager for the Town of Duxbury about the deadline for public comment. EPA informed the Town that if they needed additional time to comment on the draft permit that they may submit a written request for an extension of the public comment period. EPA did not receive any requests for an extension.

Furthermore, the Town has not identified any specific reason why the comment period should be extended other than a generic reference to “the compliance and cost implication of a permit with significant new requirements.” EPA does not believe that the amount of time taken by EPA to prepare the draft permit, which was impacted by competing priorities and limited administrative resources, is relevant to the question of whether the thirty-day period in this case was sufficiently long enough to provide the Town with an adequate opportunity to comment. In EPA’s experience, municipalities are able to marshal comment on permit requirements within thirty days.

Moreover, to the extent the Town’s additional comments pertained to water quality-based effluent limitations, cost or compliance considerations would not be material to EPA’s establishment of such conditions. The Town was free to submit supplemental information to EPA after the close of the public comment period, although such materials would not constitute timely comment. Still, the information could be placed in the permit record for EPA’s consideration. The Town brought no such information to the attention of EPA. However, EPA has included a compliance schedule for enterococcus in the final permit.

Finally, EPA provided Marshfield with an additional opportunity to evaluate the permit and its implications; on June 3, 2014 EPA re-opened the public comment period for 30 days and received no additional comments from any party.

Comment A.3: “Enterococcus Compliance means additional time, and additional unplanned spending. EPA has acknowledged we will not meet the proposed new standard, based on the last several years of monitoring. Yet we understand the new standard applies on the effective date of the permit. The Town will need time, and funding, to study this, and to design and construct the necessary improvements. The capital upgrades could easily reach \$3 million, getting local approval is not guaranteed. There will be additional monitoring costs, and operating and maintenance costs associated with the new equipment. Additional detail is provided later.”

Response A.3: The Massachusetts Surface Water Quality Standards (“MA SWQS”) were revised in 2007 to include Enterococcus standards. The current permit required the permittee to report enterococcus concentrations in preparation for the inclusion of this requirement in the next permit re-issuance.

EPA recognizes that compliance with this effluent limit may require the permittee to improve the disinfection system and will provide the permittee with a compliance schedule with deadlines as proposed by the permittee (Please see Response A.7 for further details).

Comment A.4: “Additional/New Monitoring Costs. The frequency of Enterococcus monitoring has been increased thirteen-fold. New monitoring requirements have been presented for Dissolved Oxygen, the Nitrogen Series and seven new items (Hardness et al.) associated with Whole Effluent Toxicity. The additional monitoring and testing frequencies will put an increased demand on the laboratory but more importantly will necessitate additional equipment and/or outside laboratory services. Explanations and details follow.”

Response A.4: EPA has responded to each of the specific comments found below in detail. Please see Responses A.7, A.9, A.10, A.11 and A.12.

Comment A.5: “Operation and Maintenance of the Sewer System. The new collection system requirements alone may impact staff size, capital programming and our rate structure. Further explanation is provided.”

Response A.5: Please see Response A.13.

SPECIFIC CONCERNS AND REQUESTS

Comment A.6: “pH has remained the same at 6.0-8.5. However the detailed language changed. Part I.A.1.b. now reads “The pH of the effluent shall not be less than 6.0 or greater than 8.5 at any time.” Prior permits, including the most recent state “The pH of the effluent shall not be less than 6.0 or greater than 8.5 at any time, unless these values are exceeded as the result of an approved treatment process or natural causes.”

Page 13 of 30 of the Fact Sheet, Sec 6.2.2.4 notes one pH violation in 37 months of reported data with a reported minimum of 3.6 in May 2011. Ensuring against any pH excursions could mean a pH adjustment process. **The Town requests re-instatement of the above underlined language.”**

Response A.6: As stated in the Fact Sheet, the MA SWQS for pH in Class SA waters states; “pH. Shall be in the range of 6.5 through 8.5 standard units and not more than 0.2 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class.” The language in the previous permit, “...unless these values are exceeded as the result of an approved treatment process or natural causes.” was not included in the MA SWQS see 314 CMR 4.05(4)(a)3. EPA has included the current language in order to assure compliance with the current MA SWQS.

The pH limits in the current permit and the draft permit allow for pH in a range of 6.0-8.5 standard units, as previously requested by the permittee, which is outside the range in the MA SWQS for Class SA waters. As noted in the Fact Sheet, this range was found to be “acceptable and would result in the achievement of water quality standards outside the initial mixing zone due to the large dilution available and the buffering capacity of ocean water.”

Comment A.7: The last permit added monthly monitoring for enterococcus. The draft permit includes monitoring for this 3x/week (a thirteen-fold increase) and includes limits of 35 cfu/100

ml monthly average and a 276 cfu/100 ml daily maximum. The Town wishes to contest this dramatic increase in sampling frequency and the implementation of the effluent limit. Per the table in A.1., Page 2 of 15 of the permit, the new limits are to be met on the effective date of the permit, along with the other effluent limits. As previously mentioned, EPA has noted the facility will not meet the enterococcus limit, based on the data submitted during the monitoring period.

Implementation requires a three-fold effort: study, design and construction. An item for an NPDES compliance study is to appear on the Warrant for Annual Town Meeting, April 28, 2014: if approved by the voters, the study funding will become available on July 1, 2014. Funding for design of disinfection improvements has been approved; however, vendors of the UV disinfection will likely require, for their performance guarantees, a clearer secondary clarifier effluent than we are required to produce by NPDES permit. This would likely mean adding filtration upstream of improved disinfection. Funding has to be obtained for the study, probably for additional design and unquestionably for the construction. The full reach of this has not appeared on our 5-year capital projection beginning July 2014. Borrowing needs are vetted by the Town's Capital Budget Committee, and weighed against other department's borrowing needs and the Town's overall borrowing ceiling. Approval of necessary funding is not assured.

The Town requests a 36-month delay in implementation in order to meet the new enterococcus standard. A potential schedule follows:

- Study: July – December 2014
- Design: January – Jul 2015 (assumes design funding adequate)
- Additional Design and Construction Funding: April 2015 STM/ATM
- Construction: September 2015 – December 2016
- Startup: February 2017

Response A.7: Although the permittee views the inclusion effluent limits for both enterococcus and fecal coliform bacteria as a significant increase in monitoring frequency, EPA emphasizes that the inclusion of both parameters is required by revisions in the MA SWQS.

The MA SWQS at 314 CMR 4.05(4) 4.a. establishes criteria for waters designated for shellfishing using fecal coliform bacteria as “not exceeding a geometric mean Most Probably Number (MPN) of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 28 per 100 ml, or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the *Guide For The Control of Molluscan Shellfish...*” This criteria was adopted into the permit by the establishment of effluent limits for fecal coliform of 14 cfu/100 ml as an average monthly and 28 cfu/100 ml as a maximum daily.

