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 Scituate
Department of Public Works

is authorized to discharge from the facility located at

Scituate Wastewater Treatment Plant
161 Driftway
Scituate, MA 02066

to receiving water named

Tidal Creek to Herring River
(South Coastal Watershed - MA 94-07)

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

This permit shall become effective on the first day of the calendar month following 60 days after signature.

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

This permit supersedes the permit issued on November 22, 2004.
This permit consists of 15 pages in Part I including effluent limitations and monitoring requirements, 25 pages in Part II including Standard Conditions, Attachment A – Whole Effluent Toxicity Test Protocol, and Attachment B - Summary of Required Report Submittals.

Signed this 27th day of September, 2012

Director
Office of Ecosystem Protection
Protection Agency
Boston, MA

Director
Massachusetts Wastewater Environmental
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 the tidal creek tributary to the Herring River. Such discharges shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS					MONITORING REQUIREMENTS [3]	
PARAMETER	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**AVERAGE MONTHLY**	**AVERAGE WEEKLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE[3] TYPE**
FLOW[2]	**********	**********	1.6 MGD	**********	Report MGD	CONTINUOUS	RECORDER
FLOW[2]	**********	**********	Report MGD	**********	**********	CONTINUOUS	RECORDER
$CBOD_5$ [4]	133 lbs/day	**********	10 mg/l	15 mg/l	Report mg/l[1]	1/WEEK	24-HOUR COMPOSITE[5]
TSS [4]	133 lbs/day	**********	10 mg/l	15 mg/l	Report mg/l[1]	1/WEEK	24-HOUR COMPOSITE[5]
pH RANGE[1]	6.5 - 8.5 SU (SEE PERMIT PAGE 5 OF 15, PARAGRAPH I.A.1.b.)					3/WEEK	GRAB
ENTEROCOCCUS [1,6]	**********	**********	35 MPN/100 ml	**********	276 MPN/100 ml	3/WEEK	GRAB
FECAL COLIFORM[1,6]	**********	**********	14 MPN/100ml	**********	28 MPN/100ml	3/WEEK	GRAB
DISSOLVED OXYGEN	**********	**********	≥ 6.0 mg/l	**********	Report mg/l	1/WEEK	GRAB
TOTAL COPPER[7]	**********	**********	4 ug/l	**********	6 ug/l	1/MONTH	24-HOUR COMPOSITE[5]
TOTAL NICKEL[7]	**********	**********	8 ug/l	**********	Report ug/l	1/MONTH	24-HOUR COMPOSITE[5]
TOTAL ZINC	**********	**********	86 ug/l	**********	95 ug/l	1/MONTH	24-HOUR COMPOSITE[5]
TOTAL NITROGEN	53 lbs/day	**********	4.0 mg/l	**********	Report mg/l	1/WEEK	24-HOUR COMPOSITE[5]
WHOLE EFFLUENT TOXICITY[8, 11]	Acute[9] $LC_{50} \geq 100\%$ Chronic[10] C-NOEC ≥ 100%					4/YEAR	24-HOUR COMPOSITE

Footnotes:

1. Required for State Certification.

2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.

3. Effluent samples shall be collected at the point specified in the table below. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

Parameter	Sample Location
Flow	Parshall flume
$CBOD_5$ TSS Total nitrogen Total copper Total nickel Total zinc Whole effluent toxicity	Collect sample from the automatic sampler located after the UV disinfection unit $CBOD_5$ and TSS influent samples shall be taken from the influent wet well
pH Dissolved oxygen Fecal coliform bacteria *Enterococcus*	Collect sample after the effluent Parshall flume

All samples shall be tested using the analytical methods found in 40 CFR Part 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR Part 136.

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.

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, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

6. Fecal coliform and *Enterococcus* monitoring will be conducted year-round.

7. The permittee shall analyze total copper and total nickel samples using an EPA approved method found in 40 CFR §136. The method(s) shall have a minimum level (ML) lower than the effluent limits for these pollutants. The ML is the level at which the entire analytical system gives recognizable mass spectra and acceptable calibration points when analyzing for pollutants of concern. The level corresponds to the lowest point at which the calibration curve is determined for the pollutant of concern.

8. The permittee shall conduct chronic (and modified acute) toxicity tests *four* times per year. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test Inland Silverside, *Menidia beryllina* and Sea Urchin, *Arbacia punctulata.*

   Toxicity test samples shall be collected during the months listed below. The test results shall be submitted by the last day of the month following the completion of the test. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates	**Submit Results By:**	**Test Species**	**Acute Limit LC_{50}**	**Chronic Limit C-NOEC**
January April July October	February 28th May 31st August 31st November 30th	*Arbacia punctulata* *Menidia beryllina* (see Attachment A)	****** ≥100%	≥100% ≥100%

   After submitting **one year** and a **minimum** of four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

9. The Lethal Concentration$_{50}$ (LC_{50}) is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

10. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival, or reproduction, based on a statistically significant difference from dilution control, at a specific time of observation as determined from hypothesis testing.

As described in the EPA WET Method Manual EPA 821-R-02-013, Section 10.2.6.2, all test results are to be reviewed and reported in accordance with EPA guidance on the evaluation of the concentration-response relationship. The "100% or greater" limit is defined as a sample which is composed of 100% (or greater) effluent, the remainder being dilution water.

11. 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 (Toxicity Test Procedure and Protocol) 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**.

Part I.A.1. (Continued)

a. The discharge shall not cause a violation of the state water quality standards of the receiving waters.

b. The pH of the effluent shall not be less than 6.5 or greater than 8.5 at any time.

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 $CBOD_5$. 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 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

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I A.1.of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit and shall be reported to EPA and MassDEP in accordance with Part II 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/dep/water/approvals/surffms.htm#sso.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O & M) 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 submitted and implemented to EPA and MassDEP within twenty four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;
(2) A preventive maintenance and monitoring program for the collection system;
(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;
(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;
(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;
(6) A description of the permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts; and
(7) An educational public outreach program for all aspects of I/I control, particularly private inflow.
(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The permittee shall submit a summary report of activities related to the implementation of its Collection System O & M Plan during the previous calendar year. The report shall be submitted to EPA and MassDEP annually by March 31.

The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;
b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
d. A map with areas identified for investigation/action in the coming year;
e. If treatment plant flow has reached 80% of the design flow [1.28 mgd] or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

7. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works[1] 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).

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 which dispose of sludge in

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

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 C.F.R. 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]

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 …."

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[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

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. 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 is 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
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

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

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) or
Bureau of Waste Prevention (Industrial)
20 Riverside Drive
Lakeville, MA 02347

Copies of whole effluent toxicity reports only:

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

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

F. 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 C.M.R. 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 C.F.R. 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 CHRONIC (and Modified Acute)
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

- Inland Silverside (Menidia beryllina) Larval Growth and Survival Test
- Sea Urchin (Arbacia punctulata) 1 Hour Fertilization Test

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

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/swguidance/methods/wet/index.cfm#methods

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. Where 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 AND USE

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

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

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

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 oxidants (as per 40 CFR Part 122.21).

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 test acceptability criteria (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 the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate dilution water (ADW) of known quality with hardness similar to that of the receiving water may be substituted. Substitution is species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species.

Substitution to an ADW is authorized in two cases. The first is the case where repeating a test due to toxicity in the site dilution water requires an immediate decision for ADW use be made by the permittee and toxicity testing laboratory. The second is in the case where two of the most recent documented incidents of unacceptable site dilution water toxicity requires ADW use in future WET testing. For the second case, written notification from the permittee requesting ADW use and written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

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

Director
Office of Ecosystem Protection
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.

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA New England requires that if a reference toxicant test was being performed concurrently with an effluent or receiving water test and fails, both tests must be repeated.

