

**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), the

Town of Amesbury

is authorized to discharge from the facility located at

**Amesbury Water Pollution Abatement Facility
19 Merrimac Street
Amesbury, Massachusetts 01913**

to the receiving water named

the Merrimack River (Merrimack River Basin; State Code 84)

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

This permit will become effective on the first day of the calendar month following sixty (60) days after the date of signature.

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

This permit supersedes the permit issued on February 4, 2004 and modified on August 1, 2007.

This permit consists of 14 pages in Part I including effluent limitations, monitoring requirements, Attachment A. Marine Acute Toxicity Test Procedures and Protocol, Attachment B. Reassessment of Technically Based Industrial Discharge Limits, Attachment C. Industrial Pretreatment Program Annual Report, Attachment D. Sludge Compliance Guidance and, 25 pages in NPDES Part II. Standard Conditions.

Signed this 24th day of August 2010

/S/SIGNATURE ON FILE

Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- 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. Such discharge shall be limited and monitored by the permittee as specified below. Effluent samples shall be taken after the secondary clarifier and before the chlorine contact chamber for all parameters except TRC and bacteria. Effluent samples for total residual chlorine (TRC), fecal coliform bacteria and enterococci shall be taken after the chlorine contact chamber. All samples shall be representative of the effluent that is discharged through outfall 001.

| <u>Effluent Characteristic</u> | <u>Units</u> | <u>Effluent Limits</u> | | | <u>Monitoring Requirements</u> | |
|---|--------------|--|--------------------------|-------------------------|--|---------------------------------|
| | | Average <u>Monthly</u> | Average <u>Weekly</u> | Maximum <u>Daily</u> | <u>Measurement</u> <u>Frequency</u> | <u>Sample Type</u> ³ |
| Flow ² | MGD | 2.4 | ---- | ---- | Continuous | Recorder |
| Flow ² | MGD | Report | ---- | Report | Continuous | Recorder |
| BOD ₅ | mg/l | 30 | 45 | Report | 2/Week ⁴ | 24-Hour Composite ⁵ |
| | lbs/day | 600 | 901 | Report | 2/Week ⁴ | 24-Hour Composite ⁵ |
| TSS | mg/l | 30 | 45 | Report | 2/Week ⁴ | 24-Hour Composite ⁵ |
| | lbs/day | 600 | 901 | Report | 2/Week ⁴ | 24-Hour Composite ⁵ |
| pH ¹ | S.U. | 6.5 – 8.5 (See condition I.A.1.b. on Page 6) | | | 1/Day | Grab ⁵ |
| Dissolved Oxygen | mg/l | | Not less than 5.0 | | 1/Day | Grab ⁵ |
| Fecal Coliform ^{1,6,7} | cfu/100 ml | 88 | ---- | 260 | 1/Week | Grab ⁵ |
| Enterococci ^{1,6,7} | cfu/100 ml | 35 | ---- | 104 | 1/Week | Grab ⁵ |
| Total Residual Chlorine ^{6,8} LC ₅₀ ^{9,10,11} | mg/l | Report | ---- | 1.0 | 3/Day | Grab ⁵ |
| | | | | ≥ 50% | 2/Year | 24-Hour Composite ⁵ |

Footnotes:

1. Required for State Certification.
2. The flow 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.

The monthly average flow and the maximum daily flow shall be reported for each month on the discharge monitoring report (DMR).

3. All required effluent samples shall be collected at the point specified on page 2 of the permit. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every 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 DMR.

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

4. Sampling required for influent and effluent.
5. A 24-hour composite sample 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. Daily grab samples are collected during regular operating hours, Monday through Friday, 7:00 am to 3:00 pm.
6. The bacteria and total residual chlorine limits are in effect the entire year. The permittee shall monitor and report enterococci the first six months the permit is in effect. After six months, the effluent limits for enterococci apply.

Enterococci samples shall be taken concurrently with one of the required fecal coliform samples. Samples for fecal coliform bacteria and enterococci shall be taken at the same time as the total residual chlorine sample. The permittee shall achieve the enterococci limits in accordance with Part 1.E. of the permit. The monthly average limit for fecal coliform is expressed as a geometric mean. The units may be expressed as Most Probable Number (MPN) for samples tested using the MPN methods, or Colony Forming Units (CFUs) when using the Membrane Filtration methods.

7. The permittee shall notify the Division of Marine Fisheries, Shellfish Management Program within twenty-four hours of a plant failure or permit excursion of fecal coliform or enterococci. See Part I.I.1.c or the address.
8. Total residual chlorine monitoring is required whenever chlorine is added to the treatment process (i.e. TRC sampling is not required if chlorine is not added for disinfection or any other purpose).

The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the DMRs.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorine or dechlorination chemicals occurred.

9. The permittee shall conduct acute toxicity tests two times per year. The test may be used to calculate the acute LC₅₀ at the 48-hour exposure interval. The permittee shall test the *Americamysis bahia*. Toxicity test samples shall be collected during the second week of July and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due August 31 and November 30 respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A. Marine Acute Toxicity Test Procedures and Protocol** of this permit.

| Test Dates Second Week | Submit Results By: | Test Species | Acute Limit LC ₅₀ |
|------------------------------|--------------------------|--|---------------------------------|
| July October | August 31 November 30 | <u><i>Americamysis bahia</i></u> See Attachment A | ≥ 50% |

10. The LC₅₀ 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.

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, 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 maybe 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 Permit Program Instructions for the Discharge Monitoring Forms (DMR) which is sent to all permittees with their annual set of DMRs and may also be found on the EPA Region 1 web site at

<http://www.epa.gov/region1/enforcementandassistance/dmr.html>. If this guidance is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A. Marine Acute Toxicity Test Procedures and Protocol.**

When using alternate dilution water, the permittee shall continue to submit the results of chemistry tests for the all controls i.e., site water controls and lab water controls.

Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A. Marine Acute Toxicity Test Procedures and Protocol.**

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 at any time.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
 - f. 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 by March 31 of the following calendar year describing plans for further flow increases and discuss how the permittee will remain in compliance with the effluent limitations in the permit.
2. All POTWs must provide adequate notice to the Director of the following:
- a. any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and
 - b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. for purposes of this paragraph, adequate notice shall include information on:
 - (1) the quantity and quality of effluent introduced into the POTW; and
 - (2) any anticipated impact of the change on the quantity or quality of effluent to

be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass-Through:

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.