The MA SWQS at 314 CMR 4.05(4) 4.b. establishes criteria for waters designated as bathing beaches using enterococcus as the indicator bacteria. As stated in the Fact Sheet, this criteria requires that no single sample shall exceed 104 colonies per 100 ml, and that the geometric mean of the five most recent samples taken within the same bathing season shall not exceed 35

colonies per 100 ml and during the non-bathing season, no single enterococci sample shall exceed 104 colonies per 100 ml and the geometric mean of all samples taken during the most recent six months typically based on a minimum of five samples shall not exceed 35 enterococci colonies per 100 ml. 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. This criteria was adopted into the permit by the establishment of the effluent limits for enterococcus of 35 cfu/100 ml as an average monthly and 276 cfu/100 ml as a maximum daily.

EPA believes that the inclusion of the enterococcus limits in this permit should have been anticipated by the Permittee given the discussion in the past fact sheet, the recent regulatory history and the inclusion of this requirement in other coastal NPDES permits in Massachusetts. As stated in the Fact Sheet, which accompanied the permit issued in November 2006, "EPA...established a monthly monitoring requirement for Enterococci to gather information for determining whether the discharge has the reasonable potential to cause or contribute to exceedances of recently promulgated federal water quality criteria established to protect primary contact recreation uses (see 40 C.F.R. part 131 dated November 16, 2004)". EPA also noted in the 2006 Fact Sheet that it would review the results, and if necessary, [would] reopen the permit and impose a limit.

The use of enterococci as the indicator organism for marine beaches was initially established by the federal Beaches Environmental Assessment and Coastal Act of 2000 (BEACH Act), an amendment to the CWA. As discussed in the current Fact Sheet, which accompanied the draft permit, criteria for enterococci were first promulgated for Massachusetts' coastal waters in 2004 (See 40 C.F.R. 131.41). In 2006, MassDEP subsequently revised the bacteria criteria for coastal waters from a fecal coliform-based standard to an enterococci-based standard. EPA approved the current MA SWQS for Class SA waters on September 19, 2007.

Based on a review of the enterococcus data collected during the term of the existing permit, EPA has determined that the discharge does have reasonable potential to cause or contribute to an exceedance of federal criteria and subsequently promulgated Massachusetts SWQS (see 314 CMR 4.05 (4)(a)(4)) and therefore, effluent limits for enterococcus are required.

The frequency of monitoring for enterococci bacteria in this permit is the same as the frequency for fecal coliform bacteria in the previous permit (2006). This is logical since enterococci replaced fecal coliform as the indicator bacteria in the MA SWQS for protecting recreational use and therefore the monitoring frequency should be the same.

Since the enterococcus limits are new and EPA recognizes that compliance with these limits will require the Permittee to upgrade the current disinfection system, EPA has agreed to the compliance schedule outline proposed by the permittee and has included the compliance schedule with revised deadlines to reflect the time that has elapsed between the end of the comment period and the issuance of the final permit and required submittals through start-up (See pages 12-13 of the final permit).

1. From the effective date of the permit until such time as the necessary facility improvements to achieve compliance with the enterococcus permit limits have been constructed and started-up, the Permittee shall sample and report enterococcus according to the schedule and frequency of sampling in Part A.1. of the final permit.
2. From January 2015 through May 2015, the Permittee shall study the appropriate means to achieve compliance with the enterococcus limits and shall submit to EPA and MassDEP, on or before June 30, 2015, a status report relative to the planning of the facilities necessary to achieve the enterococcus permit limits.
3. From June 2015 through February 2016, the Permittee shall complete design of the facility improvements required to achieve the enterococcus permit limits.
4. The Permittee shall have until October 30, 2016 to finalize any additional design elements necessary and to secure any construction funding not already appropriated. The Permittee shall submit a status report to EPA and to MassDEP on or before November 30, 2016 summarizing activities since the previous status report.
5. On or before July 30, 2017, the Permittee shall complete construction of the necessary facility improvements to achieve compliance with the enterococcus permit limits.
6. On or before September 30, 2017, the Permittee shall start-up the necessary facility improvements and achieve compliance with the enterococcus permit limits.
7. The permittee shall notify EPA and MassDEP of its compliance or noncompliance with the requirements of this part in writing no later than 14 days after each interim or final date of compliance.

In addition to the new enterococcus limits, the permit maintains the effluent limitations for fecal coliform as required by the MA SWQS to protect shellfishing uses (See 314 CMR 4.05 (4)(a)(4)). The monitoring frequency for fecal coliform bacteria remains three times per week; the same in the previous permit.

Comment A.8: We have attached the 2007 mixing zone study, and questions and answers, in a timely fashion and request that it be reviewed and its conclusion factored into the proposed permit limits. Last permit cycle the Town appealed the 14/28 limitation. On Page 13 or 30 of the Fact Sheet, it is noted that the Environmental Appeals Board denied review on March 27, 2007 on the basis the appeal was not timely. Subsequently, in April 2007 the Town met with MADEP in which an agreement was reached to conduct a mixing zone study to assess if water quality standards could be met through dilution. We engaged the firm of Applied Science Associates (ASA) and submitted a report to EPA and MADEP in August of 2007, with answer to questions provided in September 2007. The study showed that FC concentrations at the edge of the mixing zone would be in the low single digits to below 1 cfu/100 ml. This was conservative in that FC die-off was not considered (see questions and answers) and hence even these low numbers represent a likely over-prediction.

Aspects of the April 2007 meeting and the report are described in the attached 11/16/2007 letter to EPA and MADEP, in which the Town stated it would seek a modification of the NPDES permit regarding the fecal coliform limits.

The Town never received a reaction from MADEP or EPA to the study. It is obvious elements of the study were reviewed, since they appear in the Fact Sheet discussion under **6.1.2.2 Available Dilution**. However, in Section **6.2.2.5.1 Fecal Coliform**, EPA cites formalization of the 14/28 fecal coliform bacteria standard, irrelevance of the Administrative Closure Zone, non-allowance of mixing zones for bacteria and anti-backsliding as reasons for not allowing mixing zones. This ignores the good-faith effort, and expense, undertaken by the Town in 2007 to conduct the mixing zone study with which DEP agreed.

The Town remains concerned about our ability to consistently meet the Fecal Coliform requirement. We have remained in compliance, which has been acknowledged by EPA in Fact Sheet, pages 13-16 of 30.

Response A.8: EPA did review the ASA report as noted by the Permittee and discussed in *Section 6.1.2.1 Available Dilution* of the Fact Sheet. The study is a dilution study that was extended to consider dilution when establishing fecal coliform bacteria limits. For the reasons discussed below, EPA does not establish mixing zones for bacteria in NPDES permits issued in Massachusetts.