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

EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE SEA URCHIN, ARBACIA PUNCTULATA, FERTILIZATION TEST[1]

1. Test type	Static, non-renewal
2. Salinity	30 o/oo ± 2 o/oo by adding dry ocean salts
3. Temperature	20 ± 1°C temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory illumination
5. Light intensity	10-20 uE/m^2/s, or 50-100 ft-c (Ambient Laboratory Levels)
6. Test vessel size	Disposal (glass) liquid scintillation vials (20 ml capacity), presoaked in control water
7. Test solution volume	5 ml
8. Number of sea urchins	Pooled sperm from four males and pooled eggs from four females are used per test
9. Number of egg and sperm cells	About 2000 eggs per chamber and 5,000,000 sperm cells per vial
10. Number of replicate chambers	4 per treatment
11. Dilution water	Uncontaminated source of natural seawater or deionized water mixed with artificial sea salts
12. Dilution factor	Approximately 0.5, must bracket the permitted RWC
13. Test duration	1 hour and 20 minutes

14. Effects measured	Fertilization of sea urchin eggs
15. Number of treatments per test[2]	5 and a control. (receiving water and laboratory water control) An additional dilution at the permitted effluent concentration (% effluent) is required.
16. Acceptability of test	70% - 90% egg fertilization in controls Minimum of 70% fertilization in dilution water controls. Effluent concentrations exhibiting greater than 70% fertilization, flagged as statistically significantly different from the controls, will not be considered statistically different from the controls for NOEC reporting.
17. Sampling requirements	For on-site tests, samples are to be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
18. Sample volume required	Minimum 1 liter

Footnotes:

[1] Adapted from EPA 821-R-02-014

EPA NEW ENGLAND RECOMMENDED TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA, GROWTH AND SURVIVAL TEST[1]

1. Test type	Static, renewal
2. Salinity	5 o/oo to 32 o/oo +/- 2 o/oo of the selected salinity by adding artificial sea salts
3. Temperature	25 ± 1°C, temperature must not deviate by more than 3°C during test
4. Light quality	Ambient laboratory light
5. Light intensity	10-20 uE/m^2/s, or 50-100 ft-C (Ambient Laboratory Levels)
6. Photoperiod	16 hr light, 8 hr darkness
7. Test vessel size	600 - 1000 mL beakers or equivalent (glass test chambers should be used)
8. Test solution volume	500-750 mL/replicate loading and DO restrictions must be met)
9. Renewal of test solutions	Daily using most recently collected sample
10. Age of test organisms	Seven to eleven days post hatch; 24 hr range in age
11. Larvae/test chamber	15 (minimum of 10)
12. Number of replicate chambers	4 per treatment
13. Source of food	Newly hatched and rinsed Artemia nauplii less than 24 hr old
14. Feeding regime	Feed once a day 0.10 g wet wt Artemia nauplii per replicate on days 0 – 2 feed 0.15 g wet wt Artemia nauplii per replicate on days 3-6
15. Cleaning	Siphon daily, immediately before test solution renewal and feeding
16. Aeration[2]	None
17. Dilution water	Uncontaminated source of natural seawater; or deionized water mixed with artificial sea salts

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

Footnotes:

[1] Adapted from EPA 821-R-02-014

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

V.1. Test Acceptability Criteria

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

V.2. Use of Reference Toxicity Testing

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

In general , if reference toxicity test result fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.
If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

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

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

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

VI. CHEMICAL ANALYSIS

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

Parameter	Effluent	Diluent	Minimum Level for effluent [*1] (mg/L)
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
Total Metals			
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 AND REVIEW

A. Test Review

1. Concentration / Response Relationship
A concentration/response relationship evaluation is required for test endpoint determinations from both Hypothesis Testing and Point Estimate techniques. The test report is to include documentation of this evaluation in support of the endpoint values reported.

The dose-response review must be performed as required in Section 10.2.6 of EPA-821-R-02-014. Guidance for this review can be found at http://water.epa.gov/scitech/methods/cwa/wet/upload/2007_07_10_methods_wet_disk1_ctm.pdf.

In most cases, the review will result in one of the following three conclusions: (1) Results are reliable and reportable; (2) Results are anomalous and require explanation; or (3) Results are inconclusive and a retest with fresh samples is required.

2. Test Variability (Test Sensitivity)

This review step is separate from the determination of whether a test meets or does not meet TAC. Within test variability is to be examined for the purpose of evaluating test sensitivity. This evaluation is to be performed for the sub-lethal hypothesis testing endpoint growth for *Menidia beryllina* as required by the permit. The test report is to include documentation of this evaluation to support that the endpoint values reported resulted from a toxicity test of adequate sensitivity. This evaluation must be performed as required in Section 10.2.8 of EPA-821-R-02-014.

To determine the adequacy of test sensitivity, USEPA requires the calculation of test percent minimum significant difference (PMSD) values. In cases where NOEC determinations are made based on a non-parametric technique, calculation of a test PMSD value, for the sole purpose of assessing test sensitivity, shall be calculated using a comparable parametric statistical analysis technique. The calculated test PMSD is then compared to the upper and lower PMSD bounds shown for marine tests in Section 10.2.8.3, p. 54, Table 6 of EPA-821-R-02-014. The comparison will yield one of the following determinations.

- The test PMSD exceeds the PMSD upper bound test variability criterion in Table 6, the test results are considered highly variable and the test may not be sensitive enough to determine the presence of toxicity at the permit limit concentration (PLC). If the test results indicate that the discharge is not toxic at the PLC, then the test is considered insufficiently sensitive and must be repeated within 30 days of the initial test completion using fresh samples. If the test results indicate that the discharge is toxic at the PLC, the test is considered acceptable and does not have to be repeated.

- The test PMSD falls below the PMSD lower bound test variability criterion in Table 6, the test is determined to be very sensitive. In order to determine which treatment(s) are statistically significant and which are not, for the purpose of reporting a NOEC, the relative percent difference (RPD) between the control and each treatment must be calculated and compared to the lower PMSD boundary. See *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the NPDES Program*, EPA 833-R-00-003, June 2002, Section 6.4.2. The document can be located under Guidance Documents at the following website location http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#guidance. If the RPD for a treatment falls below the PMSD lower bound, the difference is considered statistically insignificant. If the RPD for a treatment is greater that the PMSD lower bound, then the treatment is considered statistically significant.

- The test PMSD falls within the PMSD upper and lower bounds in Table 6, the sub-lethal test endpoint values shall be reported as is.

B. Statistical Analysis

1. General - Recommended Statistical Analysis Method

Refer to general data analysis flowchart, EPA 821-R-02-014, page 45

For discussion on Hypothesis Testing, refer to EPA 821-R-02-014, Section 9.6

For discussion on Point Estimation Techniques, refer to EPA 821-R-02-014, Section 9.7

2. *Menidia beryllina*

Refer to survival hypothesis testing analysis flowchart, EPA 821-R-02-014, page 181

Refer to survival point estimate techniques flowchart, EPA 821-R-02-013, page 182

Refer to growth data statistical analysis flowchart, EPA 821-R-02-014, page 193

3. *Arbacia punctulata*

Refer to fertilization data testing flowchart, EPA 821-R-02-014, page 312

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
  - Test sensitivity evaluation results (test PMSD for growth)
  - Permit limit and toxicity test results
  - Summary of test sensitivity and concentration response evaluation

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 limits (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review.

Summary of Required Report Submittals

This table is a summary of the reports required to be submitted under this NPDES permit as an aid to the permittee(s). If there are any discrepancies between the permit and this summary, the permittee(s) shall follow the permit requirements. The addresses are for the submittal of hard copies.

When the permittee begins reporting using NetDMR, submittal of hard copies of many of the required reports will not be necessary. See permit conditions for details.

1 U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square - Suite 100 Boston, MA 02109-3912	**2** MassDEP Division of Watershed Management Surface Water Discharge Permit Program 627 Main Street, 2nd Floor Worcester, MA 01608
3 Massachusetts Department of Environmental Protection Southeast Region Bureau of Resource Protection 20 Riverside Drive Lakeville, MA02347	

Requirement	**Due Date**	**Addressees**
Toxicity test samples shall be collected during the months of. January, April, July, and October [Part I.A Footnote 8]	Results shall be submitted by February 28th, May 31st, August 31st, and November 30th of each year	1 and 2
If the average annual flow in any calendar year exceeds 80% of the facility's design flow, the permittee shall submit a report to MassDEP. [Part I.A.2.g.]	By March 31 of the following calendar year	1, 2 and 3
Notification of Sanitary Sewer Overflows [Part I.B]	Within 24 hours of SSO event.	1 and 3
The permittee shall prepare a map of the sewer collection system it owns.	Within 30 months of the effective date of this permit	1, and 3
The permittee shall develop and implement a Collection System Operation and Maintenance Plan.	Within six (6) months of the effective date of the permit, the permittee shall submit to EPA and MassDEP	1, and 3
The full Collection System O & M Plan shall be submitted and implemented to EPA and MassDEP	Within twenty four (24) months from the effective date of this permit.	1and 3

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	1and 3
Annual Sludge Report [Part I.D.8]	Annually by February 19	1and 3
Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) [Part I.G]	Postmarked no later than the 15th day of the following month.	1and 3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
FIVE 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

NPDES PERMIT NO: **MA0102695**

PUBLIC NOTICE DATE: November 4, 2011 – December 3, 2011

NAME AND ADDRESS OF APPLICANT:

Department of Public Works
Town of Scituate
600 Chief Justice Cushing Way
Scituate, MA 02066

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Scituate Wastewater Treatment Plant
161 Driftway
Scituate, MA 02066

RECEIVING WATERS: **Tidal Creek to Herring River**
(South Shore Coastal Watershed - MA 94-07)

CLASSIFICATION: **SA**

I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit was issued November 22, 2004. On December 27, 2004, Scituate filed a petition for review (appeal) of the permit with the Environmental Appeals Board ("Board"), seeking that the permit be remanded back to EPA New England on several grounds. The Board issued an Order Denying Review on April 19, 2006. All conditions in the November 22, 2004 permit went into effect on June 1, 2006. The expiration date is June 1, 2011. A timely re-application was received. The proposed term of this draft permit is five years. This fact sheet includes: Attachment A- Discharge Monitoring Report Data, Figure 1- Location Map, Location Satellite view, and a Process Flow Schematic.