Where specific prohibitions or limits on pollutants or pollutant parameters are developed by a POTW in accordance with Section B. Limitations for Industrial Users and Section C. Industrial Pretreatment Program they shall be deemed Pretreatment Standards for the purposes of Section 307(d) of the Clean Water Act.

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. LIMITATIONS FOR INDUSTRIAL USERS

The permittee shall develop and enforce specific effluent limits (local limits) for Industrial user(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within **180 days of the effective date of this permit**, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee shall complete the attached form (**Attachment B. Reassessment of Technically Based Industrial Discharge Limits**) with the technical evaluation to assist in determining whether

existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (June 2004).

C. INDUSTRIAL PRETREATMENT PROGRAM

1. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR Part 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program ("IPP"):
 - a. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
 - b. Issue or renew all necessary industrial user control mechanisms within 120 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement; and
 - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
2. The permittee shall provide the EPA and the MassDEP with an annual report, pursuant to the requirements in **Attachment C. Industrial Pretreatment Annual Report** in accordance with 40 CFR Part 403.12(i), describing the permittee's pretreatment program activities over the twelve month period ending 60 days prior to the due date. The annual report shall be consistent with the format described in **Attachment C** of this permit and shall be due on **November 1st** of each year.
3. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR Part 403.18(c).
4. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR Part 405et.seq.
5. The permittee must modify, if necessary, its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of

the industrial pretreatment program. The permittee must provide EPA, in writing, within **180 days of this permit's effective date** of any proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR Part 403.18.

6. EPA published final changes to the General Pretreatment Regulations in the Federal Register, on October 14, 2005. The final "Pretreatment Streamlining Rule" is designed to reduce the burden to industrial users and provide regulatory flexibility in technical and administrative requirements of industrial users and POTW's. Within 60 days of the effective date of this permit, the permittee must submit to EPA all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated rule. To the extent that the POTW legal authority is not consistent with the required changes, they must be revised and submitted to EPA for review.

D. 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 in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP 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>.

E. COMPLIANCE SCHEDULE

No later than six months from the effective date of the permit, the permittee shall achieve compliance with the monthly geometric mean and daily maximum limits for enterococci. During the interim, the permittee shall sample enterococci once per week and report the value for each week in the month on the monthly discharge monitoring report.

F. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of NPDES Part II Standard Conditions and the following terms and conditions:

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.

2. Preventative Maintenance Program

The permittee shall maintain an ongoing preventative 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.

3. Infiltration/Inflow Control Plan:

The permittee shall develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MassDEP **within six months of the effective date of this permit** (see page 1 for the effective date of the permit) and shall describe the permittee's program for preventing infiltration/inflow related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows.
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of infiltration and inflow to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to the EPA and MassDEP annually, **by March 31**. The summary report shall at a minimum include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.

- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I and the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Part I.D. Unauthorized Discharges section of this permit.

G. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR Part 403.3).

H. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR Part 503), requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to facilities which perform one or more of the following use or disposal practices.
 - a. Land application - the use of sewage sludge to condition or fertilize the soil
 - b. Surface disposal - the placement of sewage sludge in a sludge-only landfill
 - c. Sewage sludge incineration in a sludge-only incinerator
4. The 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons, reed beds), or are otherwise excluded under 40 CFR Part 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. See **Attachment D. Sludge Compliance Guidance**. Appropriate conditions contain the following elements:
 - General requirements
 - Pollutant limitations

- Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
- Management practices
- Record keeping
- Monitoring
- Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

| | |
|-------------------------|------------|
| less than 290 | 1/ year |
| 290 to less than 1500 | 1 /quarter |
| 1500 to less than 15000 | 6 /year |
| 15000 + | 1 /month |

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR Part 503.8.
8. The permittee shall submit an annual report containing the information specified in the sludge guidance by February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:

- * Name and address of contractor responsible for sludge disposal
- * Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

I. 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 all DMRs and reports. Specific requirements regarding submittal of data
- a. Submittal of Reports Using NetDMR
NetDMR is accessed from: <http://www.epa.gov/netdmr>. Within one year of the effective date of the 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 the 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

Hard copy DMR submittals shall be completed and postmarked no later than the 15th day of the month following the completed reporting period. 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 required herein, shall be submitted to the appropriate State addresses and to the EPA address listed below:

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

The State Agency addresses are:

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

Signed and dated Discharge Monitoring Report Forms and toxicity reports required by this permit shall also be submitted to the State at:

**Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd floor
Worcester, MA 01887**

All Industrial Pretreatment Program Reports required by Sections B and C of the final permit must be sent to:

**U.S. Environmental Protection Agency
Water Technical Unit (SMR-04)
5 Post Office Square – Suite 100
Boston, Massachusetts 02109-3912
Attn: Justin Pimpare**

And

**Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Industrial Wastewater Section
1 Winter Street
Boston, Massachusetts 02108**

All plant failures and permit excursions for fecal coliform shall be reported within twenty-four hours to:

**Division of Marine Fisheries, Shellfish Management Program
30 Emerson Avenue
Gloucester, MA 01930
Email - (shellfish.newburyport@state.ma.us)
FAX (617-727-3337) or voice message (978-282-0308 extension 160)**

And

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

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.

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.

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.

EPA - New England

Reassessment of Technically Based Industrial Discharge Limits

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

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

Please read direction below before filling out form.

ITEM I.

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

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

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

ITEM II.

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

ITEM III.

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

ITEM IV.

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

ITEM V.

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

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

- * Based on your existing TBLLs, as presented in Item II., list in Column (2), for each pollutant the Maximum Allowable Headwork Loading (MAHL) values derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For more information, please see p.,3-28 in EPA's Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program, 12/87.

Item VI.

- * Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period. All effluent data collected and analyzed must be in accordance with 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.
- * List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that

time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

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

ITEM VII.

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

ITEM VIII.

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

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

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

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

**REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS
(TBLLs)**

POTW Name & Address : _____

NPDES PERMIT # : _____

Date EPA approved current TBLLs : _____

Date EPA approved current Sewer Use Ordinance : _____

ITEM I.

| | | |
|---|------------------------------|----------------------------------|
| In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW. | | |
| | Column (1) EXISTING TBLLs | Column (2) PRESENT CONDITIONS |
| POTW Flow (MGD) | | |
| Dilution Ratio or 7Q10 (from NPDES Permit) | | |
| SIU Flow (MGD) | | |
| Safety Factor | | N/A |
| Biosolids Disposal Method(s) | | |

ITEM II.

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

ITEM III.

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

ITEM IV.

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

If yes, explain.

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

If yes, explain. _____

ITEM V.