As defined in the *Technical Support Document for Water Quality-based Toxics Control* (USEPA, 1991), the “TSD”, a mixing zone is “an area where an effluent discharge undergoes initial dilution and is extended to cover the secondary mixing in the ambient waterbody. A mixing zone is an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented.” The TSD recommends that allowable mixing zone characteristics should be established to ensure that:

- Mixing zones do not impair the integrity to the waterbody as a whole.
- There is no lethality to organisms passing through the mixing zone.
- There are no significant health risks, considering likely pathways of exposure.

Effluent limitations established based on a mixing zone will increase the mass loading of the pollutant to the water body and decrease treatment requirements compared to limitations not based on mixing zones. Mixing zones adversely impact immobile species, such as benthic communities, in the immediate vicinity of the outfall. Because of these and other factors, mixing zones must be applied carefully, so as not to impede progress toward the Clean Water Act goals of maintaining and improving water quality. *See Water Quality Standards Handbook: Second Edition* at 5-2; *Technical Support Document for Water Quality-based Toxics Control* (USEPA, 1991a) at 69-72.

Further support for exercising caution when allowing mixing zones for bacteria is found in a November 12, 2008 memo prepared by EPA's Office of Science and Technology regarding initial zones of dilution for bacteria in rivers and streams designated for primary contact recreation that concludes that "...we cannot envision a circumstance where discharges that elevate bacteria levels beyond criteria can be viewed as protective of primary contact recreation use in fresh flowing waters like rivers and streams.² While this analysis is specifically evaluating mixing zones in fresh water, the principles on which it is based – that people recreating in or downstream from a zone of initial dilution may be exposed to greater risk of the acute endpoint of gastrointestinal illness – is also applicable to marine waters. Given that this receiving water is also designated for shellfishing, and that consumers of shellfish with elevated bacteria would also be subject to increased risk of illness, the risk in marine waters designated for both contact recreation and shellfishing would be more elevated than for fresh waters.

The permittee suggests that compliance with bacterial criteria be determined at the edge of the zone of initial dilution. EPA first notes that bacteria limits in NPDES permits issued in Massachusetts have historically been established equal to the water quality criteria, with no allowance for dilution. Particularly in light of the existing and designated recreational and aquatic life uses in the receiving waters, and the human health concerns associated with excursions of bacteria criteria, EPA believes it is appropriate to follow this conservative approach.

The MA SWQS at 314 CMR 4.03(2), Mixing Zones, allow the recognition of a limited area or volume of a waterbody as a mixing zone, and that waters within the mixing zone may fail to meet specific water quality criteria. However, among the conditions that must be met before a mixing zone may be established is that the mixing zone may not "interfere with the existing or designated uses of surface waters." Because bacterial counts in excess of the applicable water quality criteria would interfere with attainment of primary and secondary contact recreation and shellfishing criteria within the mixing zone, EPA and MassDEP have historically not allowed mixing zones for bacteria and have instead incorporated the water quality criteria as end-of-pipe limits.

MassDEP's "Implementation Policy for Mixing Zones" (January 8, 1993) further supports this practice. Part III (a) of this policy states that "The most important site-specific factors governing the application of mixing zones are the actual and projected uses in a segment. Certain uses may be deemed critical in that no excursions from criteria are desirable. These include areas that are highly sensitive or extensively used. In order to provide a reasonable margin of safety for these areas, no mixing zone can be permitted." The critical uses identified in Part III(a) include shellfish harvesting areas (Class SA and SB) and public bathing beaches and other heavily used recreational waters. The specific language in Part III(a) regarding mixing zones in shellfish harvest waters (Class SA and SB) shall not be authorized unless it is affirmatively demonstrated

² Ephraim S. King, Director, Office of Science and Technology, U.S. EPA Memo to Walter Spratlin, Director, Water, Wetlands and Pesticides, U.S. EPA, RE: Initial Zones of Dilution for Bacteria in Rivers and Streams Designated for Primary Contact Recreation, November 12, 2008, p 2.

that the mixing zone does not encompass important shellfish harvest areas and will not adversely diminish the established population of shellfish in the segment.

In light of the foregoing, the EPA has determined that a margin of safety is reasonable in this case and no mixing zone for attaining the bacteria criteria should be allowed.

Regarding the suggestion that the bacteria criteria should be applied at the edge of a closure zone established by the Massachusetts Division of Marine Fisheries (*Marine Fisheries*), this is clearly not allowed under the MA SWQS, which do not establish any link between its water quality criteria for protecting waters designated for shellfishing and administrative closure zones established by *Marine Fisheries*. Simply put, water quality in Massachusetts Bay must support its designated use of shellfishing even if *Marine Fisheries* determines that the use should not be exercised within portions of that waterbody. See January 12, 2007 letter from EPA to MassDEP, RE: Review and Action on Water Quality Standards, September 19, 2007, at 4.

Comment A.9: The Town requests removal of the new DO monitoring requirement as any measurement taken within the WWTF would not be representative of the actual DO at point of discharge. The permit requires monitoring 5/week. The WWTF effluent discharge travels through a 3,000 ft. long outfall pipe before its discharge through a series of diffusers an additional 240 ft. offshore. There is no means to measure or monitor WWTF effluent DO at the point it is released.

Response A.9: As discussed in the Fact Sheet, effluent data submitted by the permittee in the 2011 permit application showed that there was reasonable potential for the discharge to cause or contribute to an exceedance of the water quality criteria for dissolved oxygen.

As detailed in the Fact Sheet, EPA worked with WWTF staff during the preparation of the draft permit to identify a sampling location to gather additional dissolved oxygen data that were representative of the dissolved oxygen levels in the effluent. Samples collected in the wet well, downstream of the drop from the ultraviolet (UV) contact chamber, are in excess of the minimum DO criteria of 6.0 mg/l with one exception (4/10/13 1100 hrs). The monitoring requirement has been established to provide data to ensure that DO levels in the effluent do not cause or contribute to an exceedance of the water quality criteria. If the permittee would like to establish a sampling location that it finds to be more representative of the effluent at the point of discharge, the permittee should notify EPA and MassDEP in writing. Sampling location changes should not be made without written concurrence from EPA and MassDEP.

