

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),

**City of Newburyport**

is authorized to discharge from the facility located at:

**Newburyport Water Pollution Control Facility  
157 Water Street  
Newburyport, MA 01950**

to receiving water named:

**Merrimack River (MA 84A-06)**

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

This permit shall become effective on (See \*\*\* below).

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

This permit supersedes the permit issued on May 3, 2004 and the permit modification issued on October 19, 2006.

This permit consists of 14 pages in Part I including effluent limitations, monitoring requirements, 25 pages in Part II including Standards Conditions, and Attachment A - Marine Acute Toxicity Test Procedure and Protocol; Attachment B - Pretreatment Program Evaluation Form and Attachment C - Summary of Required Reports Submittals.

Signed this      day of

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Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

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Director  
Massachusetts Wastewater Management Program  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

*\*\*\* This permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will be made effective no sooner than 30 days after signature.*

PART I

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number <b>001</b> to the Merrimack River. The discharge shall be limited and monitored as specified below.								
EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS						MONITORING REQUIREMENTS <sup>3</sup>	
	Mass Limits			Concentration Limits				
Parameter	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Flow	***	***	***	3.4 MGD <sup>2</sup>	***	Report MGD	Continuous	Recorder
Flow	***	***	***	Report MGD	***	***	Continuous	Recorder
BOD <sub>5</sub> <sup>4</sup>	851 lbs/day	1276 lbs/day	Report	30 mg/l	45 mg/l	Report mg/l	3/Week	24-Hour Composite <sup>5</sup>
TSS <sup>4</sup>	851 lbs/day	1276 lbs/day	Report	30 mg/l	45 mg/l	Report mg/l	3/Week	24-Hour Composite <sup>5</sup>
pH Range <sup>1</sup>	6.5-8.5 SU (See Permit Page 5 of 14, Paragraph I.A.1.b.)						1/Day	Grab
Total Residual Chlorine <sup>1,7,8,9</sup>	***	***	***	0.23 mg/l	***	0.39 mg/l	1/Day	Grab
Fecal Coliform Bacteria <sup>1,6,7,8</sup>	***	***	***	88 CFU/100 ml	***	400 CFU/100 ml	1/Day	Grab
Enterococci <sup>1,7</sup>	***	***	***	35 Colonies /100 ml	***	104 Colonies /100 ml	1/Day	Grab
Total Ammonia Nitrogen, as N	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Total Kjeldahl Nitrogen	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Total Nitrate/Nitrite	Report lbs/day	***	***	***	***	Report mg/l	1/Month	24-Hour Composite <sup>5</sup>
Whole Effluent Toxicity <sup>10,11,12,13</sup>	Acute LC <sub>50</sub> ≥ 100%						4/Year	24-Hour Composite <sup>5</sup>

Sampling Location: Following dechlorination, just prior to discharge to outfall pipe.

Footnotes:

1. Required for State Certification.
2. Report annual average, monthly average, and the maximum daily flow. The limit is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic average of the monthly average flow for the reporting month and the monthly average flows for the previous eleven months.
3. All required effluent samples shall be collected at the point specified on page 2. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP.

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

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

4. Sampling required for influent and effluent once per day.
5. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.
6. A monthly geometric mean limit of 88 cfu per 100 ml and a maximum daily limit of 400 cfu per 100 ml shall apply. No more than 10% of samples shall exceed 260 cfu per 100 ml. Monitoring of this parameter shall be conducted concurrently with the TRC sampling.
7. Fecal coliform bacteria, enterococci and total residual chlorine limits and monitoring requirements are in effect year round. As enterococci monitoring is a new requirement, the permittee shall monitor only for the first year of the permit without an effluent limit. After one year, the effluent limits for enterococci apply. The average monthly limit for fecal coliform bacteria is expressed as a geometric mean. Samples for fecal coliform bacteria and enterococci shall be taken at the same time as a total residual chlorine sample. Sampling is required once per day.
8. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum detection level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G. 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 discharge monitoring report.

Chlorination and dechlorination systems include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine 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.

The alarm system shall specifically include a low TRC level alarm on the pre-dechlorination TRC analyzer. The alarm shall be set at a level that ensures an adequate kill of fecal coliform bacteria. The alarm shall be connected to the WPCF alarm pager system. Once notified of low TRC levels, the WPCF staff shall visit the plant to investigate the cause of the alarm. All alarms must be recorded in the operator's log book including the time of alarm, time of system investigation, duration and magnitude of the event, the cause for the alarm and how the event was resolved.

If the alarm triggering event resulted in the discharge of un-disinfected effluent, the permittee must immediately sample the effluent for TRC and fecal coliform bacteria. The permittee must also notify the Massachusetts Division of Marine Fisheries (*Marine Fisheries*) within 4 hours (See Section D for the description of the related immediate warning system developed with *Marine Fisheries*.)

9. For every day that more than two samples are analyzed, the monthly DMR shall include an attachment documenting the individual grab sample results for that day, the date and time of each sample, the analytical method, and a summary of any operational modifications implemented in response to the sample results. This requirement applies to all samples taken, including screening level and process control samples. All test results utilizing an EPA approved analytical method shall be used in the calculation and reporting of the monthly average and maximum daily data submitted on the DMR (see Part II, Section D.1.d(2)).
  
10. The permittee shall conduct modified acute toxicity tests four (4) times per year using Mysid Shrimp and Inland Silverside. Toxicity test samples shall be collected during the months of January, April, 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 by February 28, May 31, August 31 and November 30, respectively. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit.

Test Dates	Submit Results by:	Test Species	Acute Limit LC <sub>50</sub>
January	February 28 <sup>th</sup> ,	Mysid Shrimp	≥100%
April	March 31 <sup>st</sup> ,	Inland Silverside	
July	August 31 <sup>st</sup> ,		
October	November 30 <sup>th</sup>		

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

11. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
  
12. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure**

**and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region I web site at <http://www.epa.gov/Region1/enforcementandassistance/dmr.html> . If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlines in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach in **Attachment A**.

13. The permit shall be modified, or alternatively revoked and reissued, to incorporate additional toxicity testing requirements, including chemical specific limits, if the results of the toxicity tests indicate the discharge causes an exceedance of any State Water Quality Criterion. Results from these tests are considered “new information” and the permit may be modified pursuant to 40 CFR 122.6(a)(2).

**Part I.A.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 and not more than 0.2 standard units outside of the natural background range.
  - 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 biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS). The percent removal shall be based on monthly average values.
  - f. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
  - g. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.
  - h. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
2. All POTWs must provide adequate notice to the Director of the following:
    - a. Any new introduction of pollutants into that POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
    - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.

c. For purposes of this paragraph, adequate notice shall include information on:

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

3. Prohibitions Concerning Interference and Pass Through:

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

4. Toxics Control

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

5. Numerical Effluent Limitations for Toxicants

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

**B. UNAUTHORIZED DISCHARGES**

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

Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes DEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at <http://www.mass.gov/dep/water/approvals/surffms.htm#sso> .

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

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

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

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

5. Collection System Operation and Maintenance Plan

The permittee shall develop and implement a Collection System Operation and Maintenance Plan.

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



6. Annual Reporting Requirement

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

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. If treatment plant flow has reached 80% of its design flow [2.72 mgd] based on the annual average flow during the reporting year, or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and
- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

7. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works<sup>1</sup> it owns and operates.

**D. IMMEDIATE WARNING SYSTEM**

Within twelve (12) months of the effective date of the permit issuance, the permittee shall submit a report to EPA and MassDEP detailing any updates to the design and operation of an immediate warning system developed with input from *Marine Fisheries*.

At a minimum the immediate warning system shall incorporate all of the total residual chlorine monitoring and alarms systems required in footnote 9, and shall include procedures for immediate (within 4 hours) notification of *Marine Fisheries* if un-disinfected effluent is discharged from the facility. The City shall continue to work cooperatively with *Marine Fisheries* to develop and implement the system.

**E. INDUSTRIAL USERS AND PRETREATMENT PROGRAM**

1. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within (120 days of the effective date of this permit), the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to

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<sup>1</sup> As defined at 40 CFR §122.2, which references the definition at 40 CFR §403.3

revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

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

permit's effective date proposed changes, if applicable, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.E.1.

**F. SLUDGE CONDITIONS**

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practice, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use and Disposal of Sewage Sludge" pursuant to Section 405(d) of the CWA, 33 U.S.C. § 1345(d).
2. If both state and federal requirements apply to the permittee's sludge use and/or disposal practices, the permittee shall comply with the more stringent of the applicable requirements.
3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use and disposal practices.
  - a. Land application - the use of sewage sludge to condition or fertilize the soil
  - b. Surface disposal - the placement of sewage sludge in a sludge only landfill
  - c. Sewage sludge incineration in a sludge only incinerator
4. The requirements of 40 CFR Part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These requirements also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons, reed beds), or are otherwise excluded under 40 CFR §503.6.
5. The 40 CFR Part 503 requirements include the following elements:
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

Which of the 40 CFR Part 503 requirements apply to the permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 Guidance document, "EPA Region 1 – NPDES Permit Sludge Compliance

Guidance” (November 4, 1999), may be used by the permittee to assist it in determining the applicable requirements.<sup>2</sup>

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

less than 290	1/ year
290 to less than 1500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

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

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

## G. 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.

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

**Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR

a. Submittal of Reports using NetDMR

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

DMRs shall be submitted electronically to EPA no later than the 15<sup>th</sup> day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt-Out Requests

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

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

And

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

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on a separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15<sup>th</sup> day of the month following the completed reporting period. All

reports required under this permit, including MassDEP Monthly Operation and Maintenance Reports, shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

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

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

**MassDEP – Northeast Region  
Bureau of Resource Protection (Municipal)  
205B Lowell Street  
Wilmington, MA 01887**

Copies of toxicity test reports only to:

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

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

Industrial Pretreatment Program Reports should be sent by the permittee to:

**EPA New England  
Attn: Justin Pimpare  
5 Post Office Square  
Mail Code: OEP06-3  
Boston, MA 02109-3912**

and

**Massachusetts Department of Environmental Protection  
Bureau of Waste Prevention  
Industrial Wastewater Program  
One Winter Street  
Boston, MA 02108**

## **H. STATE PERMIT CONDITIONS**

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water

discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c.21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in the authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

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

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.