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

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

ITEM VI.

| Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit. | | | | |
|---|--|--|--|--|
| Pollutant | Column (1) | | Columns (2A) (2B) | |
| | Effluent Data Analyses Maximum Average (ug/l) (ug/l) | | Water Quality Criteria (Gold Book) From TBLLs Today (ug/l) (ug/l) | |
| Arsenic | | | | |
| *Cadmium | | | | |
| *Chromium | | | | |
| *Copper | | | | |
| Cyanide | | | | |
| *Lead | | | | |
| Mercury | | | | |
| *Nickel | | | | |
| Silver | | | | |
| *Zinc | | | | |
| Other (List) | | | | |
| | | | | |
| | | | | |
| | | | | |

*Hardness Dependent (mg/l - CaCO3)

ITEM VII.

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

[illegible]

ITEM VIII.

| <p>Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planing on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.</p> | | | |
|---|---|--|--|
| Pollutant | Column (1) Biosolids Data Analyses Average (mg/kg) | Columns (2A) (2B) Biosolids Criteria From TBLLs New (mg/kg) (mg/kg) | |
| Arsenic | | | |
| Cadmium | | | |
| Chromium | | | |
| Copper | | | |
| Cyanide | | | |
| Lead | | | |
| Mercury | | | |
| Nickel | | | |
| Silver | | | |
| Zinc | | | |
| Molybdenum | | | |
| Selenium | | | |
| Other (List) | | | |
| | | | |
| | | | |
| | | | |

NPDES PERMIT REQUIREMENT
FOR
INDUSTRIAL PRETREATMENT ANNUAL REPORT

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

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

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

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

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

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

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

FACT SHEET

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

NPDES PERMIT NO.: **MA0101745**

NAME AND ADDRESS OF APPLICANT:

**Town of Amesbury
AmesburyTown Hall
62 Friend Street
Amesbury, Massachusetts 01913**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Amesbury Water Pollution Abatement Facility
19 Merrimac Street
Amesbury, Massachusetts 01913**

RECEIVING WATER: **Merrimack River
Merrimack Watershed**

CLASSIFICATION: **Class SB**

I. Proposed Action

The above named applicant has requested that the United States Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) reissue its National Pollutant Discharge Elimination System (NPDES) permit to discharge from Outfall 001 into the Merrimack River.

The current NPDES permit was issued on February 2004, modified in August 2007 and expired on February 4, 2009. The current permit has been administratively extended as the applicant filed a complete application for permit reissuance as required by 40 Code of Federal Regulations (CFR) §122.6. The current permit will remain in effect until a renewed permit is issued.

II. Type of Facility and Discharge Location

The facility is engaged in the collection and treatment of domestic and industrial wastewater in Amesbury, Massachusetts and serves approximately 16,000 people. The collection system is a separate sanitary sewer system. There are eight significant industrial users.

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Figure 1 of the fact sheet shows the location of the facility and the outfall. Figure 2 of the fact sheet is a flow process diagram of the facility. The draft permit will be written to reflect the current operations and conditions at the facility.

III. Description of Treatment Plant and Discharge

The Town of Amesbury operates a conventional activated wastewater sludge treatment plant. The facility was upgraded in 2004. Two influent pipes carry wastewater to a wet well and from there it is piped to one of two influent channels. One channel has a mechanically operated fine screen and the other bypass channel is equipped with a manually cleaned bar rack. The screened effluent flows through two aerated grit chambers then to secondary treatment (aerated activated sludge, settling and waste/return activated sludge). After settling the effluent flows to the chlorine contact chambers for disinfection prior to discharge.

Settled waste sludge is aerobically digested and dewatered via a centrifuge. The dewatered sludge is transferred to a composting facility operated by Agresource Inc. in Ipswich, MA.

A quantitative description of the discharge in terms of significant effluent parameters based on recent effluent monitoring data may be found in Table 1 of this fact sheet.

IV. Limitations and Conditions

The effluent limitations and monitoring requirements are in the draft NPDES permit.

V. Permit Basis and Explanation of Effluent Limitation Derivation

The Clean Water Act (CWA or the Act) prohibits the discharge of pollutants to waters of the United States without an NPDES permit unless such a discharge is otherwise authorized by the Act. An NPDES permit is used to implement technology-based and water quality-based effluent limitations as well as other requirements including monitoring and reporting. This draft NPDES permit was developed in accordance with statutory and regulatory authorities established pursuant to the Act. The regulations governing the NPDES program are found in 40 CFR Parts 122, 124, and 125.

Regulatory Basis

EPA is required to consider technology and water quality requirements when developing effluent limits in NPDES permits. Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301(b) of the CWA (see 40 CFR 125 Subpart A).

For publicly owned treatment works (POTWs), technology-based requirements are the effluent limits based on secondary treatment defined in 40 CFR Part 133. EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

Under Section 301(b)(1)(C) of the CWA, discharges are also subject to effluent limits based on water quality standards. The Massachusetts Surface Water Quality Standards (314 CMR 4.00) include requirements for the regulation and control of toxic constituents and also require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site-specific criteria is established. The state will limit or prohibit the discharge of pollutants to surface water to assure that the water quality of the receiving water is protected and maintained, or attained.

The permit must limit any pollutant or pollutant parameter (conventional, non-conventional, toxic, and

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whole effluent toxicity) that is or may be discharged at a level that caused, or has reasonable potential to cause, or contribute to an excursion above any water quality criterion [40 CFR 122.44(d)(1)]. An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers existing controls on point and non-point sources of pollution, variability of the pollutant in the effluent, sensitivity of the receiving water to toxicity and where appropriate, the dilution of the effluent in the receiving water.

Waterbody Classification and Usage

The Merrimack River is classified as a Class SB waterbody from Haverhill to the Atlantic Ocean by the MassDEP in the Massachusetts Water Quality Standards

Class SB waters are designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, Class SB waters are habitat for fish, other aquatic life and wildlife and may include, but is not limited to, seagrass. Where designated in the tables to 3.14 CMR 4.00 for shell fishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetics value.

Design Flow

The permit's flow limit of 2.4 MGD has been carried over to the draft permit. The annual average flow rate in 2006 was 2.04 MGD, in 2007 it was 1.96 MGD, and in 2008 it was 1.90 MGD.

River Flow and Available Dilution

Water quality-based effluent limits in the draft permit are determined using water quality criteria and the available dilution during the lowest mean stream flow for seven consecutive days with ten year recurrence (7Q10) interval commonly known as the low flow. For rivers and streams, Title 314 CMR 4.03(3)(a) requires that the 7Q10 low flow be used to represent the critical hydrologic conditions at which the in stream water quality criteria must be met.