Comment A.10: Ammonia-Nitrogen, Total Kjeldahl Nitrogen, Total Nitrate, Total Nitrite – These are all new to the WWTF permit. **The Town wishes to contest the addition of these parameters and requests omission from the permit.** The additional parameters represent additional laboratory costs and man-hours. More importantly, the Town's WWTF has an ocean outfall with both a large diffuser area and a large dilution factor, which will nullify the impact of nutrients in the discharge. **As with the other parameters contained herein, the Town requests reasonable additional time beyond the comment period to gather and present information.**

Response A.10: EPA disagrees; the *National Estuarine Eutrophication Assessment Update* identifies Massachusetts Bay as experiencing a moderate level of eutrophication. The Ammonia-Nitrogen, Total Kjeldahl Nitrogen, Total Nitrate and Total Nitrite requirements are monitoring only requirements that are required and supported by the findings of *Assessment Update*. EPA believes that the once per month monitoring of these parameters is minimal but necessary given the ongoing concerns with the occurrence of annual nuisance toxic blooms that cause shellfish bed closures in Massachusetts Bay. This data will allow EPA to evaluate if the discharge from the Marshfield WWTF may be causing or contributing to a documented eutrophication concern. The *Assessment Update* notes that “any level nitrogen input” is an influencing factor for eutrophication in Massachusetts Bay³.

Also, as noted in Comment A.2, the permittee has had several opportunities and sufficient time to comment on the draft permit. EPA coordinated with the permittee during the development of the permit and further communication with EPA’s enforcement office can be arranged if there are concerns with the schedules needed to comply with the permit.

Comment A.11: The last permit and draft permit include caveats (see footnote 7 on pages 4 & 5 of 15 of the draft permit) that allow the permittee to request a reduction in the WET testing requirements after submitting two years and a minimum of four consecutive sets of WET test results which demonstrate compliance. The Plant has consistently met requirements since the commencement of toxicity testing and has also done so in the greater than two-year period between submitting the application for renewal in July of 2011 and receiving the draft permit in February of 2014. **The Town is requesting the applicable reduction during the public comment period to avoid the process after the fact and to memorialize the reduction in the final permit.**

Response: A.11: As noted by the permittee, the existing permit included a process by which the permittee could request a reduction in the frequency of WET Testing if after two years of submitting and a minimum of four consecutive sets of WET test results demonstrated compliance. This language is standard language that is included in many NPDES permit in Massachusetts. However, it should not have been included in the draft permit since the WET requirements for Marshfield WWTF are already at a minimum: two times per year for one species and only an acute limit. The inclusion of this language was an oversight by EPA and EPA as removed the language in question from the final permit. (See page 5 of the final permit)

MassDEP’s Implementation Policy for the Control of Toxic Pollutants in Surface Waters⁴ recommends a minimal frequency of four samples per year for two species and an acute endpoint for discharges with a dilution between 20 and 100. EPA and MassDEP have allowed frequency reductions less than these guidelines in recognition of a history of compliance. A reduction of

³ Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner. 2007. Effects of Nutrient Enrichment in the Nation’s Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Silver Spring, MD. p. A19.

⁴ MassDEP, 1990, Massachusetts Implementation Policy for the Control of Toxic Pollutants in Surface Waters, Table II, p.9.

less than two tests per year would not provide the data necessary to assess the toxicity of the discharge; and therefore, EPA has maintained that frequency in the final permit. It is also noted that the permittee is only required to test a single species, Mysid shrimp. EPA has removed the frequency reduction language from the final permit.

Comment A.12: This footnote is new to the permit. It requires Hardness, Ammonia Nitrogen as N, Total Recoverable Cadmium, Total Recoverable Copper, Total Recoverable Zinc, Total Recoverable Nickel to be tested 2x/year at the same frequency and concurrent with WET testing. **The Town requests a reduction of frequency in conjunction with the reduction request in WET testing as they are connected.**

Response A.12: This footnote maybe new to the permit but the chemical analysis has been required under Part VI, Chemical Analysis, of the Marine Acute Toxicity Test Procedure and Protocol. Since this chemical analysis has been required as part of the standard WET testing, it shall continue to be required in the permit, on a semi-annual basis. The footnote was included simply to highlight the requirement that is occasionally missed by permittees since it is found in an attachment to the permit. As stated in the response to Comment A.11, the frequency for WET testing remains two times per year.

Comment A.13: SECTION C – OPERATION AND MAINTENANCE OF THE SEWER SYSTEM (pages 7-10 in the Draft NPDES Permit)

This section has changed substantially and will need more in depth review to assess additional costs and impacts. It adds additional or new requirements regarding O&M, planning, implementation and mapping. These requirements include timetables for submission and compliance. There are additional reporting requirements.

There are sections relative to creating a fairly comprehensive collection system operations and maintenance plan and submitting/implementing different portions at different time deadlines: Collection System O&M Plan “roadmap” in 6 months, full Plan in 24 months and Collection System Map in 30 months. The collection system requirements alone may impact staff size, capital programming and our rate structure.

Response A.13: The Operation and Maintenance requirements included in the draft permit are consistent with language included in re-issued POTW NPDES permits in Massachusetts.

Federal regulations require each NPDES permittee to “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 comply with permit limits (40 C.F.R. § 122.41 (e)) (Conditions applicable to all permits; Proper operation and maintenance).

EPA regulations also specify a standard condition to be included in all NPDES permit that specifically imposes on permittees a “duty to mitigate.” *See* 40 CFR § 122.41 (d). This condition is specified in Part II.B.3 of the permit and requires permittees to take all reasonable steps – which in some cases may include operation and maintenance work – to minimize or prevent any

discharge in violation of the permit which has the reasonable likelihood of adversely affecting human health or the environment.

Proper operation of collection systems is critical to prevent blockages and equipment failures that would cause overflows of the collection system (sanitary sewer overflows, or SSOs), and to limit the amount of non-wastewater flow entering the collection system (inflow and infiltration or I/I). I/I in a collection system can pose a significant environmental problem because it may displace wastewater flow and thereby cause, or contribute to causing, SSOs. Moreover, I/I could reduce the capacity and efficiency of the treatment plant and cause bypasses of secondary treatment. Therefore, reducing I/I will help to minimize any SSOs and maximize the flow receiving proper treatment at the treatment plant.

The Region's decision to condition the permit for the discharge in this manner falls within its authority under the Act and implementing regulations. *See* CWA §§ 402(a)(2) ("The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate."); 301(b)(1)(C) (requiring "any more stringent limitation, including those necessary to meet water quality standards ...or required to implement any applicable water quality standard established pursuant to this Act"); 40 C.F.R. §§ 122.4(a) (no permit may be issued, "When the conditions of the permit do not provide for compliance with the applicable requirements of the CWA, or regulations promulgated under CWA"); 122.43 ("In addition to conditions required in all permits (122.41 and 122.42), the Director shall establish conditions, as required on a case by case basis, to provide for and assure compliance with all applicable requirements of the CWA and regulations."); 122.44(d)(5) (requiring inclusion of "any more stringent limitations...in accordance with section 301(b)(1)(C) of the Act.)