**Summary of Required Report Submittals\***

<b>Required Report</b>	<b>Date Due</b>	<b>Submitted by:</b>	<b>Submitted to:</b>
Chlorination System Report (Part I.A.1. Footnote 9)	With monthly DMRs, if interruption or malfunction of the chlorine dosing system occurs (See Footnote 9).	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Whole Effluent Toxicity Test Report (Part I.A.1. Footnote 10)	By February 28th, March 31st, August 31st and November 30th of each year	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
			MassDEP Division of Watershed Management Surface Water Discharge Permit Program 627 Main Street, 2 <sup>nd</sup> Floor Worcester, MA 01608
Notification of SSO discharge	Within 24 hours	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887

Required Report	Date Due	Submitted by:	Submitted to:
Collection System Mapping (Part I.C.4)	Within 30 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Initial Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 6 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Full Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 24 months of the effective date	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887

Required Report	Date Due	Submitted by:	Submitted to:
Annual Summary Report of Activities related to implementation of Collection System O & M Plan	Annually by March 31	Newburyport WPCF	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection Northeast Regional Office 205A Lowell Street Wilmington, MA 01887
Local Limits Technical Evaluation (Part I.B.1)	Within 120 days of the effective date	Newburyport WPCF	EPA New England Attn: Justin Pimpare 5 Post Office Square Mail Code: OEP6-3 Boston, MA 02109-3912
			MassDEP Bureau of Waste Prevention Industrial Wastewater Program One Winter Street Boston, MA 02108
Annual Pretreatment Report (Part I. B.3)	Annually by March 1	Newburyport WPCF	EPA New England Attn: Justin Pimpare 5 Post Office Square Mail Code: OEP6-3 Boston, MA 02109-3912
			MassDEP Bureau of Waste Prevention Industrial Wastewater Program One Winter Street Boston, MA 02108

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

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

FACT SHEET

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

**NPDES PERMIT NUMBER: MA0101427**

**NAME AND ADDRESS OF APPLICANT:**

**City of Newburyport  
157 Water Street  
Newburyport, MA 01950**

**NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:**

**Newburyport Water Pollution Control Facility  
157 Water Street  
Newburyport, MA 01950**

**RECEIVING WATERS: Merrimack River  
(Merrimack River Watershed, Segment MA84A-06)**

**CLASSIFICATION: Class SB, Shellfishing, CSO**

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## 1. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit was issued on May 3, 2004. The permit did not become effective until March 13, 2006 because of a permit appeal. The permit expired on March 13, 2011. The permit was modified on October 19, 2006 in resolution of an appeal. The modification became effective on December 18, and expired on March 13, 2011, the same date as the underlying permit. A timely re-application was received on October 7, 2010. This draft permit is conditioned to expire five (5) years from the effective date.

## 2. TYPE OF FACILITY AND DISCHARGE LOCATION

The Newburyport Water Pollution Control Facility (WPCF) is a 3.4 million gallon per day (mgd) secondary wastewater treatment plant. The facility was originally built in 1964 and upgraded to secondary treatment in the 1980s. The facility is currently undergoing an upgrade; construction began April 26, 2010 and is expected to be completed by June 1, 2013. The first phase of improvements included replacement of the existing mechanical aerators with a new fine-bubble diffused aeration system which was completed in August 2011. The chlorination and dechlorination systems were also be replaced; changing from chlorine gas to liquid injection of sodium hypochlorite for disinfection and sodium bisulfate for dechlorination.

The facility discharges from a multiport diffuser approximately 1550 feet offshore on the bottom of the Merrimack River and east of Half Tide Rock (See Figure 1). The collection system is 100% separate sanitary sewer and serves a total population of 18,800 (City of Newburyport, 17,000 and Town of Newbury, 1,800). There are five (5) categorical industrial users (CIUs) discharging to the collection system.

The facility's discharge outfall is listed below:

<u>Outfall</u>	<u>Description of Discharge</u>	<u>Receiving Water</u>
001	Treated Effluent	Merrimack River

## 3. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs) submitted for September 2009 through August 2011, and the October 2010 application, are shown in Tables 1 and 2 of this fact sheet, respectively.

#### **4. LIMITATIONS AND CONDITIONS**

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

#### **5. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATIONS**

##### **5.1. *Process Description***

The Newburyport Water Pollution Control Facility (WPCF) is a secondary wastewater treatment facility, which discharges to the Merrimack River (Figure 2). Raw wastewater enters the plant through either a 30-inch diameter influent sewer or via a force main from Plum Island, and is diverted into one of three influent channels, each equipped with a sewage grinder. The influent channels discharge to a common channel which flows into a single grit removal chamber. Wastewater from the grit chamber is then transported via 24-inch gravity sewer main to one of two influent wet wells. The flow is then pumped up to a distribution structure at the primary clarifiers.

From the primary clarifiers, the wastewater flows by gravity to the secondary treatment system, which includes the activated sludge process, consisting of mechanical aeration, secondary settling, and return/waste activated sludge pumping. The activated sludge process takes place in four aeration basins, each equipped with two mechanical aerators. The aeration tank effluent is then directed to the two final clarifiers. Final effluent from the clarifiers then flows to one of two chlorine contact tanks for disinfection prior to being discharged to the Merrimack River. The disinfection process includes both chlorination and dechlorination. Due to the tidal influence of the river, effluent flow is pumped during high tide.

Primary and waste-activated sludge is co-settled in the primary clarifiers prior to thickening in one of two gravity thickener tanks. The thickened sludge is then dewatered by a belt filter press and then trucked to the Ipswich composting facility operated by Agresource, Inc. Currently, grit removed from the influent is mixed with the dewatered sludge and then hauled away for final disposal. Following the completion of phase 2 of the upgrade, grit will no longer be mixed with the sludge and disposal will be separate.

As previously stated, the facility is currently being upgraded, and the first phase of improvements is substantially complete. The first phase included replacement of the mechanical aerators with a fine-bubble diffused aeration system. The chlorination and dechlorination systems have been replaced, changing the chlorination system from chlorine gas to liquid injection of sodium hypochlorite, and the dechlorination system from sulfur dioxide gas to liquid injection of sodium bisulfate. A second phase of improvements is scheduled to begin construction next spring, including replacing the sludge dewatering process will be replaced in its entirety. The existing belt filter presses will be replaced with two Fournier rotary screen presses. In addition, the existing grit removal system will be replaced with a new grit washing and disposal system.

## 5.2. *Flow/Capacity Issues*

At the time of the last permit reissuance, the City of Newburyport, in coordination with the Town of Newbury, was in the process of extending the sewer collection system to accept flows from newly sewered areas of Plum Island, which is split between the municipalities of Newburyport and Newbury. Commenters on the draft NPDES permit expressed concerns about the ability of the Newburyport Wastewater Treatment Plant to accept and treat these additional flows without exceeding the facility flow limit or other effluent limitations. EPA reviewed the concerns and determined that the flows from the sewer extension would not require an increase in the facility's effluent limitations; and so, EPA did not include any specific conditions regarding the sewer extension in the final permit. The sewer extension project was reviewed and approved by the Commonwealth of Massachusetts<sup>1,2</sup> in accordance with state law.

Commenters also identified inconsistencies in the flow records from the treatment facility. The Newburyport WWTP has both an influent and an effluent flow meter. Significant differences were noted between the flow rates measured at the two meters. In order to address this issue, the City of Newburyport conducted several studies including the temporary installation of a Doppler ultrasonic meter, volumetric testing and calibration of the meters.

The Doppler metering was conducted in the spring of 2001<sup>2</sup>. Doppler measurements were made for several days just upstream of the effluent meter. The Doppler meter was then relocated for a few more days, just upstream of the influent meter. The measurements were much better correlated with the influent flow meter than the effluent flow meter. There was an 80-90% correlation with the influent meter and only a 60% correlation with the effluent meter.

Following the Doppler metering, both meters were recalibrated on May 30, 2001. The influent meter was re-calibrated and was confirmed to be accurate to less than 1% error. A significant zero error was found in the effluent meter transmitter. It was corrected and the meter was re-calibrated and was confirmed to be accurate to less than 1% error.

In order to confirm the accuracy of the influent meter, a volumetric test was also conducted in the spring of 2001. During the volumetric test, all plant flows were diverted into an empty aeration basin. Flow readings were taken concurrently with each 6 inch increase in basin stage. The test showed that the influent meter was accurate to within 1%. The effluent meter, however, showed a significant error of +13% when compared with the influent meter. The error in the effluent meter was reported by the City's consultant to be the result of less than ideal installation conditions. Since 2002, the permittee, with concurrence from MassDEP, has used the more accurate influent meter for NPDES reporting.

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<sup>1</sup> November 30, 2001, Certificate of the Secretary of Environmental Affairs on the Final Environmental Impact Report for Utility Service to Plum Island, Newbury/Newburyport, EOEPA Project Number 12416, Commonwealth of Massachusetts, EOEPA, MEPA Office.

<sup>2</sup> June 8, 2001, Ltr to Thomas D. Mahin, MassDEP; RE: Newburyport Wastewater Treatment Facility Flow Metering Evaluation, from Kent M. Nichols, Jr., P.E., Project Manager, Weston and Sampson Engineers, Inc.