To determine the 7Q10 low flow, gaging data from the USGS website for USGS Lowell Gage Station 01100000 was used for the period of 1923 to 2007. The in-stream 7Q10 flow of the Merrimack River for the designated period is 900 cfs.

Treatment Plant Design Flow - 2.40 mgd = 3.71 cfs

Receiving Stream - Merrimack River

7 day 10 year low flow (7Q10) = 900 cfs = 582 mgd (value from USGS Lowell Gage Station 01100000)

Dilution Factor - Dilution factor is 244.

$$\frac{\text{plant flow} + \text{river flow}}{\text{plant flow}} = \frac{2.40 + 582}{2.40} = 243.5$$

Conventional Pollutants

Biochemical Oxygen Demand (BOD₅) –The average monthly and average weekly BOD₅ concentration limits in the draft permit are unchanged from the concentration limits in the existing permit. The BOD₅ mass limits were modified in August 2007 to reflect an increase in the design flow of the facility. The maximum daily reporting requirement became effective in August of 2007 when the permit was modified, and this reporting requirement has been carried over into the draft permit. The average monthly BOD₅ limits are 30 mg/l and 600 lbs/day and, the average weekly BOD₅ limits are 45 mg/l and 901 lbs/day. The

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concentration limits are based on secondary treatment standards found at 40 CFR Part§ 133. Mass limits have been included in the draft permit pursuant to 40 CFR § 122.45. They are based on the secondary treatment limits and the design flow of the treatment plant.

There have been no BOD₅ exceedances reported from January 2006 to December 2008.

Total Suspended Solids (TSS) - The average monthly and average weekly TSS concentration limits in the draft permit are unchanged from the limits in the existing permit. The TSS mass limits were modified in August 2007 to reflect an increase in the design flow of the facility. . The maximum daily reporting requirement became effective in August of 2007 when the permit was modified, and this reporting requirement has been carried over into the draft permit. The maximum daily reporting requirement has been carried over from the current permit. The average monthly TSS limits are 30 mg/l and 600 lbs/day and, the average weekly TSS limits are 45 mg/l and 901 lbs/day. The concentration limits are based on secondary treatment found at 40 CFR§ Part 133. Mass limits have been included in the draft permit pursuant to 40 CFR § 122.45. They are based on the secondary treatment limits and the design flow of the treatment plant.

In January 2006, the facility reported a slight increase in the monthly average TSS limit (31 mg/l), the monthly average and weekly average TSS mass limits (620 lbs/day, 880 lbs/day) and in April 2007 an exceedance in the monthly average mass limit (577.9 lbs/day) was reported.

Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement - the provisions of 40 CFR Part 133.102(3) requires that the 30 day average percent removal for BOD₅ and TSS not be less than 85%. No exceedance of the BOD₅ or TSS percentage removal limits have been reported since the permit was last issued.

pH - The draft permit includes proposed pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 CFR 133.102(c). The Massachusetts standards require Class SB waters maintain a pH range of 6.5 through 8.5 standard units with not more than 0.5 standard units outside of the receiving water background range. The water quality standards also require there be no change from background conditions that would impair any use assigned to this class. No exceedance of the pH limits have been reported since the permit was last issued.

Bacteria limits - Fecal Coliform Bacteria and Enterococci Bacteria

The effluent limits for bacteria are based on the Massachusetts Surface Water Quality Standards for Class SB waters, promulgated in 2006 and approved by EPA in 2007. The Merrimack River at the point of discharge qualifies as a Class SB water in the state water quality standards due to shell fishing.

For Class SB waters the following State Water Quality Standards applies;

“Waters designated for shell fishing shall not exceed a fecal coliform median or geometric mean Most Probable Number (MPN) of 88 organisms per 100 ml, nor shall more than 10% of the samples exceed an MPN of 260 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* (more stringent regulations may apply, see 314 CMR 4.06(1)(d)(5);

There have been no exceedances for either the monthly or weekly geometric mean for fecal coliform for the past three years.

In addition to the fecal coliform limits, the draft permit includes effluent limits for enterococci. MassDEP revised its surface water quality standards for bacteria in revisions to the Massachusetts Surface Water

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Quality Standards (SWQS) 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 in non-bathing beaches. The draft permit has a monthly average limit of 35 enterococci colonies per 100 ml and a maximum daily limit of 104 colonies per 100 ml. The draft permit includes a compliance schedule of one year to attain the new permit limit.

Dissolved Oxygen (DO) - The dissolved oxygen limit in the draft permit is 5.0 mg/l in accordance with Massachusetts Surface Water Quality Standards 314 CMR 4.05 (3)(b) for Class SB warm water fisheries.

NON-CONVENTIONAL POLLUTANTS

Total Residual Chlorine (TRC) - the effluent has been carried forward from the permit issued in 2004. It is based on guidance from the State titled, "Implementation Policy for Control of Toxic Pollutants in Surface Waters." DMR data from January 2006 through December 2008 show the monthly average chlorine residual range between 0.39 mg/l and 0.76 mg/l. The effluent is disinfected year round. There have been no TRC violations reported since the current permit was issued.

Metals

Due to the large dilution factor, limits calculated using the water quality criteria for metals indicate no reasonable potential to exceed the water quality criteria. Consequently, the draft permit does not include effluent limits for metals.

Toxicity

National studies conducted by the EPA have demonstrated that industrial and domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial contributions, the state water quality criterion, the level of dilution at the discharge location and in accordance with EPA national and regional policy and 40 CFR 122.44(d), the draft permit includes a whole effluent acute and chronic toxicity limitation (LC50 and C-NOEC) and monitoring requirements.

The LC50 is the point estimate of effluent that is lethal to 50% of the test organisms and the C-NOEC (chronic-no observed effects concentration) is the highest tested concentration of an effluent at which no adverse effects are observed on an organism. (See "Policy for the Development of Water Quality Based Permit Limitations for Toxic Pollutants", 50 Federal Register 30748, July 24, 1985, and EPA's Technical Support Document for Water Quality Based Toxics Control", September, 1985, and the "Implementation Policy for the Control of Toxic Pollutants on Surface Waters", February 23, 1990.)