The permit outlines the minimum requirements for an I/I Control Plan and provides guidance for prioritizing sources. The plan must be adequate to prevent overflows from the collection system owned and operated by the permittee and also adequate to prevent flow-related violations at the POTW Treatment Plant. EPA recommends that the permittees also consult the MassDEP guidance document, Guidelines for Performing Infiltration/Inflow Analyses and Sewer System Evaluation Survey, January 1993, which can be found at <http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/iiguidln.pdf>; the New England Interstate Water Pollution Control Commission publication, Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems, December 2003, which can be found at <http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/omrguide.pdf> and the EPA document, Guide for Evaluating Capacity, Management, Operation and Maintenance (CMOM) Programs at Sanitary Sewer Collection Systems, which can be found at http://www.epa.gov/npdes/pubs/cmom_guide_for_collection_systems.pdf. The Agencies believe that this flexible approach is reasonable, because it will allow the permittee to adapt based on local conditions and because the permittee is better positioned to determine how to deploy resources to address I/I problems efficiently based on their knowledge of collection systems.

Again, as noted in Comment A.2, the permittee has had several opportunities and sufficient time to comment on the draft permit. EPA coordinated with the permittee during the development of the permit and further communication with EPA's enforcement office can be arranged if there are concerns with the schedules needed to comply with the permit.

Comment A.14: There is also a requirement to begin electronic filing within one year. This, along with the changes and additions in testing parameters, database changes and report form formatting, will necessitate engaging our SCADA services tech as our lab database and maintenance software are connected to SCADA to exchange data.

Response A.14: The draft permit includes a specific "opt-out" request process for "[p]ermittees who believe they cannot use NetDMR due to technical or administrative infeasibilities or other logical reasons..." The NetDMR requirement remains a part of the permit. If the permittee is unable to comply with this requirement within 1-year of the permit issuance, the permittee should "submit the justification, in writing, to EPA at least sixty (60) days prior to the date the permittee would otherwise be required to begin using NetDMR."

Comment A.15: In summary, the new NPDES Permit's requirements may significantly impact the Town's rate structure, operating costs and capital needs, the extent of which cannot be estimated in the one-month comment period. We request a meeting with EPA and DEP to discuss these issues.

Response A.15: As noted in Comment A.2, the permittee has had several opportunities and sufficient time to comment on the draft permit. EPA coordinated with the permittee during the development of the permit and further communication with EPA's enforcement office can be arranged if there are concerns with the schedules needed to comply with the permit.

B. Comments submitted by Peter Mackin, Water and Sewer Superintendent, Town of Duxbury, Water Department, dated March 14, 2014.

Comment B.1: The Town of Duxbury ("Duxbury") hereby submits comments on the co-permittee provisions of the above referenced draft joint NPDES and MassDEP permit. This draft permit authorizes the Town of Marshfield Department of Public Works to discharge from the Marshfield Wastewater Treatment Facility. It also states:

The Town of Duxbury is a co-permittee for Part I.B. Unauthorized discharges and Part I.C. Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the portion of the collection system owned and operated by the Town. The Town is also responsible for the requirements found in Part I.F. State Permit Conditions.

Duxbury objects to being named a "co-permittee," for a number of reasons.

First, the public notice of this permit did not name Duxbury as a co-permittee or even refer to Duxbury at all. Therefore, potentially interested persons in the Town of Duxbury, including discharges to the sewer system and the media, are unlikely to be aware of the opportunity to comment on the draft permit. This deficiency is a clear violation of EPA's regulations at 40 C.F.R. § 124.10(d)(ii), which states that the name and address of the permittee must be included in the public notice of a draft NPDES permit.

Second, Duxbury has no discharge to any water of the United States, so the EPA has no authority to require Duxbury to obtain a NPDES permit, much less to issue a permit that Duxbury did not apply for. See 40 C.F.R. § 122.2 and 124.3. Moreover, Duxbury has never had a sanitary sewer overflow, so there is no basis to claim that Duxbury has any reasonable potential to accidentally discharge to a water of the United States. I understand that the Upper Blackstone Water Pollution Control District is submitting comments concerning the co-permittee provision of the Marshfield permit, which provide a detailed analysis of EPA's lack of legal authority to name co-permittees. Duxbury adopts those comments by reference.

Finally, co-permittee status would be an undue burden for Duxbury. Duxbury has a very small sewer system, serving only 195 homes. The effort and resources necessary to comply with the co-permittee conditions, which are standard conditions not tailored to Duxbury's circumstances, would be disproportionate and wasteful. The system is well maintained and well operated and has no history of any problems. Instead of imposing unnecessary costs that we would need to pass on to our limited pool of ratepayers, EPA and MassDEP should remove Duxbury as a co-permittee.

Response B.1:

Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

C. Comments submitted by Karla H. Sangrey, P.E., Engineer Director/Treasurer, Upper Blackstone Water Pollution Abatement District, dated March 14, 2014.

Comment C.1: In the draft permit issued to Marshfield, the Region again fails to identify a legal basis for its position that it has authority to regulate the Town as co-permittees. While the draft Marshfield permit fact sheet and document entitled *Analysis Supporting EPA Region 1 NPDES Permitting Approach for Publicly Owned Treatment Works that include Municipal Satellite Sewage Collection Systems* ("Region 1's Analysis") seeks to respond to questions raised by the EAB in the Remand Order concerning EPA's legal authority to regulate separately owned municipal collection systems, the Region simply sets forth a series of old and new arguments to justify the regulatory position it previously staked out: that satellite systems can be included in the POTW permit. At footnote 26 of Region 1's Analysis, the Region acknowledges that it's "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." Now,

according to the Region, it “has clarified [its] view” and “determined that a municipal satellite collection system in a POTW is a discharging entity for regulatory purposes.”

The Region makes this change with no basis to justify it. In the *Upper Blackstone* matter, and before the EAB, the satellite collection systems were not “discharging,” but the Region could nonetheless regulate them. In the face of EAB’s rejection of this argument, and in light of the Region’s “clarified view,” the Region now says satellite collection systems are “dischargers.”

The Region’s explanation for its change in position is insufficient and contrary to law. “[A]n agency changing its course must supply a reasoned analysis.” Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co., 463 U.S. 29, 57 (1983). In Region 1’s Analysis, it says only that it has “clarified [its] view.” The Region, however, must “explain the evidence which is available” supporting that change and “must offer a ‘rationale connection between the facts found and the choice made.’” Id. 52. The Region does not, and cannot, identify new evidence or facts. The discharge point, at Outfall 001, has not changed. The owners or operators of the POTW and satellite collection systems have not changed.