The permittee conducted subsequent volumetric testing with the following results for the influent meter:

<b>Year</b>	<b>Error</b>
2003	+5.58%
2004	+0.06%
2005	±2.15%
2006	-0.27%
2007	-.076%
2008	+2%
2009	-2.5%
2010	+18.71% (see text)
2011	-12.2%

These errors are minimal when compared with industry wide expectations of +/- 10% with the exception of the 2010 and 2011 calibrations. The 2010 result is not consistent with the results of the past seven (7) years. The permittee and its consultant theorize that errors (i.e. all flows not diverted to the tank or a change in level due to rising flows in a basin back in the plant) may have occurred during the testing; however, this is only speculation. The permittee tested again in August 2011 following the upgrade of the aeration system. The results showed that a -12.2% error existed on the plant recorder. The error offsets the 2010 error and may have been caused by the plant water system being left on during the test.<sup>3</sup>

The 2004 NPDES permit reissuance required the City of Newburyport to conduct four (4) instrument calibrations and one (1) volumetric calibration per year. The requirement also allowed the permittee to request a reduction in the frequency of calibration. In August 2009, EPA, in response to a request by the City of Newburyport, reduced the frequency of the meter calibrations to one per year and maintained the volumetric test frequency at once per year<sup>4</sup>.

As part of the WPCF upgrade, a new effluent flow meter was installed. The installation and calibration reports for the new meter were submitted to MassDEP and EPA, and found acceptable. The permittee received authorization to use the new meter for NPDES reporting on January 3, 2012<sup>5</sup>. Accordingly, the special flow meter volumetric testing and calibration requirements are not included in the draft permit.

### **5.3. Co-permitting**

The Newburyport WPCF treats wastewater from the municipalities of Newburyport and

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<sup>3</sup> August 23, 2011, Email from Gilbert A. Parrot, New England Instrument Service to Joseph Dugan, Chief Operator, Newburyport WWTF.

<sup>4</sup> August 17, 2009, Ltr from Roger A. Janson, EPA to Joseph Dugan, City of Newburyport, Re: Request for reduction of meter calibration under NPDES Permit MA0101427.

<sup>5</sup> January 3, 2012, Ltr from Brian Pitt, EPA to Joseph Dugan, City of Newburyport, Re: NPDES #MA0101427, Request for use of new effluent meter for NPDES reporting.

Newbury. Recently, EPA Region 1 has included municipalities who own and operate a sewer collection system but do not own or operate the treatment facility as limited co-permittees to assure that the collection system owned by the municipality is properly operated and maintained. The Town of Newbury was not included as a co-permittee in the current permit as the collection system from Newbury to the Newburyport WWTF was not complete at the time of permit issuance.

EPA will not include the Town of Newbury as a co-permittee in this proposed permit in deference to the Environmental Appeals Board decision in *In re Upper Blackstone Water Pollution Abatement District*, NPDES Appeal Nos. 08-11, 08-12, 088-13, 08-14, 08-15, 08-16, 08-17, 08-18, 09-06 (EAB May 28, 2010), 14 E.A.D.). In that decision, the Board remanded the co-permittee requirements of that permit to EPA for further articulation of the statutory, regulatory, and factual bases for expanding the scope of NPDES authority beyond the treatment plant owner and operator to separately owned and operated collection systems. EPA is currently developing an appropriate response to the questions posed by the Board on remand.

As was the case under the current permit, the City of Newburyport is responsible for preventing unauthorized discharges from its system, and must ensure that excess inflow and infiltration (regardless of the origin) does not cause (or contribute) to violations of effluent limitations or other permit requirements. If the City of Newburyport finds it appropriate to request that Newbury make certain improvements to its collection system in order to facilitate Newburyport's compliance with permit requirements, the City may refer its concerns directly to Newbury pursuant to intermunicipal agreement or other means outside the NPDES permit..

If EPA later determines that it is appropriate to include co-permittee requirements, EPA may take further action according to the procedures of 40 C.F.R. part 124.

## **6. Statutory and Regulatory Authority**

### ***6.1. General Requirements***

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

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

### **6.1.1. Technology-based Requirements**

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

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

### **6.1.2. Water Quality Standards; Designated Use; Outfall 001**

The Merrimack River, in the vicinity of the discharge, is classified in the Massachusetts Surface Water Quality Standards (314 CMR 4.00) as a Class SB water, and is designated for Shellfishing in the Table 20 of 314 CMR 4.06. Class SB waters are designated as habitat for fish, other aquatic life and wildlife, 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 waters shall have consistently good aesthetic value. The Merrimack River, downstream of the discharge, was approved for restricted shellfishing in 2006 by the Massachusetts Division of Marine Fisheries.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL). This segment of the Merrimack River is listed on the Massachusetts 2008 Integrated List of Waters (303d) as needing a TMDL for priority organics and pathogens. Presently, the MassDEP has not developed a TMDL for this segment of the Merrimack River.

#### **6.1.2.1. Massachusetts Division of Marine Fisheries Shellfishing Designation<sup>6</sup>**

In 2006, the Massachusetts Division of Marine Fisheries (*Marine Fisheries*) re-classified and re-opened Merrimack River shellfish flats in Newburyport and Salisbury to the conditional harvest of soft-shell clams. These flats are located downstream of the Newburyport WWTF. The flats had been shut down for 20 years due to bacterial contamination. “Water quality testing conducted by *Marine Fisheries* confirms that the River meets moderately contaminated criteria during dry weather, for a *Conditionally Restricted* classification. Results also demonstrate rainfall cause intermittent and predictable periods of gross bacterial pollution. The resultant runoff from rain produces a sharp increase in bacteria above threshold levels.<sup>7</sup>” Softshell clams maybe harvested under special license but need depuration at the Shellfish Purification Plant at Plum Island Point, Newburyport.

The previous permit required the permittee to establish and implement an Immediate Warning System for the immediate notification of *Marine Fisheries* if un-disinfected effluent was discharged from the facility. According to *Marine Fisheries* (personal communication with Jack Schwartz, 5/2/2011), the system developed is adequate and the City and *Marine Fisheries* continue to work cooperatively.

#### **6.1.2.2. Available Dilution**

Where appropriate, water quality based limitations are established with the use of a calculated available dilution. The Newburyport WWTF discharge is from a multiport diffuser located on the bottom of the Merrimack River estuary. Dilution calculations are complicated by the dynamic tidal environment.

In the summer of 1997, a dye study was conducted at the mouth of the Merrimack River by the US Department of Health and Human Services at the request of *Marine Fisheries*. The purpose of the study was to trace the path of effluent as it traveled from the Newburyport WWTF outfall toward the mouth of the Merrimack River. The study approximated a dilution factor of 30. EPA ran a CORMIX model simulation of the diffuser system in 2003 to and determined a similar dilution factor. This dilution was used in the previous permit and the applicable variables have not changed. The same dilution is used in the draft permit.

As part of the phase one upgrade of the facility, divers removed plywood panels that had been left in place in several of the diffuser heads. The permittee states that the dilution factor of 30 may be understated; however, the COMIX modeling discussed previously assumed the operation of all diffuser heads. EPA has used a dilution factor of 30 in the water quality-based limit calculations in the draft permit.

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<sup>6</sup> The Massachusetts Division of Marine Fisheries (MADMF) shellfishing designation is not the same as the shellfishing designation in the MA Surface Water Quality Standards (MASWQS). Waters designated for shellfishing in the MASWQS are subject to shellfishing water quality criteria regardless of whether shellfishing areas in those waters are approved for shellfishing by MADMF.

<sup>7</sup> MA Division of Marine Fisheries, 2006, Marine Fisheries Advisory “Marine Fisheries Announces the Conditional Re-Opening of Merrimack River Clam Flats”

### 6.1.3. Permit Basis and Explanation of Effluent Limitations

#### 6.1.3.1. Flow

The proposed flow limit is based on the average daily design flow of the treatment plant, which is 3.4 mgd. Flow is to be measured continuously. The permittee shall report the annual average monthly flow using the annual rolling average method (See Permit Footnote 2). The average monthly and maximum daily flow for each month shall also be reported.

A review of 24 months of DMR data shows that the reported monthly flows have been in compliance with the 3.4 mgd flow limit (range = 2.30-3.10 mgd, avg = 2.76 mgd, n=24).

#### 6.1.3.2. Conventional Pollutants

##### 6.1.3.2.1. Biochemical Oxygen Demand (BOD<sub>5</sub>)

The draft permit proposes the same BOD<sub>5</sub> limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average BOD<sub>5</sub> concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily BOD<sub>5</sub> value each month, but does not establish an effluent limit. The mass-based limitations for BOD are based on a 3.4 mgd design flow. The monitoring frequency continues to be three times per week.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of BOD<sub>5</sub> concentration limits. Based on the DMR data, the average values for BOD<sub>5</sub> monthly average, weekly average and maximum daily were 24.73 mg/l (range 15-30 mg/l; n=24), 30.87 mg/l (20.70-45 mg/l; n=24) and 38.58 (25-79 mg/l; n=24), respectively.

BOD Mass Loading Calculations:

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

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

L = Maximum allowable load in lbs/day.

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

Reporting periods are average monthly and weekly and daily maximum.

DF = Annual average design flow of facility (3.4 mgd).

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

(Concentration limit) [30] X 8.34 (Constant) X 3.4 (Design flow) = 851 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 3.4 (Design flow) = 1276 lb/day



**6.1.3.2.2. Total Suspended Solids (TSS)**

The draft permit proposes the same TSS limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average TSS concentration of 30 mg/l and a weekly average concentration of 45 mg/l. The draft permit also requires the permittee to report the maximum daily TSS value each month, but does not establish an effluent limit. The mass-based limitations for TSS are based on a 3.4 mgd design flow. The monitoring frequency continues to be three times per week.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of TSS concentration limits. Based on a review of 24 months of DMR data, the average values for TSS monthly average, weekly average and maximum daily were 16.01 mg/l (range 10.5-25.60 mg/l; n=24) , 24.08 mg/l (15.00-46.90 mg/l; n=24) and 35.95 (16.90-91.30 mg/l; n=24), respectively.

There was one (1) violation of the weekly average concentration limit of 45 mg/l with a reported value of 46.90 mg/l in December 2010. The average monthly value reported was 911.2 lbs/day, which is over the limit of 851 lbs/day. The average weekly value reported was 1455.8 lbs/day, which is over the 1276 lbs/day limit.

TSS Mass Loading Calculations:

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

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

L = Maximum allowable load in lbs/day.

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

Reporting periods are average monthly and weekly and daily maximum.