The principal advantages of biological techniques are: (1) the effects of complex discharges of many known and unknown constituents can be measured only by biological analyses; (2) bioavailability of pollutants after discharge is measured by toxicity testing including any synergistic effects of pollutants; and (3) pollutants for which there are inadequate analytical methods or criteria can be addressed. Therefore, toxicity testing is being used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

The results of the whole effluent toxicity tests have been included in Table 1 of this fact sheet. The town requested a reduction in toxicity tests requirements in March 2004. The results of previous toxicity tests did not show toxicity in the effluent. Based on the result of past toxicity tests, EPA and MassDEP authorized a reduction in the number of species the town had to use in the test. The draft permit requires the Town to

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conduct toxicity tests twice per year using the Americamysis bahia, only, as the test specie.

VI. Pretreatment

The permittee is required to administer a pretreatment program based on the authority granted under 40 CFR Part 122.44(j), 40 CFR Part 403 and section 307 of the Act. The Permittee's pretreatment program received EPA approval on September 28, 1990 and, as a result, appropriate pretreatment program requirements were incorporated into the previous permit which is consistent with that approval and federal pretreatment regulations in effect when the permit was issued.

The Federal Pretreatment Regulations in 40 CFR Part 403 were amended in October 1988, July 1990 and again in October 2005. Those amendments established new requirements for implementation of pretreatment programs. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with current Federal Regulations. Those activities that the permittee must address include, but are not limited to, the following: (1) develop and enforce EPA approved specific effluent limits (technically-based local limits); (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; (3) develop an enforcement response plan; (4) implement a slug control evaluation program; (5) track significant noncompliance for industrial users; and (6) establish a definition of and track significant industrial users.

These requirements are necessary to ensure continued compliance with the POTW's NPDES permit and its sludge use or disposal practices.

Lastly, the permittee must continue to submit, annually, **by November 1**, a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

In addition to the requirements described above, the draft permit requires the permittee to submit to EPA in writing, within 120 days of the permit's effective date, a description of proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the draft permit to ensure that the pretreatment program is consistent and up-to-date with all pretreatment requirements in effect.

The permit requires the permittee to submit to EPA, within 60 days of the permit's effective date, all required modifications of the Streamlining Rule in order to be consistent with the provisions of the newly promulgated Rule. To the extent the permittee's legal authority is not consistent with the required changes they must be revised and submitted to EPA for review.

VII. Sludge

The permit prohibits any discharge of sludge. Section 405(d) of the CWA requires that sludge conditions be included in all POTW permits. Technical sludge standards required by Section 405 of the CWA were finalized on November 25, 1992 and published on February 19, 1993. The regulations went into effect on March 21, 1993.

Sludge generated at the facility is settled, aerobically digested, dewatered and then sent to the Ipswich composting facility operated by Agresource, Inc. The total dry metric tons per 365-day period of sludge sent for composting is 337.

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VIII. Essential Fish Habitat (EFH)

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 National Marine Fisheries Service (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. § 1855(b). The Amendments broadly define "essential fish habitat" as waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. U.S.C. § 1802(10). Adverse impact means any impact, which reduces the quality and/or quantity of EFH. 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g. loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for species for which federal fisheries management plans exist. 16 U.S.C. § 1855(b)(1)(A). The U.S. Department of Commerce approved EFH designations for New England on March 3, 1999.

Description of Proposed Action

The effluent from the facility is discharged through an outfall pipe fitted with a diffuser from a point on the river bed approximately 315 feet from the north bank of the river. Details of the facility and the pollutants it discharges are discussed in Sections II through V of the fact sheet.

EFH Species

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

Summary of Essential Fish Habitat (EFH) Designation**10' x 10' Square Coordinates:**

| Boundary | North | East | South | West |
|------------|-------------|-------------|-------------|-------------|
| Coordinate | 42° 50.0' N | 70° 40.0' W | 42° 40.0' N | 70° 50.0' W |

Square Description (i.e. habitat, landmarks, coastline markers) Waters within the Atlantic Ocean within the square affecting the following: from Ipswich Bay, past most of Castle Neck, northern Hog Island, Plum Island, Plum Island Sound, Ipswich, MA., Rowley, MA., Newburyport, MA., Newbury, MA., past Joppa Flats at the entrance to the Merrimack River up to Salisbury, MA. Features also affected include: a discontinued dumping ground just east of the opening to the Merrimack River, Woodbridge I., Plum I., Parker River Inlet, Rowley River Inlet, Eagle Hill River Inlet, Great Neck, and Ipswich River, and Ipswich Bay.

| Species | Eggs | Larvae | Juveniles | Adults |
|--|------|--------|-----------|--------|
| Atlantic cod (<i>Gadus morhua</i>) | X | X | X | X |
| haddock (<i>Melanogrammus aeglefinus</i>) | | | X | |
| pollock (<i>Pollachius virens</i>) | | | X | |
| whiting (<i>Merluccius bilinearis</i>) | X | X | X | X |
| red hake (<i>Urophycis chuss</i>) | X | X | X | X |
| white hake (<i>Urophycis tenuis</i>) | | | | |
| redfish (<i>Sebastes fasciatus</i>) | n/a | X | X | X |
| winter flounder (<i>Pleuronectes americanus</i>) | X | X | X | X |
| yellowtail flounder (<i>Pleuronectes ferruginea</i>) | | | X | X |
| windowpane flounder (<i>Scopthalmus aquosus</i>) | X | | X | X |
| American plaice (<i>Hippoglossoides platessoides</i>) | X | | | X |
| ocean pout (<i>Macrozoarces americanus</i>) | X | X | X | X |
| Atlantic halibut (<i>Hippoglossus hippoglossus</i>) | X | X | X | X |
| Atlantic sea scallop (<i>Placopecten magellanicus</i>) | X | X | X | X |
| Atlantic sea herring (<i>Clupea harengus</i>) | | X | X | X |
| monkfish (<i>Lophius americanus</i>) | X | X | | |
| long finned squid (<i>Loligo pealei</i>) | n/a | n/a | X | X |

| | | | | |
|---|-----|-----|---|---|
| short finned squid (<i>Illex illecebrosus</i>) | n/a | n/a | X | X |
| Atlantic butterfish (<i>Peprilus triacanthus</i>) | X | X | X | X |
| Atlantic mackerel (<i>Scomber scombrus</i>) | X | X | X | X |
| summer flounder (<i>Paralichthys dentatus</i>) | | | | X |
| scup (<i>Stenotomus chrysops</i>) | n/a | n/a | X | X |
| black sea bass (<i>Centropristus striata</i>) | n/a | | X | |
| surf clam (<i>Spisula solidissima</i>) | n/a | n/a | X | X |
| bluefin tuna (<i>Thunnus thynnus</i>) | | | X | X |

Analysis of Effects

There are a number of pollutants that may be associated with treated municipal wastewater that could potentially impact EFH. These are broadly divided in to two categories: conventional and non-conventional pollutants. Conventional pollutants (including indicators of pollution) evaluated through this permit process include biochemical oxygen demand (BOD₅), total suspended solids (TSS), pH, bacteria (fecal coliform bacteria and Enterococci), and dissolved oxygen (DO). Non-conventional pollutants include chlorine, metals (e.g., copper), and the combination of all pollutants known and unknown (i.e, whole effluent toxicity).