TYPE OF FACILITY AND DISCHARGE LOCATION

The Town of Scituate Wastewater Treatment Plant (WWTP) is a 1.6 million gallon per day (mgd) advanced treatment facility providing treatment to primarily domestic and commercial wastewater. The current annual average effluent flow is 1.31 mgd and the maximum daily flow is 3.90 mgd[a]

The wastewater treatment facility was initially put in operation in 1965 and upgraded in 1980 and 2000. The facility discharges through outfall 001, to an unnamed tidal creek that is a tributary to the Herring River, which in turn discharges into the North River Estuary. This facility serves a population of 7,500. The collection system is a separate sanitary sewer system.

II. DESCRIPTION OF DISCHARGE

A quantitative description of the discharge in terms of significant effluent parameters based on recent discharge monitoring reports (DMRs), March 1, 2009 through February 28, 2011, is shown in Attachment A of this fact sheet.

III. LIMITATIONS AND CONDITIONS

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

IV. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. PROCESS DESCRIPTION

Raw influent arrives at the WWTP through a 36 inch diameter sewer. Preliminary treatment consists of a mechanical bar screen or optional manual (hand) screen followed by two wet wells and two aerated grit tanks. Wastewater then flows from the grit tank to a distribution tank, where it is distributed to the (new) Number 4 aeration tank. Flows greater than can be handled by tank Number 4 are sent to the three older aeration tanks as offline storage. Following aeration, flow is channeled to three settling tanks followed by four down-flow filters (for nitrogen removal). Disinfection is by two banks of ultraviolet lights. The effluent receives post treatment aeration in 2 tanks and flow is measured by a Parshall flume prior to discharge through a 20 inch diameter pipe to the tidal creek.

Disinfection -The WWTP has two parallel ultra-violet disinfection units consisting of two 36-foot channels with three lamp banks each. Each channel is designed to provide an energy dose level of approximately 64,000 uW-sec/cm^2 at peak flow, with a 45 second retention time at peak flow. The power supply is automatically varied in direct proportion to plant flow.

B. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Overview of Federal and State Regulations

Under Section 301(b)(1) of the Clean Water Act ("CWA"), publicly owned treatment works ("POTWs") must achieve effluent limitations based upon Secondary Treatment by July 1, 1977. The secondary treatment requirements are set forth at 40 C.F.R. Part 133.102.

[a] December 15, 2010 Application

In addition, Section 301(b)(1)(c) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water.

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

2. Water Quality Standards; Designated Use; Outfall 001

The Scituate Wastewater Treatment Plant discharges to a 2,000 foot long (approximate) tidal creek which runs through a salt marsh and empties into the Herring River, which is tributary to the North River, which in turn empties into Massachusetts Bay.

The tidal creek and the Herring River are not specifically designated in the Tables or Figures in 314 CMR 4.06, and so are classified SA pursuant to 314CMR 4.06 (4). According to 314 CMR 4.05(4), Class SA waters are designated as an excellent habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting without depuration (Open Shellfish Areas). These waters shall have excellent aesthetic value.

The North River is designated in the Tables in 314 CMR 4.06 as SA water, and the segment at the confluence with the Herring River (Main Street to Massachusetts Bay) is designated for shellfishing.

The objective of the Federal Clean Water Act (CWA) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. To meet this goal the CWA requires states to develop information on the quality of their water resources and report this information to the U.S. Environmental Protection Agency (EPA), the U.S. Congress, and the public. To this end, the EPA released guidance on November 19, 2001, for the preparation of an integrated List of Waters that could combine reporting elements of both 305(b) and 303(d) of the CWA. The integrated list format allows the states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories:

1) Unimpaired and not threatened for all designated uses; 2) Unimpaired waters for some uses and not assessed for others; 3) Insufficient information to make assessments for any uses; 4) Impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water-bodies 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). The Herring and North Rivers are listed in the 2008 Massachusetts Integrated List in Category 5, for pathogens. The WWTP had two average monthly exceedances and four maximum day exceedances of the fecal coliform limits during the 24 month period from March 1, 2009 through February of 2011.

OUTFALL 001 - POLLUTANTS

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$) and Total Suspended Solids (TSS) – The total BOD of a wastewater is composed of two components – a carbonaceous oxygen demand and a nitrogenous oxygen demand. Due to the slow growth rates of the nitrifying organisms that exert the nitrogenous demand, it is normally assumed that no nitrogenous demand is exerted during the 5-day BOD_5 test. Because this WWTP is designed to remove nitrogen, nitrifying organisms are cultivated in the treatment process and exerted in the five day BOD test. The $CBOD_5$ test includes the addition of a chemical that inhibits the growth of nitrifying organisms, thus measuring only the carbonaceous oxygen demand. Nitrogenous oxygen demand in the facility's discharge is controlled through effluent limits on total nitrogen.

The draft permit carries forward the average monthly and average weekly limits, and the maximum daily reporting requirements found in the previous permit. The draft permit includes average monthly and average weekly $CBOD_5$ and total suspended solids (TSS) concentration limits originating from the model used in a facility planning study (1995[b]). The model recommended limits of 10 mg/l average monthly and 15 mg/l average weekly for both $CBOD_5$ and TSS. The maximum daily reporting requirements were included by request of the MassDEP in the last permit and continue to be a requirement in this permit. The $CBOD_5$ and TSS average monthly 85% percent removal limitations are based on requirements found at 40 CFR §133.102(b).

The draft permit also includes average monthly mass limitations (lbs/day) for both $CBOD_5$ and TSS based upon design flow and the average monthly concentration limits (mg/l). The loading limits are carried forward from the current permit. In its Section 401 State Water Quality Certification letter, dated November 2, 2004, MassDEP stated that the loading requirements are based on Surface Water Quality Standards Antidegradation provisions found at 314 CMR4.04(1). The pounds per day limits are calculated using the annual average design flow of 1.6 mgd.

The frequency of monitoring for $CBOD_5$ and TSS remains at 1/week.

$CBOD_5$ and TSS Mass Loading Calculations:

Calculations of allowable loads for both average monthly $CBOD_5$ and TSS are based on the following equation:

L = C x DF x 8.34 where:

L = Maximum allowable load in lbs/day.
C = Maximum allowable effluent concentration for reporting period in mg/l. Reporting periods are average monthly and weekly and daily maximum.
DF = Design flow of facility in MGD.
8.34 = Factor to convert effluent concentration in mg/l and design flow in MGD to lbs/day.

[b] (WQONN: Water Quality of Networks/Nutrient Version; reference: Harleman et al 1977)

(Concentration limit) [10] X 8.34 (Constant) X 1.6 (design flow) = 133 lb/day

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). Class SA waters shall be in a range of 6.5 through 8.5 standard units and not more than 0.2 standard units outside of the normally occurring range [314 CMR 4.04 (4)(a)3]. There shall be no change from background conditions that would impair any use assigned to this class.

Bacteria limits - Fecal Coliform Bacteria and *Enterococci* Bacteria. The effluent limits for bacteria are based on the Massachusetts Surface Water Quality Standards (MSWQS) for Class SA waters, as promulgated in 2006 and approved by EPA in 2007.

Fecal Coliform Bacteria - The MSWQS (314 CMR § 4.05(4)(a)4) require that in SA waters designated for shellfishing: "fecal coliform shall not exceed a geometric mean Most Probable Number (MPN[c]) of 14 organisms per 100 ml, nor shall more than 10% of the samples exceed a 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*."

The monthly average limit in the current permit (14 cfu/100 ml) is consistent with the current MSWQS and has been retained in the draft permit. The maximum daily limit in the current permit is 43 cfu/100 ml, which was based on previous Massachusetts Water Quality Standards for waters designated for shellfishing, and are less stringent than the criteria in the current Massachusetts water Quality Standards (28 MPN/100 ml). Accordingly, the maximum daily limit in the draft permit has been lowered to 28 cfu/100 ml.