DF = Annual average design flow of facility (3.4 mgd).

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

(Concentration limit) [30] X 8.34 (Constant) X 3.4 (Design flow) = 851 lb/day

(Concentration limit) [45] X 8.34 (Constant) X 3.4 (Design flow) = 1276 lb/day

**6.1.3.2.3. Eighty-Five Percent (85%) BOD<sub>5</sub> and TSS Removal Requirement**

The provisions of 40 CFR "133.102(a)(3), (4) and (b)(3) requires that the 30 day average percent removal for BOD<sub>5</sub> and TSS be not less than 85%. This requirement was included in the previous permit.

A review of DMR data shows that BOD<sub>5</sub> and TSS removal percentages average 91 % and 93%, respectively. There have been no violations of the 85% removal

requirement for BOD<sub>5</sub> or TSS over the last 24 months.

**6.1.3.2.4. pH**

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

A review of DMR data submitted over the last 24 months shows that there have been no violations for pH. Based on the DMR data, the pH values have ranged from 6.5-7.64 standard units.

**6.1.3.2.5. Bacteria**

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

**6.1.3.2.5.1. Fecal Coliform**

The current permit includes fecal coliform bacteria effluent limitations that were established using the criteria in the MA SWQS at 314 CMR 4.05(4)(b) that were in effect at the time the current permit was modified in 2006. These criteria have not changed, and require that SB waters designated for shellfishing not exceed a fecal coliform median or geometric mean MPN of 88 per 100 mg/l nor shall more than 10% of the samples exceed a MPN of 260 per 100 ml.

The current (and draft) permit include a monthly geometric mean limit of 88 colony forming units (cfu) per 100 ml, a requirement that not more than 10 percent of the samples in any month exceed 260 cfu/100 ml and a maximum daily limit of 400 cfu/ml. The maximum daily limit has been carried forward from previous permits, consistent with antibacksliding requirements.

A review of DMR data shows that the monthly geometric mean fecal coliform bacteria discharge range from 2.48 to 82.45 cfu/100 ml. The maximum value reported over the last 24 months is 274 cfu/100 ml. There have been no violations of the fecal coliform requirement over the last 24 months.

A daily sampling frequency has been maintained in the draft permit to ensure protection of the shellfishing use.

**6.1.3.2.5.2. *Enterococci***

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

As part of the application process, the Permittee conducted a single test for enterococci on September 24, 2009. The result was less than 10 cfu /100 ml.

As this is a new requirement, the draft permit includes a compliance schedule of one year to attain the limit.

**6.1.3.2.6 *Dissolved Oxygen***

The current permit as modified in 2006 requires the permittee to monitor dissolved oxygen five (5) days per week. The permit also allowed the permittee to request a reduction in frequency or elimination of the monitoring requirement if, after one year of monitoring the data establishes that the effluent DO is consistently greater than 5.0 mg/l

After five (5) years of monitoring, the permittee requested an elimination of the monitoring requirement. The request was dated April 7, 2011. Since EPA was in the process of the drafting this permit, the elimination of the DO requirement is being addressed in this fact sheet.

Given that the effluent DO is consistently greater than 5.0 mg/l, there is no reasonable potential for the discharge to cause a violation of the water quality standard for DO; and therefore, no limit or further monitoring is required by the draft permit.

**6.1.3.3. *Non-conventional pollutants***

**6.1.3.3.1. *Total Residual Chlorine***

The draft permit includes proposed total residual chlorine limitations that are calculated using national recommended water quality criteria. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. The acute (daily maximum) water quality criterion for chlorine is 13 ug/l and the chronic (monthly average) criterion is 7.5 ug/l.

Total Residual Chlorine Limitations:

(acute criteria \* dilution factor) = Acute (Maximum Daily)  
(13 ug/l \* 30) = 390 ug/l = 0.39 mg/l

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) = \text{Chronic (Monthly Average)} \\ &(7.5 \text{ ug/l} * 30) = 225 \text{ ug/l} = 0.23 \text{ mg/l} \end{aligned}$$

Compliance with the effluent limits are based on the grab samples of the discharge. However, the current permit requires the permittee to continuously monitor total residual chlorine. This condition was established to ensure that the facility consistently maintains an appropriate level of disinfection and dechlorination. A review of the DMRs, monthly reports and graphs from the continuous chlorine monitoring indicate that the DMR reporting accurately captures the total residual chlorine levels; the permittee shall continue to report the results from the continuous monitoring to assure that the facility maintains the appropriate disinfection.

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of Total Residual Chlorine limits. Based on the DMR data, the average values for Total Residual Chlorine average monthly and maximum daily were 0.05 ug/l (range 0.03-0.08 ug/l; n=24) and 0.23 ug/l (range 0.06-0.36 ug/l; n=24), respectively.

#### **6.1.3.3.2. Copper**

Certain metals such as copper can be toxic to aquatic life. The maximum daily discharge of copper reported by this facility in the 2010 application was 0.02 mg/l. Because this discharge concentration does not exceed the limits calculated to meet water quality standards, the discharge of copper does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria (see calculations below), and no limits are required.

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Chronic (Monthly Average)} \\ &\text{Limit} \\ &(3.1 \text{ ug/l} * 30) / 0.83 = 112 \text{ ug/l} = 0.112 \text{ mg/l} > 0.02 \text{ mg/l} \\ &(\text{acute criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Acute (Maximum Daily)} \\ &\text{Limit} \\ &4.8 \text{ ug/l} * 30 / 0.83 = 173.5 \text{ ug/l} = 0.174 \text{ mg/l} > 0.02 \text{ mg/l} \end{aligned}$$

#### **6.1.3.3.3. Zinc**

Zinc can be toxic to aquatic life. The maximum daily discharge of zinc reported by this facility in the 2010 application was 0.06. Because this discharge concentration is less than the limits calculated to meet water quality standards, the discharge of zinc does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria, and no limits are required.

$$\begin{aligned} &(\text{chronic criteria} * \text{dilution factor}) / \text{conversion factor} = \text{Chronic (Monthly Average)} \\ &\text{Limit} \\ &(81 \text{ ug/l} * 30) / 0.946 = 2568.7 \text{ ug/l} = 2.569 \text{ mg/l} > 0.06 \text{ mg/l} \end{aligned}$$

(acute criteria \* dilution factor)/conversion factor = Acute (Maximum Daily) Limit  
 $(90 \text{ ug/l} * 30) / 0.946 = 2854.1 \text{ ug/l} = 2.854 \text{ mg/l} > 0.06 \text{ mg/l}$

#### **6.1.3.3.4. Cyanide**

Cyanide can be toxic. The maximum daily discharge of cyanide reported by this facility in the 2010 application was 0.02 mg/l. Because this discharge concentration is less than the limits calculated to meet water quality standards, the discharge of zinc does not have the reasonable potential to cause or contribute to exceedances of the applicable water quality criteria, and no limits are required.

(chronic criteria \* dilution factor) = Chronic (Monthly Average) Limit  
 $(1 \text{ ug/l} * 30 = 30 \text{ ug/l} = 0.03 \text{ mg/l} > 0.02 \text{ mg/l}$

The acute criterion is the same as the chronic criterion, so the calculation is the same.

#### **6.1.3.3.5. Total Phenolic Compounds**

Total Phenolic Compounds can be toxic to aquatic life. The maximum daily discharge of total phenolic compounds reported by this facility in its 2010 application was 0.05 mg/l. This value is significantly less than the national recommended water quality criteria of 10 mg/l for water + organisms and 860 mg/l for organisms only. Based on the application data there is no reasonable potential for total phenol to exceed the criteria and therefore, no effluent limit is required.

#### **6.1.3.3.6. Nutrients**

The current permit requires the permittee to monitor for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite. These requirements were established in response to public comment and the low dissolved oxygen measurements that were reported in the 2002 application that were later determined to be inaccurate due to the sampling location. As previously discussed in the Section 6.1.3.2.6, Dissolved Oxygen levels that have been reported in compliance with the current permit are consistently higher than 5.0 mg/l.

The National Estuarine Eutrophication Assessment Update<sup>8</sup> did not have data available for the assessment of the Merrimack River or its estuary. It did, however, identify Plum Island Sound, south of the Newburyport WWTP, as experiencing a moderate high level of overall eutrophication. The Sound is characterized by high chlorophyll-a and moderate nuisance /toxic blooms.

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<sup>8</sup> 2007, Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner, 2007. Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26. National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

Although Plum Island Sound is outside the immediate vicinity of the Newburyport WPCF, EPA has maintained the reporting requirements for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite concentrations and added requirements mass-based reporting in the proposed permit.

#### **6.1.3.4. Whole Effluent Toxicity (WET)**

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

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

National studies conducted by the EPA have demonstrated that domestic sources contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Based on the potential for toxicity from domestic and industrial sources, the state narrative water quality criterion, and in accordance with EPA national and regional policy and 40 C.F.R. § 122.44(d), the draft permit includes a whole effluent acute toxicity limitation ( $LC_{50} = 100\%$ ). (See also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", March, 1991.)

The Massachusetts Department of Environmental Protection's Division of Watershed Management's toxics policy requires toxicity testing for all major dischargers, such as the City of Newburyport WWTF. In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentration in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into the Merrimack River in amounts which would affect aquatic or human life.

The draft permit carries forward a requirement for quarterly acute toxicity tests using the species Mysid Shrimp and Inland Silverside. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times per year. The months the tests are to be conducted have been changed to January, April, July and October, consistent with the Massachusetts Watershed Initiative.

A review of 2 years of WET results shows consistent compliance for both Menidia and Mysid Bahia. There was one violation in the last 2 years with the February 2010 Menidia test.

The LC50 of  $\geq 100\%$  is established by EPA/MassDEP policy for facilities with less than 100:1 dilution.

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

## 7. INFLOW/INFILTRATION REQUIREMENTS

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

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

The City of Newburyport submitted an Infiltration and Inflow Control Plan<sup>9</sup>, dated May 2007, in compliance with its current ND PES permit. The Plan included a full review of past investigations and repairs. Based on that review, a work plan and schedule for sewer system rehabilitation and future investigations was developed.