For conventional pollutants, this draft permit carries forward limits on BOD₅ and TSS requiring 85 percent removal prior to discharge, based on a 30-day average. The permit also limits changes in pH to be no greater than 0.5 standard units from ambient conditions, consistent with state water quality requirements for class SB waters. Bacteria limits are also included to protect designated uses of class SB waters, in particular, bathing and shellfishing. Similarly, a minimum monthly DO average of 5.0 mg/l is also required to ensure that state water quality standards are being met.

The discharge of non-conventional pollutants were monitored and evaluated to determine if there was reasonable potential for these pollutants to exceed state numeric or narrative criteria for class SB waters. A total residual chlorine limit of 1 mg/l has been carried forward from the previous permit. The high dilution factor (244) at the discharge point reduces the calculated metal concentrations for copper and lead in the effluent to values well below thresholds that would reflect a reasonable potential to exceed numeric criteria. Therefore, limits for metals are not included in the permit. Finally, in order to address potential toxicity from a combination of pollutants, or unknown pollutants, acute whole effluent toxicity (WET) tests using mysid shrimp (*Americamysis bahia*) are required twice per year.

EPA's Opinion on Probable Impacts

EPA has structured the permit to be sufficiently stringent to assure that state water quality standards will be met for Class SB waters. The effluent limitations in this permit ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat. The permit limitations in the draft permit are at least as stringent as those in the current permit and the permit includes additional effluent limits for enterococci and dissolved oxygen. In addition, the tidal energy and volume of the Merrimack River in this section of the river is characterized by tidal velocities up to 1.53 knots, and an average river flow of approximately 5000 cfs, according to hydrographic studies conducted for the Newburyport Wastewater Treatment Plant, located downstream

Based on the nature of the effluent (primarily municipal wastewater), high dilution and current velocities in the receiving water, and permit limits designed to ensure the protection of aquatic life consistent with state water quality standards, it is EPA's opinion that adverse effects to EFH have been minimized. The requirements of this NPDES permit should sufficiently protect EFH, and therefore additional mitigation is not warranted. If adverse effects to EFH do occur either as a result of non-compliance, or from unanticipated effects from this activity, then consultation with NMFS will be reinitiated.

IX. Endangered Species Act (ESA)

Section 7(a) of the Endangered Species Act 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 or Commerce, 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) typically administers Section 7 consultations for fresh water species, and the National Marine Fisheries Services (NMFS) administers Section 7 consultations for marine species and anadromous fish.

Based on EPA's review of federally-listed species information for New England waters, it appears that shortnose sturgeon (*Acipenser brevirostrum*) is the only species that may be present in the vicinity of the Amesbury facility's discharge. . Therefore, there does not appear to be any listed species present that are under the purview of the USFWS. According to the Final Recovery Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*), dated December 1998, there is a small known population in the lower Merrimack River. The location of the facility's outfall is approximately 315 feet from the north bank of river at a depth of approximately 11 feet (See Figure 1). The end of the outfall pipe is fitted with a diffuser to enhance mixing of the treated effluent with the receiving water upon discharge.

It is EPA's opinion that the operation of the Amesbury WPAF, as governed by the reissuance of this NPDES permit, is not likely to adversely affect shortnose sturgeon, or its critical habitat. The following information supports this determination:

1. This is a permit reissuance for an existing discharge from plant that has been in operation since 1975
2. The constituents of the discharge are typical of municipal wastewater treatment facilities. No major industries are authorized to contribute to the waste stream. See the "Analysis of Effects" under Section VIII (EFH) above for additional information on specific pollutants.
3. The high dilution factor of the receiving water (244) combined with strong tidal currents (up to

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1.5 knots), result in rapid dispersion of the effluent after it is discharged through the diffuser of the outfall pipe.

4. EPA has structured the permit to be sufficiently stringent to assure that state water quality standards will be met for Class SB waters. The effluent limitations in this permit ensure the protection of aquatic life and maintenance of the receiving water as an aquatic habitat. The permit limitations in the draft permit are at least as stringent as those in the current permit and the permit includes additional effluent limits for enterococci and dissolved oxygen.

EPA is seeking concurrence from NMFS and the USFWS on these opinions through informal consultation..

X. Coastal Zone Management (CZM) Consistency Review

40 CFR §122.49 (d) states: The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing 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 non-concurrence). CZM has notified EPA that the discharge is within the defined CZM boundaries and is subject to CZM contingency review

XI. State Certification Requirements

EPA may not issue a permit unless the state water pollution control agency with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MassDEP has reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

XII. Public Comment Period, Public Hearing, and Procedures for Final Decision

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Massachusetts Office of Ecosystem Protection (CMA), 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. 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 MassDEP. Such requests shall state the nature of the issues proposed to be raised in the hearing.

A public hearing may be held after at least thirty days public notice whenever, the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period and, after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the final permit decision, any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of 40 CFR § 124.74, 48 Fed. Reg. 14279-14280 (April 1, 1983).

XIII. 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:

Betsy Davis
US Environmental Protection Agency
1 Congress Street
Suite 1100 (CMP)
Boston, Massachusetts 02114-2023
Telephone: (617) 918-1576

or

Paul Hogan
MA Department of Environmental Protection
Division of Watershed Management
627 Main Street
Worcester, MA 01608
Telephone: (508) 767-2796

Date

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

Summary of NPDES Permit Reporting Requirements Dates

| Permit Page | Requirement and Dates | Submit to: |
|--------------------|--|-------------------|
| 4 | Whole Effluent Toxicity Tests results are due March 31, June 30, September 31, and December 31 of each year. | EPA/MassDEP |
| 9 | The permittee shall develop and implement a plan to control I/I to the separate sewer system. The plan shall be available to EPA and submitted to MassDEP six months of the effective date of the permit. | MassDEP |
| 9 | A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MassDEP annually, | EPA/MassDEP |
| 10 | The permittee shall submit an annual report containing the information specified in the sludge section of the permit by February 19. | EPA/MassDEP |
| 11 | Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15 th day of the month following the effective date of the permit. | EPA/MassDEP |