Response C.1: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.2: In Section III, Legal Authority, of its Analysis, EPA seeks to justify the imposition of co-permittee requirements upon the Town based upon the definition of “publicly owned treatment works” or “POTW.” Citing to the broad definition of “POTW” which includes the term “sewage collection systems,” EPA contends that a POTW includes not only the treatment works, owned and operated by Marshfield, but also the sewers, pipes, equipment, and other systems owned, operated and maintained by the Town. Based on the definition of POTW at 40 C.F.R. 122.2, EPA concludes,

...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 POTW system discharging to waters of the U.S.

Analysis, p.11.

Under this approach, the POTW in its entirety will be subject to NPDES regulation as a point source discharger under the Act.

Attachment A, p.2

Missing from EPA’s Analysis is any acknowledgement of or reference to the operative terms of the CWA that trigger NPDES permitting: “discharge of any pollutant by any person” from a point source. CWA § 301(a). It is the act of discharging a pollutant from a point source that gives rise to NPDES permitting. The ownership of a collection system, as part of a greater POTW, does not require a NPDES permit under the CWA. The Town’s collection systems have no point source. The Town does not own, operate or control any point source. Marshfield, not the Town is

a person who discharges from a point source. Consequently, the reach of EPA's authority to regulate "dischargers" is limited to Marshfield.

Response C.2: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.3: The CWA at Section 301(a) provides that "except in compliance [with a NPDES Permit] the discharge of any pollutant by any person shall be unlawful." The term "discharge of a pollutant" means "any addition of any pollutant to navigable waters from any point source." CWA § 502(12). The CWA authorizes EPA to "issue a permit for the discharge of any pollutant." CWA § 402(a)(1). Thus, under the CWA it is only those persons who discharge a pollutant from any point source to navigable waters who are subject to NPDES permitting requirements. CWA § 502(14) (defining point source as "any discernable, confined and discreet conveyance . . . from which pollutants are . . . discharged").

EPA incorrectly states that the "NPDES regulations . . . identify the 'POTW' as the entity subject to regulation," citing to 40 C.F.R. § 122.21(a). Analysis, p. 8. The "entity" subject to regulation is the "person who discharges or proposes to discharge." 40 C.F.R. §122.21(a)(1). Such persons are required to make application for a permit and "[a]pplicants for new or existing POTWs must submit information required" by 40 C.F.R. §122.21(j), using Form 2A. 40 C.F.R. §122.21(a)(2)(B).

EPA says "[w]hen 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." Analysis, p. 9 According to the permit, at Part I.A.1, "the permittee [i.e. Marshfield] is authorized to discharge from outfall serial number 001 and at Part I.B. the permit "authorizes discharges only from the outfall(s) listed in Part I.A.1." The Town does not own or operate outfall 001. The Town is not a person who discharges from a point source.

The Town does not "discharge a pollutant" as the term is defined under CWA. No doubt, the Town "discharges" – as that term is commonly used – wastewater via conveyance systems to a point source. The CWA, however, is specific; persons who discharge pollutants from a point source need a NPDES permit to do so. The Town has no "direct discharge." See 40 C.F.R. 122.2 (defining "direct discharge" to mean "discharge of a pollutant").

At footnote 28 of the Analysis, EPA states that some municipal satellite collection systems have erroneously "argued that the addition of pollutants to waters of the United States from pipes, sewer or other conveyances that go to a treatment plant are not a "discharge of a pollutant" under 40 C.F.R. 122.2 (persons who "discharge[] through pipes, sewers, or other conveyances owned by a . . .municipality which do not lead to a treatment works" are persons who "discharge a pollutant" under 40 C.F.R. 122.2 (emphasis supplied)). In support of this position, EPA says that there is "[o]nly one category of such discharges...excluded: indirect discharges" and that "the satellite system discharges at issue here are not indirect discharges"

EPA seeks to conflate the term “discharge” used in “discharge of a pollutant” with the “transfer of flow” or “conveyance” from a municipal conveyance system to the POTW treatment plant or works that has a point source “from which pollutants are discharged.” The word “discharge” is a defined term: “When used without qualification [it] means the ‘discharge of a pollutant.’” 40 C.F.R. 122.2. There is no “discharge from a municipal conveyance system. And in this case there is but discharge point from a POTW. See draft permit Part I. A. I. and B. It is that point source “from which pollutants are discharged” that triggers NPDES permitting and only those persons who own or operate that point source are subject to such permitting. That point source is not owned by the Towns. In short, the jurisdictional reach under the CWA does not include persons, such as the Towns that own, operate and maintain sewer lines that provide a conveyance for waste waters for treatment and discharge by another person from its point source.

Response C.3:

Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.4. The Region’s rationale for seeking to impose co-permittee requirements upon the Town is not consistent with the references to “municipality” in the 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.” The final sentence of the regulatory definition of POTW in the pretreatment regulations at 40 C.F.R. § 403.3(q), refers to municipalities that have “jurisdiction over...the discharges from such a treatment works.” 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...” (emphasis supplied). The Town has jurisdiction over only its collection system. It has no jurisdiction over the treatment plant or point source of discharge. Thus, the Region’s view that a satellite collection system is part of a POTW is inconsistent with the final sentence of the regulatory definition of POTW in the pretreatment regulations. That sentence provides the “POTW” may “also” mean a municipality has no bearing on this limitation.

Response C.4: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.5: The absence of EPA authority to make the Town a co-permittee is borne out by the permitting process and EPA’s regulations at 40 C.F.R. § 122.21, Subpart B, Permit Application Requirements. 40 C.F.R. § 122.21(a), entitled “Duty to Apply,” provides that “[a]ny person who discharges or proposes to discharge pollutants ... must submit a complete application...in accordance with this section [122.21] and part 124 of this chapter.” 40 C.F.R. § 122.21(a)(i). (emphasis supplied). Consistent with the CWA, EPA regulations require persons “who discharge pollutants” have an NPDES Permit. See CWA § 301(a)(“except in compliance with this section and [other sections] of this title, the discharge of any pollutant by any person shall be unlawful”), and CWA § 402(a) (authorizing EPA to issue a permit “for the discharge of any pollutant”). Throughout, the permit application regulations at 40 C.F.R. § 122.21

contemplate that it is the “person” who discharges pollutants who must obtain a NPDES Permit. No where [sic] is 40 C.F.R. §122.21 is there any reference to “co-permittee” or any suggestion that separately owned and operated conveyance systems are subject to NPDES permitting. Consistent with CWA, it is the person who discharges a pollutant from a point source who is subject to NPDES permitting requirements[.]