<b>NEWBURYPORT INFILTRATION AND INFLOW CONTROL PLAN (Revised May 2007)</b>	
<b>Fiscal Year</b>	<b>Tasks</b>
FY 2006-2007	Begin to implement inflow source reduction program <ul style="list-style-type: none"> <li>• Educational outreach program</li> <li>• Basement inspection plan</li> </ul> TV inspect 8,600 feet of sewer in subareas A,J,P & Q Inspect 136 manholes in subareas C,E,F,H,K,L,O,P & S Conducted limited house to house inspection program in subareas L,M & O
FY 2007-2008	Design and construction of projects to eliminate 14 public inflow sources Design and construction of 327 feet of sewers and 10 manholes in need of trenchless repairs.

<sup>9</sup> Metcalf & Eddy/AECOM, 2007, “Final Report, Submitted to City of Newburyport, MA, Sewer Department, Infiltration and Inflow Control Plan”

FY 2008-2009	Design and construction of sewer and manholes in need of replacement as determined by TV and manhole inspection work performed in FY 2006-2007.
FY 2009-2010	Continuous monitoring of sewage flows should be performed in the Spring of 2010
FY 2010-2011	Prepare a focused I/I reduction program based on flow monitoring performed in FY 2009-2010.

<b>Summary of Newburyport Annual Reports of I/I Work</b>			
<b>Year</b>	<b>Task</b>	<b>Cost</b>	<b>Total for CY</b>
Calendar Year 2007	Hydraulic cleaning of 34,830 feet of existing sewer	\$26,100	
	Rehabilitation of 12 existing sewer manholes	\$9900	
	Rehabilitation of existing sewers with structural defects	\$11,700	
	TV inspection of sewers on 5 different streets	\$3900	
	Preparation and submittal of I/I Control Plan	\$6000	\$57,600

Calendar Year 2008	Hydraulic cleaning of 52,100 feet of existing sewer	\$39,100	
	Rehabilitation of 20 existing sewer manholes	\$18,600	
	Replacement of 220 feet of existing sewer	\$42,500	
	TV inspection of 3,100 feet of sewers on 9 different streets	\$2400	
	Inspected properties for illegal sump pump in association with the system wide replacement of water meters.	NA	
	Purchased a flow meter to measure flows to the WWTF from the Plum Island vacuum sewer system	\$5000	\$107,600
Calendar Year 2009	Hydraulic cleaning of 8,000 feet of existing sewer	\$14,720	
	Cleaned all 15 lift stations, May and October	(combined with above)	
	Repair work of Plum Island vacuum system	(not reported)	
	Adjustment of manhole frame and cover for existing low-lying manhole on Plum Island	\$2500	
	Replacement of 80 feet of existing sewer	\$18,000	



	Indicated design work for 3,520 feet of replacement sewer	\$44,370	\$79,590
Calendar Year 2010	Hydraulic cleaning of 71,400 feet of existing sewer	\$78,120	
	Cleaned all 15 lift stations, semi-annually	(combined with above)	
	Cleaned and TV inspected approximately 1,770 feet of existing sewer	\$2500	
	Purchased a new sewer jet truck	\$150,000	\$230,620

The draft permit includes requirements for the permittee to continue to control infiltration and inflow (I/I), and to revise its current I/I control program consistent with requirements in Part I.C of the draft permit, Operation and Maintenance of the Sewer System.

## 8. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

The standard permit conditions for “Proper Operation and Maintenance”, set forth at 40 C.F.R. §122.41(e), require the proper operation and maintenance of permitted wastewater systems and associated facilities to achieve permit conditions. The requirements at 40 C.F.R. §122.41(d) impose a “duty to mitigate” upon the permittee, which requires that “all reasonable steps be taken to minimize or prevent any discharge violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment”.

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.D. and I.E. of the draft permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of unauthorized discharges including SSOs, maintaining an adequate maintenance staff, performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined sewers are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the wastewater treatment plant, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

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

## 9. SLUDGE INFORMATION AND REQUIREMENTS

The draft permit requires that the permittee comply with all existing federal and state laws that apply to sewage sludge use and disposal practices and with the Clean Water Act Section 405(d) technical standards (see 40 CFR Section 503) and that it submit an annual reports describing its sludge disposal practices. Sludge from the treatment facility is currently sent to AgreSource Inc. Composting Facility in Ipswich, MA. Because the final disposal or use of the permittees sludge is done by others, the permittee is not currently subject to the requirements of 40 CFR Section 503. However, if the ultimate sludge disposal method changes, the permittee is responsible for complying with the applicable state and federal requirements.

The draft permit requires the permittee to submit an annual report by February 19<sup>th</sup>.

## **10. INDUSTRIAL USERS**

The permittee is required to administer a pretreatment program based on authority granted under 40 C.F.R. Part 403 and Section 307 of the CWA. The permittee's pretreatment program received EPA approval on September 28, 1984 and, as a result, appropriate pretreatment program requirements were incorporated into the existing permit which were consistent with the approval and federal pretreatment regulations in effect when the permit was issued.

Periodically, the Federal Pretreatment Regulations in 40 C.F.R. Part 403 are amended. Those amendments establish new requirements for implementation of the pretreatment program. Upon reissuance of this NPDES permit, the permittee is obligated to modify its pretreatment program to be consistent with the 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 NPDES permit.

In addition to the requirements described above, the draft permit requires the permittee to submit to EPA in writing, within 180 days of the effective date of the permit, a description of proposed changes 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. Lastly, the permittee must continue to submit, **annually on March 1<sup>st</sup>** a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

## **11. ANTI-BACKSLIDING**

Anti-backsliding as described in Section 402 (o) of the Clean Water Act and 40 CFR §122.44(l)(1), requires reissued permits to contain limitations as stringent than those of the previous permit. There are limited exceptions to this requirement..

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

## 12. ANTIDegradation

The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. The Commonwealth has also developed implementation procedures<sup>10</sup>. All existing uses of the Merrimack River must be protected. EPA believes that the antidegradation policy has been met because the draft permit is being reissued with allowable discharge limits as or more stringent than the current permit with the same parameter coverage.

## 13. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA’s action or proposed actions that it funds, permits, or undertakes, “may adversely impact any essential fish habitat,” 16 U.S.C. § 1855(b). The Amendments broadly define “essential fish habitat” (EFH) as: “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity,” 16 U.S.C. § 1802(10). “Adverse impact” means any impact which reduces the quality and/or quantity of EFH, 50 C.F.R. § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. *Id.*

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. § 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

### 13.1. *EFH Species*

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

#### **Name of Estuary/ Bay/ River: Merrimack River, Massachusetts**

**10 x 10 latitude and longitude squares included in this bay or estuary or river (southeast corner boundaries):**

4250/7040; 4250/7050; 4240/7040; 4240/7050; 4240/7100; 4240/7110

Species	Eggs	Larvae	Juveniles	Adults	Spawning
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<sup>10</sup> Haas, Glenn, MassDEP, 2009, “Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00”.

					Adults
Atlantic salmon ( <i>Salmo salar</i> )			F,M	F,M	
pollock ( <i>Pollachius virens</i> )	M	M	M		
whiting ( <i>Merluccius bilinearis</i> )	M				
white hake ( <i>Urophycis tenuis</i> )	M				
winter flounder ( <i>Pleuronectes americanus</i> )	M	M	M	M	M
yellowtail flounder ( <i>Pleuronectes ferruginea</i> )	S	S			
Atlantic halibut ( <i>Hippoglossus hippoglossus</i> )	S	S	S	S	S
Atlantic sea herring ( <i>Clupea harengus</i> )		M	M		
Atlantic mackerel ( <i>Scomber scombrus</i> )	M	M			

S ≡ The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > 25.0‰).

M ≡ The EFH designation for this species includes the mixing water / brackish salinity zone of this bay or estuary (0.5 < salinity < 25.0‰).

F ≡ The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0 < salinity < 0.5‰).

The Merrimack River estuary in the vicinity of the Newburyport Wastewater Treatment Facility discharge is designated essential fish habitat (EFH) for 9 finfish species. EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to the EFH species present for the following reasons:

- This is a reissuance of an existing permit;
- The dilution factor of 30;
- The facility discharges from a multiport diffuser approximately 1,550 feet offshore on the bottom of the Merrimack River. This section of the river is characterized by high tidal energy, which promotes dispersion of the effluent from the diffuser. These factors provide a sufficient zone of passage unaffected by the discharge to allow the movement of EFH species;
- Draft permit limits specifically protective of aquatic organisms have been established for chlorine, based on EPA water quality criteria;
- The facility withdraws no water from the Merrimack River, so no life stages of EFH species are vulnerable to impingement or entrainment from this facility;

- Acute toxicity tests will be conducted four times per year to ensure that the discharge does not present toxicity problems;
- The draft permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the draft permit were developed to be protective of all aquatic life;
- The draft permit prohibits violations of the state water quality standards.

EPA believes that the conditions and limitations contained within the draft permit adequately protect all aquatic life, including those species with EFH designation. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted.

NMFS will be notified and EFH will be reinitiated if adverse impacts to EFH are detected as a result of this permit action or if new information becomes available that changes the basis for these conclusions.

#### **14. ENDANGERED SPECIES ACT**

The Endangered Species Act of 1973, as amended (ESA), imposes requirements on Federal agencies related to the potential effects of their actions on endangered or threatened species of fish, wildlife, or plants (listed species) and their designated “critical habitat.”

Section 7 of the ESA requires, in general, that Federal agencies insure that any actions they authorize, fund, or carry out, in the United States or upon the high seas, are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated “critical habitat” for those species. Federal agencies carry out their responsibilities under the ESA in consultation with, and assisted by, the Departments of Interior (DOI) and/or Commerce (DOC), depending on the species involved. The United States Fish & Wildlife Service (USFWS) of the DOI administers Section 7 consultations for freshwater species, while the National Marine Fisheries Service (NMFS) of DOC does so for marine species and anadromous fish.