The monitoring frequency (3/week) proposed in the draft permit is the same as in the current permit.

Enterococci Bacteria - MassDEP added new criteria to its surface water quality standards for bacteria in a revision to the Massachusetts Surface Water Quality Standards (314 CMR 4.00) on December 29, 2006. EPA approved the changes to the bacteria criteria on September 19, 2007. The criteria require that no single *Enterococci* sample exceed 104 colonies per 100 ml and that geometric mean of all samples taken within the most recent six months 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/100ml as appropriate for setting the maximum daily limit for *Enterococci* in the draft permit.

EPA has established monthly average (geometric mean) effluent limit of 35 cfu/100ml and daily maximum effluent limit of 276 cfu/100ml for *Enterococci* in the draft permit in order to ensure that the discharge does not cause or contribute to exceedances of Massachusetts Surface Water Quality Standards found at 314 CMR 4.05 (4)(a)4b. Sampling is required three times per week.

[c] Under the MPN method, gasses expelled by coliform colonies are collected in fermentation tubes. The number of tubes testing positively (gas is collected) or negatively (no gas is collected) is interpreted statistically to yield the most probable number. Under the CFU method, coliform colonies are grown on filter paper that is used to strain effluent. The method provides a direct visual measure of coliform counts. Both methods are approved EPA methods under 40 CFR Part 136 and give the same results.

Dissolved Oxygen (DO) – The dissolved oxygen limit in the draft permit is ≥6.0 mg/l in accordance with Massachusetts Surface Water Quality Standards 314 CMR 4.05 (4)(a)(1) for Class SA water.

Total Copper, Total Zinc, and Total Nickel

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 contribute to an excursion above any water quality criterion (40 CFR §122.44(d)). Copper, zinc, and nickel are toxic to aquatic life at low concentrations. Recent effluent monitoring data were evaluated against the criteria to determine if there is a reasonable potential for metals in the effluent to cause or contribute to a violation of water quality standards. Dilution was not considered because under certain tidal conditions there is no dilution flow available. EPA and MassDEP compared the criterion maximum concentration (CMC), or acute criteria, and the criterion continues concentration (CCC), or chronic criteria, to effluent metals concentrations. The highest reported discharge concentrations (See Fact Sheet Attachment A) for total copper, zinc, and nickel were each found to be higher than the applicable water quality criteria, and therefore, must be limited in the draft permit.

The criteria found in EPA's *National Recommended Water Quality Criteria:2002* were published in the Federal Register in November 2002 (EPA-822-R-02-047). Pollutant-specific conversion factors (CF) are used for converting a metal criterion expressed as a total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column. The conversion factors for each of the metals are listed in the Federal Register notice and subsequent correction. 40 CFR §122.45(c) requires that permit limits be expressed as total recoverable metal. See the following table and subsequent limit calculations.

Parameter	Dissolved Criteria CMC ug/l (Acute)	Dissolved Criteria CCC ug/l (Chronic)	Translator	Total Criteria CMC ug/l	Total Criteria CCC ug/l	Highest[d] Reported Discharge Concentration
Total Copper	4.8	3.1	0.83	**5.8**	**3.7**	**14**
Total Nickel	74	8.2	0.990	**74.7**	**8.3**	**16**
Total Zinc	90	81	0.946	**95**	**86**	**120**

(Note: A translator for CCC is not available; EPA uses CMC translator for both CCC & CMC)

The calculations for the criteria and limits are as follows:

- Chronic criteria (CCC) for dissolved copper = 3.1 ug/l
- conversion factor for dissolved versus total recoverable copper = 0.83
- 3.1 ug/l/0.83 equivalent value to total recoverable copper is = 3.7 ug/l ≈ 4 ug/l

[d] During the 24 month period of March 1, 2009 through February of 2010, as found in Scituate Discharge Monitoring Reports

- Acute criteria (CMC) for dissolved copper = 4.8 ug/l
- conversion factor for dissolved versus total recoverable copper = 0.83
- 4.8 ug/l/0.83 equivalent value to total recoverable copper is = 5.8 ug/l ≈ 6 ug/l

The average monthly limit for total recoverable copper based on the chronic water quality criteria will be 4 ug/l and the maximum daily limit, based on the acute criteria, will be 6 ug/l. These limits are the same as those in the current permit.

EPA Administrative Order (AO) number 07-038 was issued to the Town of Scituate on September 26, 2007 to address total copper limits violations. In addition to measures to decrease the discharge of copper from the WWTP, the AO sets an average monthly interim limit of 20 ug/l. The discharge consistently achieves the interim limit.

The average monthly limit for total recoverable nickel based on the chronic water quality criteria will be 8 ug/l, with no maximum daily limit.

- Chronic criteria (CCC) for dissolved nickel = 8.2
- conversion factor for dissolved versus total recoverable nickel = 0.990
- 8.2 ug/l/0.990 equivalent value to total recoverable nickel is = 8.3 ug/l ≈ 8 ug/l

- Acute criteria (CMC) for dissolved nickel = 74 ug/l
- conversion factor for dissolved versus total recoverable nickel = 0.990
- 74 ug/l/0.990 equivalent value to total recoverable nickel is = 74.7 ≈75 ug/l

Scituate has exceeded the average monthly discharge limit for nickel twice during the period of March 1, 2009 through February of 2010. The current limit is retained in the draft permit.

The average monthly limit for total recoverable zinc based on the chronic water quality criteria will be 86 ug/l and the maximum daily limit, based on the acute criteria, will be 95 ug/l.

- Chronic criteria (CCC) for dissolved zinc = 81 ug/l
- conversion factor for dissolved versus total recoverable zinc = 0.946
- 81 ug/l/0.946 equivalent value to total recoverable zinc is = 86 ug/l

- Acute criteria (CMC) for dissolved zinc = 90 ug/l
- conversion factor for dissolved versus total recoverable zinc = 0.946
- 90 ug/l/0.946 equivalent value to total recoverable zinc is = 95 ug/l

Scituate has exceeded the average monthly discharge limit for total zinc once during the period of March 1, 2009 through February of 2010. The current limit is retained in the draft permit.

Total nitrogen limits are carried forward in this draft permit, from the current permit. The efficacy of the TN limit in the permit issued January 30,1997, was raised by Alvin Firman of CDM, during a meeting with the representatives of the Town of Scituate, EPA, and MassDEP, held on April 9, 2003. The purpose of the meeting was to discuss conditions to be implemented in the forthcoming draft NPDES permit. Mr. Firman used the Town of Wareham, MA, Water Pollution Control Facility Permit (MA0101893) as an example, as CDM was also consulting with Wareham on the same nitrogen issue.

Mr. Firman asserted that a portion of the TN measured in the TN test is refractory, or resistant to treatment and not readily bioavailable. This non-reactive residual inorganic nitrogen accounted

for 1-1.5 mg/l of the TN measured in the effluent. The 39.5 lbs/day annual rolling average TN in the Scituate permit is based on a TN concentration limit of 3 mg/l at the flow limit of 1.6 MGD.

To prevent detrimental effect to the estuary, the future nitrogen loading to the estuary would remain at the existing level of 39 lbs/d. Based on an average design flow of 1.6 mgd, a total nitrogen concentration of 3 mg/l in the effluent is required to maintain the existing nitrogen load. [The Final Facilities Plan and Environmental Impact Report for Wastewater Management Volume I - Final Facilities Plan, March 1, 1995, Metcalf and Eddy, Page 1-7-7]

The recalculated mass limit of 53 lbs/day for TN in the November 22, 2004 Scituate permit is defined in the March 24, 2003 MEDEP anti-degradation evaluation which says in part:

The permit limit was raised from 39.5 lbs/day to 53.0 lbs/day total nitrogen [which includes approximately 1.0-1.5 mg/l of low reactive, less available soluble, organic nitrogen]. It is the opinion of the Department that the change from 39.5 lbs/day to 53.0 lbs/day will not result in a lowering of water quality [due to the low availability of the organic nitrogen] and is acceptable within the anti-degradation provisions of 314 CMR 4.04

The 4.0 mg/l total nitrogen (TN) concentration limit in both the Scituate and Wareham permits are technology based and reflect the MADEP "highest and best practical level of treatment" under 314 CMR 4.04(5).

The mass limits serve to protect the watershed from an increase in the nitrogen discharged above that measured prior to the plant upgrade and the concentration limit serves to set level of performance ("highest and best") for the treatment system. During extended periods when the plant flow is below the 1.6 MGD limit, the permittee could operate the denitrification inefficiently in the absence of a concentration limit. Conversely, if the mass limit is eliminated, extended flows above the 1.6 MGD limit may result in a discharge of TN above pre-upgrade level counter the State antidegradation provisions.