While 40 C.F.R. § 122.21(a)(1) requires an application only from those persons who discharge from a point source, the regulations anticipate circumstances when a facility may be owned or operated by separate entities. The permit application regulations provide that “[w]hen a facility or activity is owned by one person but is operated by another person, it is the operator’s duty to obtain a permit.” 40 C.F.R. § 122.21(b). Thus, it is operator [sic] of the “point source” that must have the permit. “Owner or operator” means “the owner or operator of any “facility or activity” subject to regulation under the NPDES program.” 40 C.F.R. § 122.2. “Facility or activity” means “any NPDES point source or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the NPDES program.” 40 C.F.R. § 122.2 (emphasis supplied).

Nothing in 40 C.F.R. § 122.21 requires or suggests that “satellite collection systems” need to make application for a NPDES permit. While the regulations contemplate that “[m]ore than one application form may be required from a facility,” multiple applications are only required where there may be multiple point sources, not multiple owned parts of a POTW. See 40 C.F.R. § 122.21(a)(2)(i) (“More than one application may be required from a facility depending on the number and types of discharges or outfalls found there.”) Again, the regulations require persons who discharge from point sources to have an NPDES permit.

Response C.5: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.6: Nowhere in Application Form 2A is there any reference to a “co-permittee” or suggestion that a person may make an application, with a treatment works applicant, as co-permittee. See <http://www.epa.gov/npdes/pubs/final2a.pdf>. At page 1 of 21 of Form 2A, applicants “must complete questions A.1. through A.8 A treatment works that discharges effluent to surface waters of the United States must also answer questions A.9. through A.12.” Part A.1 through A.8 of Form 2A asks for information about the facility and applicant. And asks “is the applicant the owner or operator (or both) of the treatment works?” (A.1., A.2.). Form 2A asks for collection system information; specifically, “information on municipalities and areas served by the facility...type of collection system (combined vs. separate) and its ownership (municipal, private, etc.).”(A.4.). Form 2A asks for information about the “collection system(s) used by the treatment plant.”(A.7.). If the NPDES regulations contemplated permitting of collection systems, one would expect to see in each of these parts of the NPDES Application Form 2A some reference to the owners or operators of collection systems as “co-permittees.” There is none. Form 2A also requires information on discharges. At Part A.8.a., Form 2A asks “Does the treatment works discharge effluent to waters of the U.S. ____ Yes ____ No.” Form 2A obviously contemplates “discharges” from a “treatment works” not a collection system. Finally, at Part A.1.8.a.(i)-(v), Form 2A seeks information on the “types of discharge points the treatment works

uses.” No “collection system” or “satellite collection system” is listed here. This should be no surprise; collection systems and satellite collection systems do not have “discharge points” under the NPDES regulations.

Response C.6: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.7: In its Analysis, EPA would “waive” the Town’s permit application and all requirements of 40 C.F.R. § 122.21. In its effort to justify including the Town as co-permittee, EPA both misapplies and takes 40 C.F.R. § 122.21(j) entirely out of context. First, waivers can only be granted to those persons who have submitted applications. Nothing in the fact sheet suggests that the Town applied for any NPDES permit. § 122.21(j) provides that:

Permit applicant must submit all information available at the time of permit application...The Director may waive any requirement of this paragraph if he or she has access to substantially identical information. (emphasis supplied).

40 C.F.R. § 122.21(j) does not support the EPA’s proposed waiver of any application by the Town; it allows only for the waiver of certain information in a permit application submitted by the applicant.

Response C.7: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.8: Second, EPA cannot unilaterally waive requirements of an application without a request to do so; the person must seek a waiver and that waiver must be approved by EPA. 40 C.F.R. § 122.21(e) requires a complete application before EPA may issue a permit “([EPA] shall not issue a permit before receiving a complete application for a permit”), and a “waiver application” must be made, and approved, or not acted upon by EPA.

A permit application shall not be considered complete if a permitting authority has waived application requirements under paragraphs (j) or (q) of this section and EPA has disapproved the waiver application. If a waiver request has been submitted to EPA more than 210 days prior to permit expiration and EPA has not disapproved the waiver application 181 days prior to permit expiration, the permit application lacking the information subject to the waiver application shall be considered complete.

Nothing in the fact sheet suggests that the Town of Duxbury has made an application for a waiver from application requirements. 40 C.F.R. § 122.21(j) says only that the “Director may waive any requirement of this paragraph if he or she has access to substantially identical information.” This provision, in context, is obviously designed to allow waiver of some of the detailed and often duplicate information required under Section 122.21 and in EPA’s permit application forms. As noted above, Form 2A consists of 21 pages and requires detailed information about the “treatment works.” See Form 2A at <http://www.epa.gov/npdes/pubs/final2a.pdf>. Nothing in Section 122.21(j) suggests EPA may

waive the requirement at 40 C.F.R. § 122.21(a)(1) mandating an application from those persons who discharge from a point source. Likewise, nothing in Section 122.21(j) suggests EPA may waive the requirement for application signatures and certifications and authorization required by 40 C.F.R. § 122.22, none of which the Town has provided. EPA seeks to ignore its own regulations and issue a permit to the Town where it has not applied for an NPDES permit.

Response C.8: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.9: EPA would further seek to cause the Town 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.” Exhibit C to Analysis. EPA would then use its authority, under CWA § 308, to compel information from the Town, should EPA deem information provided by the permit applicant incomplete. CWA § 308, however, applies “the owner or operator of any point source.” CWA § 308(a) (A). Information may be obtained only from such owner or operator of the “point source,” the “effluent source” or “the owner or operator of such source.” CWA § 308(a)(B)(i) and (ii). Again, because the Town does not own or operate any point source, CWA § 308 would not apply to the Town. Under EPA’s Analysis, it would read out of the regulations the entire Section 122.21. EPA’s cobbled approach and legal analysis toward finding authority where there is none is not supported by its own regulations.

Response C.9: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.10: Nothing in EPA’s permit writers’ manual evidences any authority to permit satellite collection systems as part of a greater POTW. Indeed, EPA’s permit writers’ manual make[s] no reference to permitting of satellite collection systems or to the owner of such systems being subject to a NPDES permit as a co-permittee. See EPA NPDES Permit Writers’ Manual, September 2010 http://www.epa.gov/npdes/pubs/pwm_2010.pdf. Instead, the Permit Writers’ Manual supports the analysis provided above. It says: “Under the national program, NPDES permits are issued only to direct dischargers.” Permit Writers’ Manual Section 1.3.4 (emphasis supplied). As noted above, a “direct discharge” means the “discharge of a pollutant” and “discharge of a pollutant” means “any addition of any pollutant to navigable waters from any point source.” CWA § 502(12). 40 C.F.R. 122.2.