The federal action being considered in this case is EPA’s proposed issuance of a new NPDES permit to the city of Newburyport to discharge effluent from the Newburyport Wastewater Treatment Plant (WWTP). The new permit is intended to replace the existing NPDES permit in governing wastewater discharges from the City’s WWTP, as discussed above.

The Newburyport WWTP is a 3.4 million gallon per day (mgd) secondary wastewater treatment plant. The facility discharges from a multiport diffuser approximately 1,550 feet offshore on the bottom of the Merrimack River, approximately 4.8 kilometers upstream of the mouth of the river (See Figure 1). The collection system is 100% separate sanitary sewer and serves a total population of 18,800 (City of Newburyport, 17,000 and Town of Newbury, 1,800). There are five (5) categorical industrial users (CIUs) discharging to the collection system.

As the federal agency charged with authorizing the discharge from this facility, EPA has reviewed available information and determined that a number of federally listed species inhabit (seasonally) waters in the broad general area of the relevant discharge and further analysis is necessary with regard to these species. Coastal areas of Massachusetts provide habitat for a number of federally protected marine species, including: mammals (whales: North Atlantic Right, Humpback, Fin, Sei, Sperm, Blue – all endangered); reptiles (sea turtles: Kemp’s Ridley, Leatherback, Green – all endangered; Loggerhead – Threatened but proposed for listing as endangered).

However, EPA does not consider the area influenced by facility discharge to be suitable habitat for the species listed above. Based on the normal distribution of these species, it is unlikely that any of the coastal NMFS listed species identified above would be expected to be present in the vicinity of the Newburyport WWTP discharge in the Merrimack River. EPA has made the determination that these protected species are not present in any area influenced by the discharge.

It is EPA’s understanding that the only federally listed species that has the potential to occur in the vicinity of the Newburyport WWTP is the shortnose sturgeon (*Acipenser brevirostrum*). Because this species may be affected by the discharges authorized by the proposed permit, EPA must consult with NMFS under Section 7 of the ESA. EPA has evaluated the potential impacts of the permit action on shortnose sturgeon. On the basis of this evaluation, which is discussed below, EPA’s preliminary determination is that this action “is not likely to adversely affect listed species or critical habitat.”<sup>11</sup> 16 C.F.R. § 402.13(a). As a result, EPA will, in a separate letter, request NMFS’s written concurrence with EPA’s determination conclusion in order to complete the consultation with NMFS on an “informal” basis. *See* 16 C.F.R. § 402.13(a). If NMFS does not concur, then “formal consultation” will be necessary.

#### **14.1. Shortnose Sturgeon in the Merrimack River**

According to information presented in the Final Recovery Plan for the Shortnose Sturgeon<sup>12</sup> studies done in 1989 and 1990 indicated that the Merrimack River supports a foraging, or total adult population, of less than 100 fish. Elsewhere in the document, a more specific estimate of approximately 33 adult shortnose sturgeon is recorded for the Merrimack River. These anadromous fish are benthic omnivores. In the Merrimack River, adults are thought to remain in freshwater all year, but some adults briefly enter low saline river reaches in May-June, then return upriver. The “concentration areas” used by fish in the Merrimack were identified as reaches where natural or artificial features cause a decrease in river flow, possibly creating suitable substrate conditions for freshwater mussels<sup>13</sup>, a major prey item for

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<sup>11</sup> A project can be considered “unlikely to adversely affect” a listed species “when direct or indirect effects of the proposed project on listed species are expected to be discountable, insignificant or completely beneficial.” August 20, 2009, Letter from Patricia A. Kurkul, Regional Administrator, NOAA, National Marine Fisheries Service, Northeast Region, to Melville P. Cote, EPA Region 1 (“NOAA’s August 20, 2009, Rockport Consultation Letter”) (addressing ESA issues concerning EPA’s proposed NPDES permit for the Rockport, MA, POTW).

<sup>12</sup> National Marine Fisheries Service. 1998. Recovery Plan for the Shortnose Sturgeon (*Acipenser brevirostrum*). Prepared by the Shortnose Sturgeon Recovery Team for the National Marine Fisheries Service, Silver Spring, Maryland. 104 pages.

<sup>13</sup> Kieffer, M., and B. Kynard. 1993. Annual Movements of shortnose and Atlantic sturgeons in the Merrimack

adult sturgeon. The fish are generally associated with shallow and deep tidal channels and overwinter in deeper water. Spawning is thought to take place in the most upstream reach of the river used by the sturgeon, and channels are important for spawning. In the Merrimack River, spawning males have been found at a depth of 2.3 to 5.8 meters<sup>14</sup>.

Further information on the location and site-specific behavior of shortnose sturgeon in the Merrimack River was provided by Jessica Pruden of NOAA Fisheries and Micah Kieffer of the U.S. Geological Survey. The upstream extent of the species in the Merrimack River is the Essex Dam at Lawrence, at River Kilometer (RKM) 46. Tracking data indicated that the majority of the population resided between RKM 7 and 32<sup>15</sup>. Only a rare individual was observed outside of this range (one tagged individual made a brief movement upstream to RKM 35 in the summer of 1989)<sup>16</sup>. The Newburyport WWTP discharge is located at approximately RKM 5.

Spawning has been confirmed at Haverhill, MA (RKM 30–32). Spawning success was confirmed by the capture of two live embryos in 1990 at RKM 32<sup>17</sup>. Early life stages have also been collected, though no information exists on rearing habitat or success<sup>18</sup>.

Some of the post-spawning and non-spawning adults move downstream to the salt/freshwater interface (RKM 7–12) to forage and remained for as long as six weeks (through mid-June). During the remainder of the year, shortnose sturgeon occupy an 11-km reach (RKM 13–23 between Haverhill and Amesbury) with reversing currents during flood tides and a maximum salinity penetration to RKM 16<sup>19</sup>. Tagged adult shortnose sturgeon tracked between late November–March overwintered within an 11-km reach<sup>20, 21</sup>.

#### **14.2. Outfall Characteristics and Merrimack River Conditions**

As stated previously, the Newburyport WWTF discharge is from a multiport diffuser located approximately 1,550 feet offshore on the bottom of the Merrimack River estuary, at approximately RKM 5. A review of 24 months of DMR data shows that the reported monthly flows have been in compliance with the 3.4 mgd flow limit (range = 2.30-3.10 mgd, avg = 2.76 mgd, n=24). Dilution calculations are complicated by the dynamic tidal environment. In the summer of 1997, a dye study was conducted at the mouth of the Merrimack River by the US Department of Health and Human Services at the request of the Massachusetts Division of Marine Fisheries. The purpose of the study was to trace the path of effluent as it traveled from the Newburyport WWTP outfall toward the mouth of the Merrimack River. The study approximated a dilution factor of 30. This dilution was used in the previous permit and the applicable variables have not changed. The same dilution is used

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River, Massachusetts. Transactions of the American Fisheries Society 122:1088-1103.

<sup>14</sup> NMFS 1998.

<sup>15</sup> Kieffer and Kynard, 1993.

<sup>16</sup> Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

<sup>17</sup> Kieffer, M., and B. Kynard. 1996. Spawning of Shortnose Sturgeon in the Merrimack River. Transactions of the American Fisheries Society 125:179-186.

<sup>18</sup> Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

<sup>19</sup> Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

<sup>20</sup> Kieffer and Kynard, 1993.

<sup>21</sup> Jessica Pruden to John H. Nagle, 4 February 2011, in possession of John H. Nagle.

in this re-issuance.

Hydrographic studies were also performed in the Merrimack River in May and June of 1997 as part of the Newburyport WWTP permit renewal process. The studies confirm a high-energy tidal flux of water moving in and out of the river, with average tidal velocities of from 0.74 knots to 1.53 knots. A 7Q10 flow or other low flow estimate for this section of the Merrimack River is not appropriate because it is tidally influenced. The average Merrimack River flow during the hydrographic study was estimated to be approximately 5000 cubic feet per second (cfs).

Because of the high energy tidal movement of water in this reach of the Merrimack River, it is difficult to pinpoint a meaningful zone of influence or discharge plume in the river resulting from the effluent of the bottom diffuser. However, descriptive information regarding the outfall and the river in the vicinity of the facility may provide a general assessment of the influence of the discharge. For example, the maximum allowed flow from the outfall bottom diffuser is 5.3 cfs (3.4 mgd). This is only 0.1% of the average Merrimack River flow of approximately 5000 cfs in the area. Also, the bottom diffuser is located approximately 1,550 feet offshore in an area of the river that is approximately 2,300 feet wide. Based on this information, the minimal discharge plume is not likely to adversely affect the movement of shortnose sturgeon in the river.

### **14.3. Pollutant Discharges Permitted**

The draft permit has been developed to ensure that discharges will not cause or contribute to violations of the Massachusetts Water Quality Standards (WQS) in the Merrimack River. The Massachusetts WQS include turbidity, dissolved oxygen and other standards to protect aquatic life and incorporate EPA's aquatic life criteria for toxic pollutants unless a site specific criterion is established, which were designed to be protective of the most sensitive aquatic species nationwide. EPA has further reviewed the discharges and effluent limits to ensure that they are specifically protective of the shortnose sturgeon. Specific pollutants, criteria and effluent limits are discussed below.

#### **14.3.1. Total Suspended Solids**

TSS can affect aquatic life directly by killing them or reducing growth rate or resistance to disease, by preventing the successful development of fish eggs and larvae, by modifying natural movements and migration, and by reducing the abundance of available food<sup>22</sup>. These effects are caused by TSS decreasing light penetration and by burial of the benthos. Eggs and larvae are most vulnerable to increases in solids.

The draft permit proposes the same TSS concentration limitations as in the existing permit. The average monthly and average weekly limits are based on the secondary treatment requirements set forth at 40 CFR 133.102 (b)(1), (2) and 40 CFR 122.45 (f) and are a monthly average TSS concentration of 30 mg/l, and a weekly average concentration of 45 mg/l.

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<sup>22</sup> US EPA Red Book 1976, Quality Criteria for Water. EPA 440976023.