Whole Effluent Toxicity (WET) Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria: "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife" [314 CMR § 4.05(5)(e)].

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 (LC50) limitation. (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", March, 1991.)

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 synergistic effect of the pollutants in the discharge does 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 the tidal creek and into the Herring River in amounts which would affect aquatic or human life.

Consistent with the EPA/MassDEP policies, an LC_{50} limit of ≥100% and a chronic NOEC limit of 100 percent have been included in the draft permit. The LC50 limit is the recommended limit for facilities with dilution factors less than 10, and the chronic NOEC limit is established at the receiving water concentration of one hundred percent (i.e. no dilution)

The draft permit carries forward a monitoring frequency of four chronic (modified acute) tests per year using two species. The required species are Mysid Shrimp (*Mysidopsis bahia* or *Americamysis bahia*) and Sea Urchin (Arbacia punctulata) in accordance with existing permit conditions, and are to be conducted in accordance with the EPA Region I Toxicity protocol found in the permit Attachment A.

As a condition of this permit, the testing requirements may be reduced if certain conditions are met. The permit provision anticipates that the permittee may wish to request a reduction in the WET testing. After four consecutive WET tests, demonstrating compliance with the permit limits for whole effluent toxicity, the permittee may submit a written request to the EPA seeking a review of toxicity test results. The EPA will review the test results and pertinent information to make a determination. The permittee is required to continue testing at the frequency and species specified in the permit until the permit is either formally modified or until the permittee receives a certified letter from the EPA indicating a change in the permit conditions.

V. SEWER SYSTEM OPERATION AND MAINTENANCE

EPA regulations set forth a standard condition for "Proper Operation and Maintenance" that is included in all NPDES permits. See 40 CFR § 122.41(e). This condition is specified in Part II.B.1 (General Conditions) of the draft permit and it requires the proper operation and maintenance of all wastewater treatment systems and related facilities installed or used to achieve permit conditions.

EPA regulations also specify a standard condition to be included in all NPDES permits 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 draft permit and it requires permittees to take all reasonable steps – which in some cases may include operations 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. There is presently estimated to be approximately 659,000 gpd of (I/I) in the sewer system. MassDEP has stated that the inclusion in NPDES permits of I/I control conditions is a standard State Certification requirement under Section 401 of the CWA and 40 CFR § 124.55(b).

Therefore, specific permit conditions have been included in Part I.B. and I.C.of the draft permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling infiltration and inflow to the extent necessary to prevent SSOs and I/I related-effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary. These requirements are intended to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the draft permit are not included in the current permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules for completing these requirements in the draft permit.

VI. SLUDGE INFORMATION AND REQUIREMENTS

The WWTP produces 164.21 dry metric tons of sludge per year. The Scituate WWTP has its sludge cake hauled off-site by Wastestream Environmental US Liquids – Northeast. The sludge cake is transported to Soil Preparation, Inc. of Plymouth, Maine for composting.

The draft permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards and the 40 CFR Part 503 regulations. In addition, EPA Region I has prepared a 72-page document entitled "EPA Region I NPDES Permit Sludge Compliance Guidance, November 1999" for use by the permittee in determining the appropriate sludge conditions for the chosen method of sewage sludge use or disposal practices. 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

If the ultimate sludge disposal method changes, the permittee must notify EPA and MassDEP and the requirements pertaining to sludge monitoring and other conditions would change accordingly

VII. ANTI-BACKSLIDING

Anti-backsliding as defined at 402(o) of the CWA and 40 CFR §122.44(l)(1) requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit except under certain circumstances including those defined Section 402 and 303(d) of the CWA and 40 CFR § 122.44 (l).

VIII. ANTI-DEGRADATION

The Massachusetts Anti-degradation Policy is found at Title 314 CMR 4.04. All existing uses of Massachusetts Bay/Atlantic Ocean must be protected.

This draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage and no change in outfall location and is consistent with the state anti-degradation policy.

IX. UNAUTHORIZED DISCHARGES

The permittee is not authorized to discharge wastewater from any pump station emergency overflow. Overflows must be reported in accordance with reporting requirements found in Section D.1.e. of Part II of the permit (24-hour reporting). If a discharge does occur, the permittee must notify the EPA, the MassDEP, and others, as appropriate (i.e. local Public Health Department), both orally and in writing as specified in the draft permit.

X. 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 Fisheries Services (NOAA Fisheries) if EPA's action or proposed action that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH). The Amendments broadly define essential fish habitat as: waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 U.S.C. §1802 (10)). Adversely impact means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for 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.

As the federal agency charged with authorizing the discharge from this facility, EPA will provide a copy of the Draft Permit and this Fact Sheet to NOAA Fisheries Habitat Division to satisfy EPA's consultation responsibilities regarding EFH.

The following is a list of the EFH species and applicable life stage(s) for the area that includes Atlantic Ocean waters around Scituate, MA.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (*Gadus morhua*)	X	X	X	X
haddock (*Melanogrammus aeglefinus*)	X			
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)	X	X	X	X
red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X
winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Limanda ferruginea*)	X		X	X
windowpane flounder (*Scophthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)	X	X	X	X
ocean pout (*Macrozoarces americanus*)	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
monkfish (*Lophius americanus*)	X	X		X
bluefish (*Pomatomus saltatrix*)			X	X
long finned squid (*Loligo pealeii*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
summer flounder (*Paralichthys dentatus*)				X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristis striata*)	n/a		X	X
surf clam (*Spisula solidissima*)	n/a	n/a	X	X
ocean quahog *(Artica islandica*)	n/a	n/a		
spiny dogfish (*Squalus acanthias*)	n/a	n/a		X

T

The species in the table above are the only managed species believed to be present during one or more life stages within the area which encompasses the discharge site. No "habitat areas of particular concern", as defined under §600.815(a)(9) of the Magnuson-Stevens Act, have been designated for this site.

It is EPA's opinion that the operation of this facility, as governed by this permit action, is not likely to adversely affect the species of concern or its habitat for the following reasons:

- All conditions in this draft permit are as stringent as the previous permit. The current and previous dilution calculation for toxic pollutants are based on the premise there is no dilution of the effluent.
- The draft permit includes both *Enterococci* and fecal coliform bacteria limits, based on state water quality standards modified in 2007 and found at 314 CMR 4.05.(4)(a)(4). *Enterococci* bacteria limits shall be added to the existing fecal coliform bacteria requirements.
- The facility withdraws no water and therefore has no water intake structure in operation. No impingement or entrainment impacts to EFH species are associated with this proposed permit action.
- The permit contains requirements to comply with all state water quality standards for the protection of fish and fish habitat.

EPA Finding

EPA believes that the draft permit limits adequately protect the EFH species, and therefore additional mitigation is not warranted. If adverse impacts to EFH are detected as a result of this permit action, or if new information is received that changes the basis for our conclusion, NOAA Fisheries will be notified and an EFH consultation will be reinitiated.

XI. ENDANGERED SPECIES ACT

Endangered Species Act

Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended 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 (NOAA Fisheries) 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 see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit.

According to the Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program list of rare species by Town, there is only one federally listed threatened species in Scituate, the Piping Plover, (*Charadrius melodus*)[e].

The U.S. Fish and Wildlife Service, Endangered Species Program[f] lists, the following species for Plymouth County; Piping Plover (*Charadrius melodus*), Leatherback sea turtle (*Dermochelys coriacea*), Green sea turtle (*Chelonia mydas*), Loggerhead sea turtle (*Caretta caretta*), Plymouth Red-Bellied Turtle (*Pseudemys rubriventris bangsi*). The Piping Plover nests and feeds along coastal sand and gravel beaches, such habitat is not in immediate proximity to the discharge. The sea turtles can be found primarily in the open ocean, or open embayments. The thin tidal stream and shallow Herring River are not well suited for sea turtles. The Plymouth Red-Bellied Turtle is a fresh water species. The permit limits do not allow any dilution for toxic pollutants so that the effluent must meet the ambient water quality criteria at the point of discharge. Pollutants will be diluted to the point they are undetectable before the effluent will reach potential turtle habitat.

[e] http://www.mass.gov/dfwele/dfw/nhesp/species_info/town_lists/town_q.htm
[f] http://ecos.fws.gov/tess_public/countySearch!speciesByCountyReport.action?fips=25023

EPA Finding

EPA believes the proposed limits are sufficiently stringent to assure that water quality standards will be met and to ensure protection of aquatic life and maintenance of the receiving water as an aquatic habitat. The Region finds that adoption of the proposed permit is unlikely to adversely affect any threatened or endangered species or its critical habitat. If adverse effects do occur as a result of this permit action, or if new information becomes available that changes the basis for this conclusion, then EPA will notify and consultation will be promptly initiated with both the USFWS and the NOAA Fisheries. A copy of the Draft Permit has been provided to both USFWS and NOAA Fisheries for review and comment.