**EPA AND MASSDEP JOINT RESPONSE TO PUBLIC COMMENTS
AMESBURY WATER POLLUTION ABATEMENT FACILITY
NPDES PERMIT NO. MA0101745**

From September 22, 2009 to October 31, 2009 Region 1 of the United States Environmental Protection Agency (“Region” or “EPA”) and the Massachusetts Department of Environmental Protection (“MassDEP”) solicited Public Comments on a draft NPDES permit for the Amesbury Water Pollution Abatement Facility. The draft permit was developed pursuant to an application from the Town of Amesbury (the “permittee”) for reissuance of its NPDES permit to discharge treated wastewater to the Merrimack River. Upon considering the comments received, EPA has made a final decision to reissue the permit authorizing the discharge. The following response to comments briefly describes and responds to the comments and briefly describes changes made to the permit. A copy of the final permit may be obtained from the permit writer, whose contact information is as follows:

Betsy Davis
United States Environmental Protection Agency
5 Post Office Square-Suite 100 (OEP06-1)
Boston, Massachusetts 02114-2023
Tel: (617) 918-1576
Email: davis.betsy@epa.gov

Comments submitted by Edwin Croveti, Chief Operator, Town of Amesbury, Water Pollution Abatement Facility (WPAF), Amesbury, Massachusetts on October 21, 2009.

Comment #1: The draft permit asks for 24-hour composite samples for this parameter where the more appropriate sample type for chlorine residual is a grab sample as chlorine residual dissipates over time.

Response #1: The sample type and frequency for total residual chlorine has been changed to a grab sample taken 3 times per day.

Comment #2: On Attachment A of the fact sheet, it is indicated that we will need to submit four effluent toxicity tests per year. Currently we conduct sampling for *Americamysis Bahia* in July and October with reports on the analysis of these samples due to the Agency in August and November. This sampling and reporting itinerary was given to us in a letter by Roger Janson of the Agency on May 21, 2004, after review of our toxicity data.

Response #2: The fact sheet is incorrect. The correct number of whole effluent toxicity tests the Town must conduct each year is two as stated in the draft and final permits. This response to comment is part of the facility’s administrative NPDES permit file and shall serve as a correction to Attachment A, Summary of NPDES Permit Reporting Requirements Dates of the fact sheet.

Comments submitted by Paul Diodati, Director, the Massachusetts Division of Marine on Fisheries on October 21, 2009

Comment #3: The Division of Marine Fisheries (*Marine Fisheries*) has reviewed the draft NPDES permit (MA0101745) that allows the Amesbury Water Pollution Abatement Facility to discharge treated sewerage effluent into the receiving waters of the Merrimack River. *Marine Fisheries* requests the permit be modified for reasons described below.

Marine Fisheries re-classified the Merrimack River from prohibited to conditional status for the purpose of harvesting shellfish. This re-classification is the result of reductions in fecal coliform levels in the receiving waters. In order to remain aware of potential sources of fecal coliform bacteria that may effect this classification, *Marine Fisheries* requests permit section "Part 1. I. Monitoring and Reporting" on page eleven be modified to require notification to *Marine Fisheries* within twenty four hours when a permit excursion for fecal coliform or plant failure occurs. A twenty-four hour notification of a permit excursion or plant failure should be sent to the Division of Marine Fisheries, Shellfish Management Program, 30 Emerson Avenue, Gloucester, MA 01930, via email (shellfish.newburyport@state.ma.us), FAX, (617-727-3337), or voice message (978-282-0308 extension 160).

Response #3: Language has been added to the final permit that will require the Town to provide notification to the Division of Marine Fisheries, Shellfish Management Program, within twenty-four hours after plant failure and/or an excursion of the fecal coliform limit. See Part I.I.1.c Monitoring and Reporting on page 13 of the permit.

Comments submitted by Tracie Sales, Water Resources Manager, Merrimack River Watershed Council, Inc. on October 21, 2009.

Comment #4: Limit Nutrients in Effluent - While the Merrimack River is not currently listed as impaired due to nutrients or unionized ammonia in the Amesbury segment, and the Plum Island Sound area is not considered exceptionally nitrogen sensitive, the river is impaired for these parameters further upstream according to the *Massachusetts Year 2006 Integrated List of Waters*, indicating excess contributions to the river as a whole. Draft NPDES Permit No. MA0101745 does not limit, or even require monitoring of, any nutrients. Most municipal treatment plants have some nutrient requirements, but the lack of even a monitoring requirement for the Amesbury WPAF means that we do not know what this plant is adding to the cumulative loads in the river. The Amesbury WPAF should be required to reduce nitrogen and phosphorus to the greatest extent possible, as demonstrated through monitoring. This monitoring, which should also include ammonia, will help in loading calculations along the length of the river.

Response #4: NPDES permits must include effluent limitations that satisfy technology-based requirements (i.e. secondary treatment, see 40 CFR Part 133) and also include limitations on any pollutant that has the reasonable potential to cause or contribute to an exceedance of water quality standards.

The effluent from the facility discharges into segment MA84A-06 of the Merrimack River. Massachusetts listed this segment of the Merrimack River as being impaired for unionized ammonia in 1998. However, the State subsequently removed it as a pollutant causing impairment to this segment of the river and it is not shown on the Massachusetts Year 2008 Integrated Lists of Water. This report does not list this segment as impaired for nutrients nor is it listed for any nutrient-related impairment.

A reasonable potential calculation for ammonia was performed (see below) to confirm that the discharge from this facility does not have the reasonable potential to cause or contribute to an exceedance of water quality standards.

Dilution water used in Whole Effluent Toxicity (WET) testing is collected upstream of the Amesbury discharge and is tested for total ammonia. This data, and the corresponding pH data are presented in the table below. The table also shows the assumed temperatures and salinities, which are conservative (i.e, the criteria become more stringent at higher temperatures and lower

salinities, so a salinity value at the low end of the expected range and a temperature value at the high end of the expected range were selected). The table then shows the corresponding acute and chronic water quality criteria. The criteria are from Ambient Water Quality Criteria for Ammonia (Saltwater) -1989, USEPA 440/66/004.

| Date | Ambient Ammonia (mg/l) | pH | Temperature °C | Salinity (g/kg) | Acute Criteria Saltwater (mg/l) | Chronic Criteria Saltwater (mg/l) |
|--------------|------------------------|------|----------------|-----------------|---------------------------------|-----------------------------------|
| July 2009 | 0.1 | 7.16 | 24 | 10 | 27 | 4.1 |
| October 2008 | 0.1 | 7.07 | 20 | 10 | 62 | 9.4 |
| July 2008 | 0.1 | 6.84 | 24 | 10 | 44 | 6.6 |
| October 2007 | 0.35 | 6.84 | 20 | 10 | 62 | 9.4 |
| July 2007 | 0.14 | 7.53 | 24 | 10 | 11 | 1.7 |

As can be seen, the ammonia concentrations upstream of the discharge are substantially less than the recommended criteria.