Studies of the effects of turbid waters on fish suggest that concentrations of suspended solids can reach thousands of milligrams per liter before an acute toxic reaction is expected<sup>23</sup>. The studies reviewed by Burton demonstrated lethal effects to fish at concentrations of 580 mg/L to 700,000 mg/L depending on species. Sublethal effects have been observed at substantially lower turbidity levels. For example, prey consumption was significantly lower for striped bass larvae tested at concentrations of 200 and 500 mg/L compared to larvae exposed to 0 and 75 mg/L<sup>24</sup>. Studies with striped bass adults showed that pre-spawners did not avoid concentrations of 954 to 1,920 mg/L to reach spawning sites<sup>25</sup>. While there have been no directed studies on the effects of TSS on shortnose sturgeon, shortnose sturgeon juveniles and adults are often documented in turbid water. Dadswell<sup>26</sup> reports that shortnose sturgeon are more active under lowered light conditions, such as those in turbid waters. As such, shortnose sturgeon are assumed to be as least as tolerant to suspended sediment as other estuarine fish such as striped bass.

As noted above, shortnose sturgeon eggs and larvae are less tolerant to sediment levels than juveniles and adults. Several studies have examined the effects of suspended solids on fish larvae. Observations in the Delaware River indicated that larval populations may be negatively affected when suspended material settles out of the water column<sup>27</sup>. Larval survival studies conducted by Auld and Schubel<sup>28</sup> showed that striped bass larvae tolerated 50 mg/l and 100 mg/l suspended sediment concentrations and that survival was significantly reduced at 1000 mg/L. According to Wilber and Clarke<sup>29</sup>, hatching is delayed for striped bass and white perch eggs exposed for one day to sediment concentrations of 800 and 1000 mg/L, respectively.

In a study on the effects of suspended sediment on white perch and striped bass eggs and larvae performed by the ACOE<sup>30</sup>, researchers found that sediment began to adhere to the

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<sup>23</sup> Burton, G.A., Jr. 1993. Assessing the quality of life for aquatic biota. In, Proceedings 1992 International Symposium on Environmental Dredging, A Solution to Contaminated Sediments?. Erie County Environmental Education Institute, Inc. Buffalo, NY.

<sup>24</sup> Breitburg, D. L. 1988. Effects of turbidity on prey consumption by striped bass larvae. Transactions of American Fisheries Society. 117:72-77, referenced in Burton, 1993.

<sup>25</sup> Combs, D.L. 1979. Striped Bass Spawning in the Arkansas River Tributary of Keystone Reservoir, Oklahoma. Proc. Ann. Conf. S.E. Assoc. Fish Wildl. Agencies 33:371-383, referenced in Burton, 1993.

<sup>26</sup> Dadswell, M.J., B.D. Taubert, T.S. Squiers, D. Marchettee and J. Buckley. 1984. Synopsis of biological data on shortnose sturgeon (*Acipenser brevirostrum*, LeSueur 1818). NOAA Tech. Rept. NMFS 14. 45 p., referenced in correspondence from Patricia A. Kurkul, NMFS to John H. Nagle, US EPA regarding Montague POTW Section 7 Consultation. September 10, 2008.

<sup>27</sup> Hastings, R.W. 1983. A study of the shortnose sturgeon *Acipenser brevirostrum* population in the upper tidal Delaware River: Assessment of impacts of maintenance dredging. Final Report to the U.S. Army Corps of Engineers, Philadelphia District. Rutgers University. 129 pp.

<sup>28</sup> Auld, A.H. and J.R. Schubel. 1978. Effects of suspended sediment on fish eggs and larvae: a laboratory assessment. *Estuarine and Coastal Marine Science* 6: 153-164.

<sup>29</sup> Wilbur, D.H., and Clarke, D.G., 2001. Biological effects of suspended sediments: A review of suspended sediment impacts on fish and shellfish with relation to dredging activities in estuaries. *North American Journal of Fisheries Management* 21(4): 855-875, as referenced in NMFS Montague POTW letter, September 10, 2008.

<sup>30</sup> Raymond P. Morgan, II, V. James Rasin, Jr., Linda A. Noe, 1973. Hydrographic and ecological effects of enlargement of the Chesapeake and Delaware Canal. Effects of suspended sediments on the development of eggs

eggs when sediment levels of over 1000 parts per million (ppm) were reached. No adverse effects to demersal eggs and larvae have been documented at levels at or below 50 mg/L. This is above the highest level authorized for the WWTP by this permit. Based on this information, it is likely that the discharge of sediment from the WWTP in the concentrations allowed by the draft permit will have an insignificant effect on shortnose sturgeon.

#### **14.3.2. Biological Oxygen Demand**

The biological oxygen demand (BOD) water test is used to determine how much oxygen is being used by aerobic microorganisms in the water to decompose organic matter. If these aerobic bacteria are using too much of the dissolved oxygen in the water, then there will not be enough available for the fish, insects, and other organisms that rely on oxygen. BOD has the potential to affect dissolved oxygen (DO) concentrations in the vicinity of and downstream from a wastewater treatment facility's outfall.

The draft permit for the WWTP proposes the same BOD<sub>5</sub> concentration limits as in the current permit, which are based on the secondary treatment requirements set forth at 40 CFR 133.102 (a)(1), (2), (4) and 40 CFR 122.45 (f). The secondary treatment limitations are a monthly average BOD<sub>5</sub> concentration of 30 mg/l and a weekly average concentration of 45 mg/l. EPA has determined that these effluent limits are sufficient to ensure that discharge from this facility does not cause an excursion below the Massachusetts water quality standard.

#### **14.3.3. pH**

The draft permit requires that the discharge maintain a pH of 6.5 – 8.5. A pH of 6.0 – 9.0 is harmless to most marine organisms and is within the normal range of pH for freshwater. A review of DMR data submitted over the last 24 months shows that there have been no violations for pH. Based on the DMR data, the pH values have ranged from 6.50-7.64 standard units. As such, no adverse effects to shortnose sturgeon are likely to occur as a result of the discharge of water of this pH into the Merrimack River.

#### **14.3.4. Bacteria**

The Massachusetts Water Quality Standards include criteria for two bacterial indicators for Class SB waters. Fecal coliform bacteria are applicable in water designated for shellfishing and enterococci criteria have been established to protect recreational uses. Criteria for enterococci were first promulgated for Massachusetts coastal waters by EPA on November 16, 2004 (see 40 CFR 131.41). Massachusetts subsequently adopted enterococci criteria for marine waters into its water quality standards that were approved by EPA on September 19, 2007. Fecal bacteria are not known to be toxic to aquatic life.

#### **14.3.5. Chlorine**

Based on the design flow of the WWTP and the dilution calculations, EPA has determined that a monthly average limit of 0.23 mg/l and a daily maximum limit of 0.39

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and larvae of striped bass and white perch. National Resources Institute, Chesapeake Biological Laboratory, University of Maryland, Center for Environmental and Estuarine Studies, 15, [12] p. ill., map; 28 cm. (NRI ref.; no 73-110), as referenced in NMFS Montague POTW Letter, September 10, 2008.

mg/l of Total Residual Chlorine (TRC) would assure that the facility did not exceed the chronic and acute TRC criteria (7.5 ug/l and 13 ug/l respectively).

There are a number of studies that have examined the effects of TRC<sup>31,32,33</sup> on fish; however, no directed studies that have examined the effects of TRC on shortnose sturgeon. The EPA has set the Criteria Maximum Concentration (CMC or acute criteria; defined in 40 CFR 131.36 as equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (up to 96 hours) without deleterious effects) at 0.019 mg/L, based on an analysis of exposure of 33 freshwater species in 28 genera (EPA 1986) where acute effect values ranged from 28 ug/L for *Daphia magna* to 710 ug/L for the threespine stickleback. The CMC is set well below the minimum effect values observed in any species tested. As the water quality criteria levels have been set to be protective of even the most sensitive of the 33 freshwater species tested, it is reasonable to assume that the criteria are also protective of shortnose sturgeon.

The anticipated TRC levels in the Merrimack River satisfy the EPA's ambient water quality criteria and are lower than TRC levels known to effect aquatic life. As such, the discharge of the permitted concentrations of TRC is likely to have an insignificant effect on shortnose sturgeon.

#### **14.3.6. Nutrients**

The current permit requires the permittee to monitor for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite. These requirements were established in response to public comment. The National Estuarine Eutrophication Assessment Update<sup>34</sup> did not have data available for the assessment of the Merrimack River. It did, however, identify Plum Island Sound, south of the Newburyport WWTP, as experiencing a moderate high level of overall eutrophication. The Sound is characterized by high chlorophyll-a and moderate nuisance /toxic blooms.

Although Plum Island Sound is outside the immediate vicinity of the Newburyport WPCF, , EPA has maintained the reporting requirements for ammonia nitrogen, total kjeldahl nitrogen and nitrate + nitrite concentrations and added requirements mass-based reporting in the proposed permit.

Plum Island Sound is not expected to be shortnose sturgeon habitat. As stated previously, the majority of the population resided upstream of the sound, between RKM 7 and 3235. However the monitoring and discharge limits proposed in the draft permit are designed to meet water quality standards and should not contribute to increased eutrophication or depressed dissolved oxygen values in the sound.

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<sup>31</sup> Buckley, J.A., "Acute Toxicity of Residual Chlorine in Wastewater to Coho Salmon (*Oncorhynchus kisutch*) and Some Resultant Hematologic Changes", *J. Fish. Res. Board Can.*, 33:2854-2856(1976).

<sup>32</sup> US EPA Gold Book 1986, Quality Criteria for Water. EPA 440586001.

<sup>33</sup> Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks and J. Woerner, 2007. Effects of Nutrient Enrichment in the Nation's Estuaries: A Decade of Change. NOAA Coastal Ocean Program Decision Analysis Series No. 26 National Centers for Coastal Ocean Science, Silver Spring, MD. 328 pp.