XII. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW

40CFR §122.49 (d) states: *The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water use 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).*

The discharge is within the defined CZM boundaries. The permittee shall submit a letter to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies.

XIII. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§ 122.41 (j), 122.44 (l), and 122.48. The monitoring program in the permit specifies routine sampling and analysis which will provide continuous information on the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures are to be found in 40 CFR 136 unless other procedures are explicitly required in the permit.

The draft permit includes new provisions related to Discharge Monitoring Report (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 ("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 CWA permittees to submit 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 availability 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 NetDMR, 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.

XIV. STATE PERMIT CONDITIONS

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively. As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the MassDEP.

XV. GENERAL CONDITIONS

The general conditions of the permit are based primarily on the NPDES regulations 40 CFR 122 through 125 and consist primarily of management requirements common to all permits.

XVI. STATE CERTIFICATION REQUIREMENTS

Under CWA section 401(a)(1), EPA may not issue a permit unless the MassDEP either certifies that the effluent limitations contained in this permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards or waives its right to such a certification. EPA has requested that MassDEP certify the permit. EPA expects that the permit will be certified. Regulations governing state certification are set forth in 40 CFR §§ 124.53 and 124.55.

XVII. COMMENT PERIOD, HEARING REQUESTS, and PROCEDURES FOR FINAL DECISIONS

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 Mr. Doug Corb, U.S. Environmental Protection Agency, Region 1 (New England), 5 Post Office Square - Suite 100, Mail Code OEP06-1, Boston, MA 02109-3912.

Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the draft permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR § 124.19.

XVIII. EPA CONTACT

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

Doug Corb
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U.S. Environmental Protection Agency
5 Post Office Square Suite 100
Mail Code OEP06-1
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Cathy Vakalopoulos
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Wastewater Management Program
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Boston, MA 02108
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Fax: (617) 292-5696
Catherine.Vakalopoulos@state.ma.us

Date: October 4, 2011
Stephen S. Perkins, Director *
Office of Ecosystem Protection
U.S. Environmental Protection Agency

*Please address all comments to Doug Corb and Cathy Vakalopoulos at the addresses above.

Scituate Wastewater Treatment Plant
MA0102695-Fact Sheet Attachment A

Month	Flow	Flow	CBOD5	CBOD5	CBOD5	CBOD5 % Removal	TSS	TSS	TSS	TSS	TSS % Remova	Disolved Oxygen
	1.6 Mgal/d	Mon Mgd/D	133 lb/d	15 mg/L	Mon mg/L	Min 85%	133 lb/d	10 mg/L	15 mg/L	Mon mg/L	Min 85%	6 mg/L
MP Date	ROLL AVG	DAILY MX	MO AVG	WKLY AVE	DAILY MX	MO AV MN	MO AVG	MO AVG	WKLY AVE	DAILY MX	MO AV MN	MO AV MN
03/31/09	1.269	2.255	36.3	5.6	5.6	97.4	43.8	3.5	4.4	5.	97.5	6.4
04/30/09	1.307	2.723	37.	3.05	3.3	97.5	36.2	2.5	4.7	4.7	97.9	6.4
05/31/09	1.32	1.83	47.	5.	6.3	96.4	23.5	2.1	2.9	3.3	98.5	6.3
06/30/09	1.329	1.268	34.6	4.9	6.4	97.3	23.5	**32.**	3.65	4.5	98.5	6.3
07/31/09	1.367	3.066	30.2	3.4	3.4	98.3	38.9	3.6	7.3	7.3	98.4	6.3
08/31/09	1.389	2.245	55.6	7.	8.5	95.6	51.56	5.2	7.	8.5	96.6	6.1
09/30/09	1.399	1.815	29.8	4.65	4.9	97.4	30.8	3.1	4.45	6.1	97.9	6.3
10/31/09	1.411	2.069	34.6	3.7	3.7	97.4	47.	3.8	5.8	5.8	97.3	6.1
11/30/09	1.424	1.617	23.4	3.9	3.9	97.9	25.6	2.4	2.9	3.8	98.3	6.2
12/31/09	1.289	2.278	19.1	1.6	2.3	98.4	26.	1.9	3.2	3.2	98.1	6.2
01/31/10	1.4	2.398	49.8	5.3	5.5	96.6	33.6	2.5	3.6	4.8	98.	6.1
02/28/10	1.4	3.05	37.8	3.35	3.8	97.4	38.7	3.1	4.35	5.5	97.4	6.3
03/31/10	1.492	3.897	82.8	7.6	7.8	94.8	87.1	4.	8.	10.7	95.4	6.2
04/30/10	1.499	3.64	39.7	6.3	6.3	96.9	24.4	1.6	2.	2.3	98.7	6.4
05/31/10	1.475	1.296	28.2	6.1	6.1	98.	19.4	2.2	3.8	3.8	98.6	6.3
06/30/10	1.461	1.015	23.7	4.3	4.6	97.9	33.4	4.3	5.4	5.8	98.2	6.4
07/31/10	1.416	.87	12.7	3.4	4.4	98.8	31.7	5.	12.7	12.7	98.2	6.2
08/31/10	1.385	1.388	18.4	3.2	5.2	98.7	29.4	4.3	5.1	7.3	98.2	6.2
09/30/10	1.355	1.3	17.4	4.3	4.3	98.6	27.9	4.	6.	7.1	98.4	6.3
10/31/10	1.309	1.385	26.1	7.4	11.	97.1	34.5	4.5	10.25	13.5	98.	6.2
11/30/10	1.291	1.5	29.2	4.2	4.2	97.8	39.8	4.5	8.9	9.8	97.7	6.3
12/31/10	1.257	2.861	65.	8.6	8.6	95.9	37.1	3.6	4.5	5.8	98.3	6.3
01/31/11	1.237	1.871	59.3	6.35	10.3	94.5	30.8	2.7	2.85	4.	97.8	6.4
02/28/11	1.253	1.871	88.2	7.3	8.2	93.8	28.5	2.	3.55	4.4	98.8	6.3

Permit exceedances are in bold (red) print

Scituate Wastewater Treatment Plant
MA0102695-Fact Sheet Attachment A

Month	TSS	TSS	TSS	TSS % Removal	Fecal Coliform	Fecal Coliform	Total Copper*	Total Nickel	Total Zinc	pH	pH
	133 lb/d	10 mg/L	15 mg/L	Min 85%	14 CFU/100mL	43 CFU/100mL	20 ug/L	8 ug/L	86 ug/L	6.5 SU	8.5 SU
MP Date	MO AVG	MO AVG	WKLY AVE	MO AV MN	GEO MEAN	DAILY MX	MO AVG	MO AVG	MO AVG	MINIMUM	MAXIMUM
03/31/09	43.8	3.5	4.4	97.5	.15	1.75	10.	4.	80.	6.3	7.1
04/30/09	36.2	2.5	4.7	97.9	.33	10.5	7.	4.	80.	6.5	7.1
05/31/09	23.5	2.1	2.9	98.5	.35	4.25	4.	4.	80.	6.6	7.4
06/30/09	23.5	32.	3.65	98.5	.53	16.25	11.	4.	80.	6.9	7.5
07/31/09	38.9	3.6	7.3	98.4	1.06	11.5	13.	4.	80.	6.6	7.5
08/31/09	51.56	5.2	7.	96.6	2.9	34.8	10.	4.	80.	6.8	7.4
09/30/09	30.8	3.1	4.45	97.9	1.6	31.5	8.	4.	80.	6.8	7.5
10/31/09	47.	3.8	5.8	97.3	3.3	TNTC	8.	4.	80.	7.	7.6
11/30/09	25.6	2.4	2.9	98.3	.09	.5	5.	4.	80.	7.	7.6
12/31/09	26.	1.9	3.2	98.1	.02	.25	7.	7.	80.	6.9	7.3
01/31/10	33.6	2.5	3.6	98.	.05	.5	6.	8.	120.	6.9	7.5
02/28/10	38.7	3.1	4.35	97.4	.06	.25	13.	16.	80.	6.8	7.6
03/31/10	87.1	4.	8.	95.4	.14	.75	14.	14.	60.	6.4	7.4
04/30/10	24.4	1.6	2.	98.7	.17	3.5	4.	5.	50.	6.3	7.5
05/31/10	19.4	2.2	3.8	98.6	.85	13.25	5.	5.	50.	7.1	7.7
06/30/10	33.4	4.3	5.4	98.2	TNTC	TNTC	6.	4.	50.	7.1	7.9
07/31/10	31.7	5.	12.7	98.2	TNTC	TNTC	4.	1.	5.	7.1	7.9
08/31/10	29.4	4.3	5.1	98.2	3.	53.	6.	5.	60.	7.2	7.9
09/30/10	27.9	4.	6.	98.4	.7	3.1	5.	1.	19.	7.3	7.9
10/31/10	34.5	4.5	10.25	98.	1.3	19.9	5.	1.	28.	7.1	8.1
11/30/10	39.8	4.5	8.9	97.7	.79	18.8	5.	1.	7.	7.4	7.7
12/31/10	37.1	3.6	4.5	98.3	.94	18.2	5.	1.	26.	6.8	7.8
01/31/11	30.8	2.7	2.85	97.8	1.4	89.1	6.	1.	36.	7.	7.9
02/28/11	28.5	2.	3.55	98.8	.1	1.4	6.	1.	27.	6.6	7.6