Section 4.1 of the Permit Writers’ Manual addresses “Who Applies for an NPDES Permit?” No mention is made in this section to satellite collection systems or to the owners of such systems. Instead, the Permit Writers’ Manual states:

The NPDES regulations at Title 40 of the *Code of Federal Regulations* (C.F.R.) 122.21(a) require that any person, except persons covered by general permits under § 122.28, who discharges pollutants or proposes to discharge pollutants to waters of the United States must apply for a permit. Further § 122.21(e) prohibits the permitting authority from issuing an individual permit until and unless a prospective discharger provided a complete application. This regulation is broadly inclusive and ties back to the Clean Water Act

(CWA) section 301(a) provision that, except as in compliance with the act, "...the discharge of any pollutant by any person shall be unlawful." In most instances, the permit applicant will be the owner (e.g. corporate officer) of the facility. However, the regulations at § 122.21(b) require that when a facility or activity is owned by one person but operated by another person, it is the operator's duty to obtain a permit. The regulations also require the application to be signed and certified by a high-ranking official of the business or activity. The signatory and certification requirements are at § 122.22. Permits (and applications) are required for most discharges or proposed discharges to waters of the United States; however, NPDES permits are not required for some activities as specified under the *Exclusions* provision in § 122.3

Section 4.3 of the Permit Writers' Manual addresses what forms must be submitted and at Exhibit 4-3 describes "the type of dischargers required to submit NPDES application forms, identifies the forms that must be submitted, and references the corresponding NPDES regulatory citation." Again, in Section 4.3 there is no mention of satellite collection systems or need for the owners of such systems to have a NPDES permit.

Response C.10: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comments C.11: EPA's position that the collection system is part of the POTW does not advance its argument that "satellite collection systems" should be deemed "co-permittees" in NPDES permits. If the collection systems is part of the POTW, it should not matter who owns what part or portions as it is the "person" who owns or operates that portion of the POTW that "discharges a pollutant" from a point source who is required to have a permit for that discharge. EPA acknowledges that the Town does not own or operate the entire POTW. While EPA seeks "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)," permit conditions "pertain only to the portions of the POTW collection system that the satellites own." Analysis, p. 7. See Permit page 1 of 15. Because the Town does not own or operate the point source – Outfall 001 – they are not a person who may be subject to a NPDES permit.

Response C.11: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.12: The fact sheet and Analysis does not explain why operation and maintenance of the Town's sewer system is not being adequately regulated by under State regulations at 310 CMR 12.00. 312 CMR 12.02 defines "Sewer Systems" to mean "pipelines or conduits, pumping stations, force mains, and all other structures, devices, appurtenances, and facilities used for collecting and conveying wastes to a site or works for treatment or disposal." The purpose of 314 CMR 12.00 is to insure "proper operation and maintenance of ... sewer systems within the Commonwealth," and sets forth numerous requirements for the proper operation and maintenance of such systems. See 314 CMR 12.03(4), (10) and (11); 12.04(4); 12.05(5), (6) and (12); and 12.07(7).

Response C.12: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.13: In its Determination of Remand issued to the District on July 7, 2010, the Region indicated it would “coordinate broadly within EPA in developing a response” to the *Upper Blackstone* EAB Remand Order. Nothing in Region 1’s Analysis indicates this was done. Because EPA’s authority to permit satellite collection systems impacts not only the Region, but is of national significance, and because the issues raised by the EAB concerning EPA’s legal authority to regulate co-permittees were limited to those raised by the District, the Region’s effort to permit satellite collection systems as co-permittees or otherwise through separate permits should be presented to the public for review and comment on a national level.

Response C.13: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.14: EPA’s attempt to change the legal requirements applicable to satellite collection systems is a legislative rule that EPA is issuing without formal notice and comment rulemaking in violation of the Administrative Procedures Act (“APA”). In trying to distinguish between legislative rules and policy statements, courts have found that “if a document expresses a change in substantive law or policy the agency intends to make binding, or administers with binding effect, the agency may not rely upon statutory exemption for policy statements, but must observe the APA’s legislative rulemaking procedures.” *Gen. Elec. Co. v. E.P.A.*, 290 F.3d 377, 383-84 (D.C. Cir. 2002). *See also Appalachian Power Co. v EPA*, 208 F.3d 1015 (D.C. Cir. 2000)(finding that an EPA guidance document that imposed new monitoring requirements relating to the operation of permit programs under the Clean Air Act was a legislative rule because it was treated as binding), *Nat’l Mining Ass’n v. Jackson*, 816 F. Supp. 2d 37, 42-49 (D.D.C. 2011)(finding a violation of the Administrative Procedures Act where EPA sought to impose a new process for obtaining section 404 permits without notice and comment rulemaking), *New Hope Power Co v. U.S. Army Corps of Eng’rs*, 746 F. Supp. 2d. 1272, 1283-84 (S.D. Fla. 2010)(striking Corps guidance purporting to amend the prior converted croplands exclusion because it amounted to new legislative rules that created a binding norm and the Corps failed to comply with the APA). *Iowa League of Cities v. EPA*, 711 F.3d 844 (8th Cir. 2013), *petition for rehearing denied* (July 10, 2013)(vacating new rule banning bacteria mixing zones in waters designated for primary recreation and new rule on blending peak wet weather flows because new rules had the effect of legislative rule that violated the APA’s procedural requirements by not using notice and comment procedures and because rules were promulgated “without observance of procedure required by law.”)

In the case of the draft Marshfield permit, there is no question that EPA intends its new position regarding satellite systems to have a binding effect. Moreover, it is telling that in 2001, EPA began a rulemaking process that purported to give the agency direct authority over satellite systems, in the context of a proposed pertaining to Municipal Sanitary Sewer Collection Systems, Municipal Satellite Collection Systems, and Sanitary Sewer Overflows (proposal signed Jan. 4, 2001)(formerly available at

https://cfpub.epa.gov/npdes/regresult.cfm?program_id=4&view=all&type=3, but now withdrawn from EPA's website). EPA later withdrew the proposed rule.

Response C.14: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.

Comment C.15: In June 2010, EPA did seek through “listening sessions” information from the public concerning permitting of satellite collection systems. See Fed. Reg 30395 (June 1, 2010)(“EPA is considering whether to propose modifying the [NPDES] regulations as they apply to municipal sanitary sewer collection systems”). In contemplating a potential regulatory change, EPA asked specifically for input on the question: *Should EPA propose to require permit coverage for municipal satellite collections systems?* Because EPA was “considering clarification of the framework for regulating municipal satellite collection systems under the NPDES program,” and doing so via a regulatory change, the Region should not include at this time, and based on unsupported legal authority outlined above, the Town as co-permittee in this permit. Until such time as EPA addresses this issue of a national level and gives the public the opportunity review and comment on the legal Analysis set forth by the Region, it should not include co-permittee provisions in this permit.

Response C.15: Please see paragraph 4 on page 1 of this Response to Comments. EPA has removed the Town of Duxbury as a co-permittee in the final permit.