To determine whether ammonia discharged from the treatment plant has the reasonable potential to cause or contribute to an exceedance of water quality standards, EPA calculated the instream concentration downstream of the discharge that would result from the plant discharge. This calculation was done assuming an upstream ammonia concentration of 0.35 mg/l, the highest concentration reported in the WET test dilution water data (see Table above); a 7Q10 flow of 582 MGD; a treatment plant discharge flow of 2.40 MGD (the facility design flow); and an effluent concentration of 19 mg/l, the maximum value reported in the treatment plant WET test data. The calculation is shown below:

$$Q_r C_r = Q_d C_d + Q_s C_s$$

Where

Q_r = receiving water flow downstream of the discharge ($Q_d + Q_s$), 584 MGD

C_r = ammonia concentration in the receiving water downstream of the discharge, x mg/l

Q_d = discharge flow from the facility, 2.40 MGD

C_d = ammonia concentration in the discharge from recent WET test, 19 mg/l

Q_s = 7Q10 flow, receiving water flow upstream of the discharge, 582 MGD

C_s = ammonia concentration upstream of the discharge, 0.35 mg/l

Solving for C_r yields:

$$C_r = \frac{Q_d C_d + Q_s C_s}{Q_r}$$

$$C_r = \frac{(2.40 \text{ MGD})(19 \text{ mg/l}) + (582 \text{ MGD})(0.35 \text{ mg/l})}{584 \text{ MGD}}$$

$$C_r = 0.43 \text{ mg/l}$$

As can be seen, the receiving water concentration is less than the most stringent acute and chronic criteria values shown in the table (11 mg/l and 1.1 mg/l respectively). This shows that the ammonia discharges from this facility do not have the reasonable potential to cause or contribute to an exceedance of water quality standards, so a limit is not necessary.

Regarding the request to include limits and monitoring for nutrients, the MA integrated List does not indicate any nutrient or nutrient-related impairments of the receiving water. This, coupled with the large dilution factor, leads EPA to conclude there is no reasonable potential for the discharge of nutrients to cause or contribute to the exceedance of water quality standards. Also, given the high dilution, the impact of this discharge on receiving water quality is small, within a normal range of discharge concentrations, so EPA does not believe that the collection of additional effluent nutrient samples is necessary.

Comment #5: Enforce Enterococcus Compliance by May 15, 2010 - The existing permit allows the Amesbury WPAF one year from the effective date of the permit to achieve compliance with Massachusetts' Enterococcus water quality standards, standards which have already been approved for more than two years. The one year grace period is too lenient for a waste water treatment plant located directly across the river from Moseley State Park where children and adults swim in the river (and the treatment plant's discharge) during the summer months. Given that the treatment plant has met state water quality standards for fecal coliform in its discharges for the past three years, meeting the Enterococcus standard by May 15, 2010, before the summer swimming season, should not be too onerous.

Response #5: To ensure protection for all designated uses, the compliance schedule has been changed in the final permit and requires compliance with the limits for Enterococcus within six months of the effective date of the permit.

The treatment discharges to segment MA84-06 of the Merrimack River, a Class SB water body by the MassDEP. Pursuant to 314 CMR 4.05(b), Class SB "*These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas)*".

The effluent limits for Enterococcus shall be in effect for next summer's swimming season.

Comment #6: Test Whole Effluent Toxicity During Extreme Low Flow

The draft permit currently requires testing for Whole Effluent Toxicity during the months of July and October. These dates should be shifted to encompass testing during August, the month traditionally showing the lowest flow in the Merrimack River. We recommend the revised months of August and February.

Response #6: The test schedule is consistent with the schedules typically included in NPDES permits for dischargers in the Merrimack Watershed. While EPA does believe it is important to have at least one WET test per year conducted during the summer months, we do not believe it is necessary to ensure that this test be conducted under extreme low flow conditions, because effluent and receiving water characteristics do not change significantly from July to August. The schedule has not been changed.

Comment #7: Address Effect of Permitted Discharge on Bald Eagles

While bald eagles are no longer on the endangered species list, and are therefore no longer required to be addressed in the NPDES permit for the Amesbury WPAF, they are still relatively rare in Massachusetts and remain an important national symbol of freedom. Because bald eagles are now nesting and feeding in the lower Merrimack River, we feel that the Fact Sheet should still address and confirm that the permitted discharge will not jeopardize the health or habitat of these eagles.

Response #7: The fact sheet explains the rationale for the requirements and effluent limits in the draft permit. It briefly sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit. The fact sheet becomes part of the administrative file for the facility and is not amended or changed after it is put on public notice. The discharge from the treatment plant does not impact the bald eagle or its habitat and therefore would not be addressed in the fact sheet.

The Fish and Wildlife Service in the Department of the Interior and the National Oceanic and Atmospheric Administration (NOAA)-Fisheries in the Department of Commerce share responsibility for administration of the Endangered Species Act. As the commenter noted, the bald eagle is no longer a federally-listed species on the Federal List of Endangered and Threatened Wildlife. It was removed from the list in July 2007.

As discussed in the fact sheet, the NPDES program must follow the requirements in section 7(a) of the Endangered Species Act Section of 1973. This section of the ESA, as amended, grants authority to and imposes requirements upon the EPA only 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 EPA, 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 shortnose sturgeon (*Acipenser brevirostrum*) is the only federally-listed species that is present in the vicinity of the treatment plant's discharge and, EPA initiated informal consultation with the National Marine Fisheries Services (NMFS) in September, 2009 to address potential risks from the facility's discharge to the shortnose sturgeon. It is EPA's opinion that the operation of the Amesbury facility is not likely to adversely affect the shortnose sturgeon or its critical habitat. If the National Marine Fisheries does not concur with EPA's opinion that the operation of the Amesbury Water Pollution Abatement Facility will not adversely affect the shortnose sturgeon or its critical habitat the National Marine Fisheries shall initiate formal consultation with EPA.