*See Administrative order

TNTC = To numerouse to count

	Total Nitrogen	Total Nitrogen	Total Nitrogen	LC50 Static 48Hr Acute Menidia		Noel 1Hr Fert Chr Arbacia	Noel Chro Menidia
	53 lb/d	**4 mg/L**	**Mon. mg/L**		**100%**	**100%**	**100%**
MP Date	**ROLL AVG**	**MO AVG**	**DAILY MX**	**MP Date**	**DAILY MN**	**DAILY MN**	**DAILY MN**
03/31/2009	28.6	2.5	3.2	**01/31/2009**	100.	100.	100.
04/30/2009	28.8	1.9	5.6	**04/30/2009**	100.	100.	100.
05/31/2009	29.5	3.3	5.9	**07/31/2009**	100.	100.	**12.5**
06/30/2009	30.7	**5.6**	19.5	**10/31/2009**	100.	100.	100.
07/31/2009	31.3	3.5	5.7	**01/31/2010**	100.	100.	100.
08/31/2009	31.	2.7	3.7	**04/30/2010**	100.	100.	100.
09/30/2009	31.6	3.	5.5	**07/31/2010**	100.	100.	100.
10/31/2009	30.5	2.1	3.	**10/31/2010**	100.	100.	100.
11/30/2009	30.	1.9	3.5	**01/31/2011**	100.	100.	100.
12/31/2009	31.3	3.	5.6				
01/31/2010	32.	2.8	5.				
02/28/2010	31.6	2.6	3.4				
03/31/2010	33.7	2.6	3.5				
04/30/2010	**35.3**	3.1	4.5				
05/31/2010	34.6	3.1	4.1				
06/30/2010	33.3	**4.9**	16.1				
07/31/2010	31.5	1.7	3.				
08/31/2010	30.7	2.6	3.3				
09/30/2010	29.2	2.	2.9				
10/31/2010	28.1	1.5	2.7				
11/30/2010	27.4	1.2	1.5				
12/31/2010	25.4	1.8	3.3				
01/31/2011	24.1	1.6	2.7				
02/28/2011	24.	2.1	2.3				

PROCESS FLOW SCHEMATIC

INFLUENT SAMPLER
LOOP NO. 110
LOOP NO. 100
CHANNEL
SCREENINGS
SLUICE GATE
MECHANICAL SCREEN
CHANNEL
HAND SCREEN
CHANNEL
36" INF-DI
3/8" SA-PVC
LE 101-01
EXISTING INFLUENT WETWELL
LE 101-02
SODIUM HYPOCHLORITE M-12
3/4" SHC CPVC
BELT FILTER PRESS FILTRATE M-26
AEROBIC DIGESTER DECANT C-4
EFFLUENT FILTER BACKWASH C-4
EMERGENCY EFFLUENT STORAGE C-4
LOOP NO. 102-01
LOOP NO. 102-02
LOOP NO. 102-03
LOOP NO. 102-04
12" INF (E)
PUMP NO 1
PUMP NO 2
PUMP NO 3
PUMP NO 4
INFLUENT PUMPS
10" INF (E)
12" INF
12"GV
10"INF-DI
10"GV
10"CV
FE/FIT 103
M
14" INF (E)
14" INF-DI
SODA ASH M-8
1" SAS-PVC
BY-PASS CHANNEL
24" INF-DI
14" INF-DI
AERATED GRIT TANK
AERATED GRIT TANK AIR M-5
2½" LPA-SS
C-4 TO INFLUENT WETWELL
8"TKD-DI
LOOP NO. 130
DISTRIBUTION BOX
ADJUSTABLE WEIR
WEIR SLIDE GATE
10" RAS-DI
FE/FIT 140
24"INF - DI
AERATION TANK NO 4
AERATION TANK NO 1
AERATION TANK NO 2
AERATION TANK NO 3
AERATION BASIN AIR M-5
AERIBIC SELECTOR
AE 200-01
AE 200-02
AE 200-03
AE 200-04
AE 200-05
AE 200-06
D.O.
12"LPA-SS
16"LPA-SS
INFLUENT CHANNEL
BY-PASS
CHANNEL (E)
20" ML-DI
14" ML-DI (TYP)
14" PV (TYP)
EXISTING SETTLING TANK NO.1
EXISTING SETTLING TANK NO.2
SETTLING TANK NO.3
LOOP NO. 210-01
LOOP NO. 210-02
LOOP NO. 210-03
SE (E)
6" SC (E)
21" SE-RIC (E)
24" SE-DI
20" SE-DI
24"x18"WYE TYP.
18" PV
12" PV
18"SE-DI
12"SE-DI
2"SE-DI
10" SE-DI
INTER-MEDIATE WETWELL
LE 220-01
LE 220-02
10" FI-DI
LOOP NO. 221-01
LOOP NO. 221-02
LOOP NO. 221-03
PUMP NO 1
PUMP NO 2
PUMP NO 3
INTERMEDIATE PUMPS
AE 201
ALKALNITY
8" RAS (E)
6" SL-(E)
6" SL-DI
6" SC-(E)
6" SC-DI
LOOP NO. 232-02
LOOP NO. 230-03
LOOP NO. 230-02
LOOP NO. 230-01
LOOP NO. 232-01
4" WAS-DI
6" WAS-DI
SCUM/WAS PUMP NO. 2
RAS PUMP NO. 3
RAS PUMP NO. 2
RAS PUMP NO. 1
SCUM/WAS PUMP NO. 1
8" WAS - DI
6" WAS (E)
6" WAS-(E)
12" FI-DI
LE 240-02
EXISTING AEROBIC DIGESTER NO 2
EXISTING AEROBIC DIGESTER NO 1
EXISTING AEROBIC DIGESTER NO 3
LE 240-03
LE 240-01
6" D (E)
6" DS (E)
C-4 DECANT TO INFLUENT WETWELL
8" D (E)
C-4 TO AEROBIC DIBESTERS NO'S 1 & 2
PUMP NO 2
PUMP NO 3 (STAND-BY)
PUMP NO 1
LOOP NO. 250-03
LOOP NO. 250-01
LOOP NO. 250-02
EXISTING BELT FILTER PRESS FEED PUMPS
NEW BFP FEED PUMP
6" DS-DI
6" DS DI
6" DS-DI (E)
M-7 POLYMER SOLUTION
1 1/2" POL- SS (E)
1 1/2" POL- PVC
IN-LINE POLYMER VENTURI MIXER TYP. SEE DETAIL SHEET M-25 (TYP OF 2)
FE/FIT 222
LOOP NO. 251-01
LOOP NO. 251-02
BELT FILTER PRESS NO 1
BELT FILTER PRESS NO 2
M-26 BELT FILTER PRESS FILTRATE TO INFLUENT WET WELL
8" D - DI (E)
8" D - DI
EXIST DEWATERED SLUDGE HOPPER
SOLIDS TO DISPOSAL
M-7 SODIUM HYPOCHLORITE
FE 252
LOOP NO. 361-01
LOOP NO. 361-02
LOOP NO. 361-03
14" SHC CPVC
C-4 BFP BELT WASH WATER
4" EFW-DI
6" EFW-DI
C-4 EFFLUENT FLUSHING WATER TO DISTRIBUTION
FE 382
HYDRO-PNEUMATIC TANK
LOOP NO. 360
PACKAGE PLANT WATER PUMP SYSTEM
M-5 FILTER BACKWASH AIR
CV 308
EFFLUENT FILTER UNIT NO 1
EFFLUENT FILTER UNIT NO 2
EFFLUENT FILTER UNIT NO 3
EFFLUENT FILTER UNIT NO 4
14" FE-DI
14" WBW-DI (TYP)
8" LPA-SS
10" BWW-DI
18" FE-DI
12" FB-DI
EFFLUENT FILTERS
(FOR ADDITIONAL DETAILS SEE EFFLUENT FILTER SCHEMATIC SHEET M-6)
M-9 METHANOL
CV 310
14" WBW-DI
WASTE BACKWASH TO MUD WELL M-6
12" FI-DI
TO CLEARWELL M-6
EFFLUENT SAMPLER
LOOP NO. 350
NITRATE
AE 303
UV DISINFECTION
LOOP NO. 350
10" BWW-DI
M-6 BACKWASH WATER
POST AERATION AIR M-5
3/8" SA-PVC
2" LPA-SS
AE 375
D.O.
POST AERATION CHANNEL NO 1
POST AERATION CHANNEL NO 2
BAFFLE WALL (TYP)
FE/FIT 380
PARSHALL FLUME
20"FEFF-DI
20" FEFF-DI
DISCHARGE TO TIDAL DITCH C-4
20" ES-DI
TO EMERGENCY STORAGE C-4
NITRATE
AMMONIA
AE 281
AE 280
NOTE: NOT ALL EXISTING VALVES AND PIPING ARE SHOWN ON THIS PROCESS FLOW SCHEMATIC

REV. NO.	DATE	DRWN	CHKD	REMARKS

DESIGNED BY: T. GILARDE
DRAWN BY: W. DORSEY
SHEET CHK'D BY: T. GILARDE
CROSS CHK'D BY: T. GILARDE
APPROVED BY: A. FIRMIN
DATE: JUNE 1997

CDM Camp Dresser & McKee Inc.

TOWN OF SCITUATE, MASSACHUSETTS
WASTEWATER SYSTEM IMPROVEMENTS
CONTRACT NO. 96-WW-1

WATER POLLUTION CONTROL PLANT UPGRADE

PROJECT NO. 0585-10450
FILE NAME: MPRF0004

SHEET NO. M-4

PLOT DATE: 08-NOV-01

Accession No: 0585-56039

FIGURE 1
TOWN OF SCITUATE, MASSACHUSETTS

USGS LOCUS MAP

SCALE: 1:2500

D:\Scituate MA\WWTF NPDES Permit Renewal\USGS Locus Map.dwg

NPDES Permit - Response to Comments

On November 4, 2011, the United States Environmental Protection Agency ("**EPA**") and the Massachusetts Department of Environmental Protection ("**MassDEP**") (together, the "**Agencies**") released a draft permit for the Scituate Wastewater Treatment Plant ("**Scituate WWTP**"**)** for public comment. The public comment period ended on December 3, 2011. The Response to Comments below encompasses written comments submitted to EPA and MassDEP during the public comment period.

Copies of the final permit may be obtained by writing or calling EPA's NPDES Municipal Permits Branch (OEP 06-1), Office of Ecosystem Protection, 5 Post Office Square, Suite 100, Boston, MA 02109-3912; Telephone: (617) 918-1565.

Comments were received from the Town of Scituate ("Town" or "Scituate") in a letter dated December 1, 2011 and a December 2, 2011 email from Kathleen Keohane of MassDEP.

Comments from the Town of Scituate
Comment No. 1:

> The Town of Scituate reviewed the draft permit and has the following comment: The town accepts the current average monthly and maximum daily Total Copper permit limits with the understanding that the interim limits set in the September 2007 Administrative Order will remain in effect for the life of the permit.

Response No. 1:

> Interim limits for copper could only be included in an NPDES permit in conjunction with a compliance schedule for attaining the final limit. While compliance schedules for water quality–based limitations are allowed under Massachusetts Water Quality Standards (see 314 CMR 4.03 (b), EPA does not believe that such a schedule is appropriate in this case, based on factors described in 40 CFR 122.47 and further considered in EPA guidance.[1] Among these factors are that the activities necessary for the permittee to comply "as soon as possible" with the final limits have not been provided by the permittee and are not known to EPA at this time, and that the proposed copper limits were included in the previous permit, meaning that the permittee had five years to achieve compliance with the limits.

[1] See *Compliance Schedules for Water Quality-Based Effluent Limitations in NPDES Permits* (www.epa.gov/npdes/pubs/memo_complianceschedules_may07.pdf)

In discussions with the Town, EPA has proposed to issue another administrative order to the facility that would include interim limits for copper. The order would require the Town to evaluate further steps it would take in the near term to optimize copper treatment, including an evaluation of the cause(s) of the elevated levels of copper in the WWTP discharge in 2011, and would also require actions to ultimately bring the copper discharge into compliance with the Clean Water Act, including the opportunity for the Town to pursue site-specific copper criteria with MassDEP (which if successful would justify a less stringent permit limit).

If this approach is not pursued or is unsuccessful, the order would then require the Town to evaluate and implement steps to comply with the copper limits in the final permit, either through further treatment or by relocating the discharge to a receiving water that would provide additional dilution. We anticipate that the schedule in the order will provide interim limits for the next permit term, but would require that either site-specific criteria achievable by the existing facility be in place, or that any facilities necessary to achieve water quality-based limits in the final permit are completed by the end of the permit term.

Comments from MassDEP

2) Section 401Certification:

In its Section 401 certification of the permit, the Massachusetts Department of Environmental Protection (MassDEP) included the following statement:

The Department recognizes that the permit condition at Part 1, Section C.4 is a new requirement and the 30 month compliance schedule in which to complete all collection system mapping may not be sufficient in all cases. Technical knowledge and capacity to perform this work may need to be supported initially to accomplish these goals, and some permittees may want to coordinate this work with separately required stormwater collection system mapping requirement expected during the permit term. Initial feedback from a variety of permittees indicated that 48 months may be needed to accomplish this task, aligning the results with the permit compliance evaluation cycle. The Department supports a deadline of 48 months to reasonably accomplish this task. However, if at any time before the current schedule has expired, the permittee determines compliance with the current schedule will not be met, the permittee may submit in writing a request to both agencies to change the deadline in accordance with the regulatory provisions of each agency through permit modification establishing an alternative schedule. Such request must include: a) specific reasons why the extension is necessary; b) documentation dating the progress made to date; c) a proposed alternative date for completing the work; and d) any other relevant information supporting the request for a modified schedule.

Response No. 2:

Section 401(a)(1) of the CWA requires all NPDES permit applicants to obtain a certification from the appropriate state agency validating the permit's compliance with the pertinent federal and state water pollution control standards. *See* CWA § 401(a)(1). The regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates. 40 C.F.R. § 124.53(a). The regulations further provide that "when certification is required…no final permit shall be issued…unless the final permit incorporates the requirements specified in the certification under §124.53(e)." 40 C.F.R. § 124.55(a).

Section 124.53(e) provides that the State certification shall include "any conditions more stringent than those in the draft permit which the State finds necessary to "assure compliance with, among other things, state water quality standards, 40 C.F.R. § 124.53(e)(2), and shall include "[a] statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law, including water quality standards," *id.* § 124.53(e)(3). Under 40 C.F.R. § 124.55(c), "a State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition."

EPA's "duty under CWA section 401 to defer to considerations of State law is intended to prevent EPA from *relaxing* any requirements, limitations, or conditions imposed by the State law." *In re City of Jacksonville,* 4 E.A.D. 150, 157 (EAB 1992); *In re City of Moscow,* 10 E.A.D. 135, 151 (EAB 2001); *accord In re Ina Rd. Water Pollution Control Facility,* 2 E.A.D. 99, 100 (CJO 100). EPA believes that the 30 month schedule for completing the required mapping included in the draft permit is reasonable and notes that there were no comments regarding this schedule submitted during the public comment period. The 30 month schedule has been included in the final permit.

EPA acknowledges that EPA's recent draft NPDES municipal stormwater general permit for affected Massachusetts municipalities contains storm sewer mapping requirements as a component of the illicit discharge detection and elimination program, and that municipalities may want to conduct storm sewer mapping in conjunction with sewer system mapping. Further, EPA generally agrees with MassDEP that if the permittee submits information showing that despite its best efforts it is unable to complete the required sewer system mapping within the specified period (e.g. if field work for both sewer system mapping and collection system mapping is longer than for mapping the sewer system alone), EPA may allow a reasonable extension of the schedule. However, EPA will not be inclined to grant extensions to municipalities that seek schedule extensions that are based on a delay in initiating collection system mapping because they were awaiting issuance of the municipal stormwater permit.

3) Other Changes

Between the public notice of the draft permit and the issuance of the final permit, EPA Region 1 updated its Marine Chronic (Modified Acute) Toxicity Protocol. The updated protocol has been attached to this final permit.