<sup>34</sup> 2007, Bricker, S., B. Longstaff, W. Dennison, A. Jones, K. Boicourt, C. Wicks, and J. Woerner, 2007.

<sup>35</sup> Kieffer and Kynard, 1993.

#### **14.3.7. Other toxic pollutants**

As discussed fully in Part 6.1.3 of this fact sheet, EPA reviewed extensive analytical data submitted with the facility's NPDES permit application to determine whether the facility discharges toxic pollutants in amounts that have a reasonable potential to cause or contribute to water quality violations. These data included expanded effluent testing data for over one hundred pollutants, including metals, VOCs and other toxic pollutants, and representing a total of over one thousand analyses. The WWTP WET Reports provide additional analyses of potentially toxic metals and include analyses of receiving water samples, allowing the facility's contribution to be assessed in the context of ambient conditions.

Copper, zinc, cyanide, total phenolic compounds all showed no reasonable potential to exceed their respective applicable water quality criteria.

#### **14.3.8. Whole Effluent Toxicity**

The Massachusetts Department of Environmental Protection's Division of Watershed Management's toxics policy requires toxicity testing for all major dischargers, such as the City of Newburyport WWTF. In addition, EPA recognizes that toxicity testing is required to assure that the synergetic effect of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentration in the effluent. Thus, the draft permit includes a whole effluent toxicity limitation requirement for the 001 outfall, to assure that the facility does not discharge combinations of toxic compounds into the Merrimack River in amounts which would affect aquatic or human life.

The draft permit carries forward a requirement for quarterly acute toxicity tests using the species Mysid Shrimp and Inland Silverside. The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times per year.

A review of 2 years of WET results shows consistent compliance for both Menidia and Mysid Bahia. There was one violation in the last 2 years with the February 2010 Menidia test.

The LC50 of  $\geq 100\%$  is established by EPA/MassDEP policy for facilities with less than 100:1 dilution.

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

EPA is reviewing recent comments made by NMFS regarding the selection of species for Whole Effluent Toxicity testing that are more sensitive and representative of the shortnose sturgeon (and Atlantic sturgeon). Using another test species (e.g. brook trout) to gain a comparison of the toxic effects seems appropriate in some cases, but EPA was

not able to properly evaluate the selection of an additional test species in time for the issuance of the draft permit. Based on EPA's continued assessment, as well as relevant comments received during the public comment period, it is expected that the final permit will fully address this issue.

#### **14.4. Finding**

Based on the above analysis of the location of the discharge, the expected distribution of shortnose sturgeon in the Merrimack River, the permit limits and the water quality effects of the permit action, EPA has made the preliminary determination that the proposed reissuance of the NPDES permit for this facility is not likely to adversely affect shortnose sturgeon. Therefore EPA has judged that a formal consultation pursuant to Section 7 of the ESA is not required. EPA is seeking concurrence from NMFS regarding this determination through the information in this fact sheet as well as a letter under separate cover.

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

### **15. COASTAL ZONE MANAGEMENT (CZM) CONSISTENCY REVIEW**

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

The discharge is within the defined CZM boundaries. The permittee has submitted a letter dated October 7, 2010 to the Massachusetts Coastal Zone Management Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

### **16. MONITORING AND REPORTING**

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

The draft permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The draft permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for

submitting DMRs and reports that precludes the use of NetDMR from submitting DMRs and reports (“opt-out request”). In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: <http://www.epa.gov/netdmr>. Further information about NetDMR, including contacts for EPA Region 1 is provided on this website.

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

The draft permit requires the permittee to report monitoring results obtained during each calendar month using Net DMR, no later than the 15<sup>th</sup> day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

The draft permit also includes an “opt-out” request process. Permittees, who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

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

## **17. STATE PERMIT CONDITIONS**

The NPDES Permit is issued jointly by the U. S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection under federal and state law, respectively.

As such, all the terms and conditions of the permit are, therefore, incorporated into and constitute a discharge permit issued by the MassDEP Commissioner.

## **18. GENERAL CONDITIONS**

The standard conditions of the permit are based on 40 CFR Parts 122, Subparts A and D and 40 CFR 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

## **19. STATE CERTIFICATION REQUIREMENTS**

The staff of the Massachusetts Department of Environmental Protection ("MassDEP") has reviewed the draft permit. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the draft permit will be certified.

## **20. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION**

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection, Attn: Michele Cobban Barden, 5 Post Office Square, Suite-100, (OEP06-1), Boston, Massachusetts 02109-3912 or via email to [barden.michele@epa.gov](mailto:barden.michele@epa.gov). The comments should reference the name and permit number of the facility for which they are being provided.

Any person, prior to such date, may submit a request in writing to EPA and the State's Agency for a public hearing to consider the draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates a significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period and after a public hearing, if such a hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of final permit decision, permit may be appealed to the Environmental Appeals Board in the manner described at 40 CFR § 124.19.

## 21. EPA AND MassDEP CONTACTS

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

Michele Cobban Barden  
EPA New England, Region1  
5 Post Office Square, Suite-100 (OEP06-1)  
Boston, MA 02109-3912  
Telephone: (617) 918-1539, FAX: (617)918-0539  
Email: [barden.michele@epa.gov](mailto:barden.michele@epa.gov)

Kathleen Keohane  
Massachusetts Department of Environmental Protection  
Division of Watershed Management  
Surface Water Discharge Permit Program  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, Massachusetts 01608  
Telephone: (508) 767-2856, FAX: (508) 791-4131  
Email: [kathleen.keohane@state.ma.us](mailto:kathleen.keohane@state.ma.us)

January 3, 2012  
Date

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



Figure 1

Location of the Newburyport Wastewater Treatment Plant

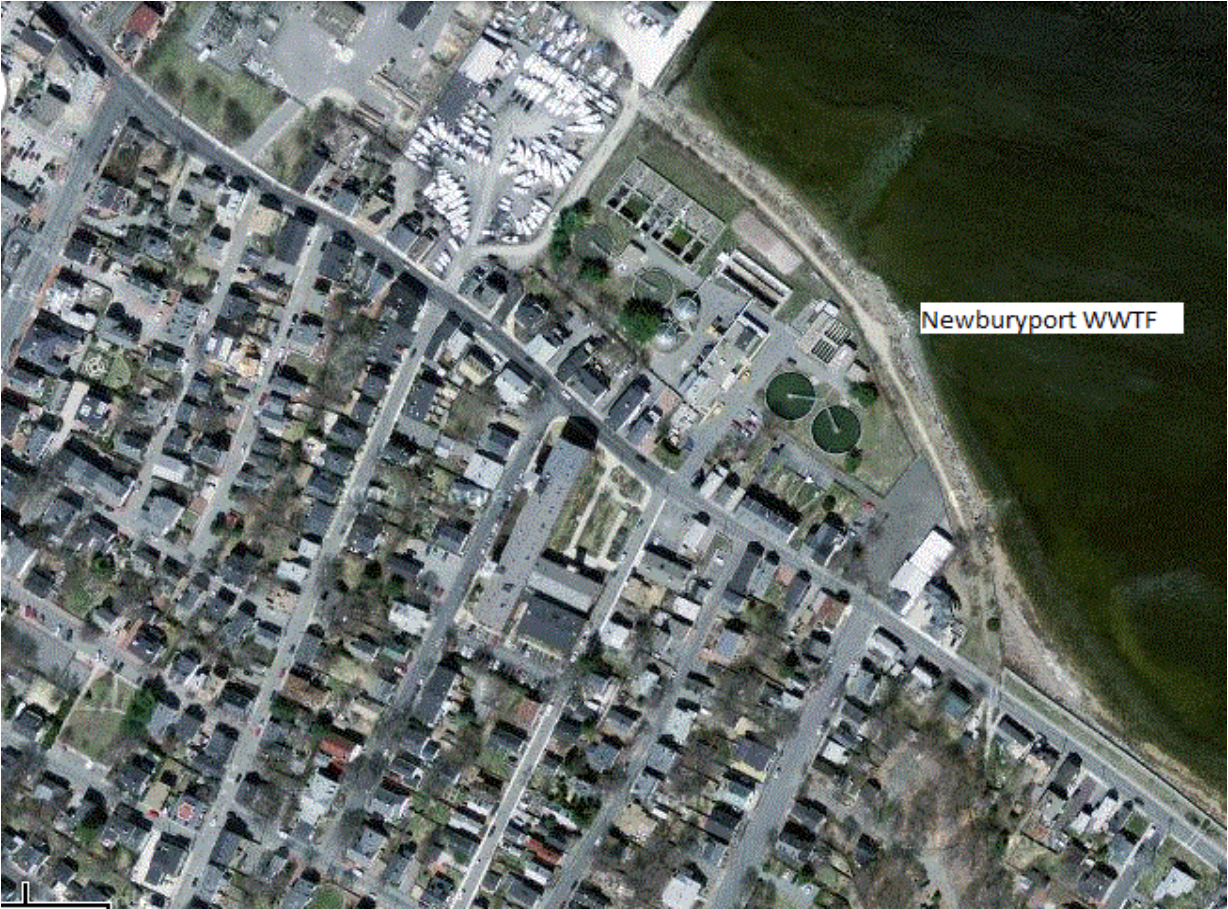


Table 1  
 Summary of Effluent Characteristics at Outfall 001

The following effluent characteristics were derived from analysis of discharge monitoring data collected from Outfall 001 from September 2009 through August 2011. All data taken from the monthly Discharge Monitoring Reports as retrieved from EPA's Permit Compliance System (PCS) data base. These effluent values characterize the treated wastewater discharged from this facility.

Effluent Parameter	Average of Monthly Averages	Range of Monthly Averages	Maximum of Daily M
Flow (MGD)	2.76	2.30-3.10	8.05
BOD <sub>5</sub> (mg/l)	24.73	15-30	79
TSS (mg/l)	16.01	10.50-25.60	91.30
pH (standard units)	***	6.50-7.64 <sup>1</sup>	***
Fecal Coliform Bacteria (cfu/100 ml)	22.43	2.48-82.45	274
Total Residual Chlorine (mg/l)	0.05	0.03-0.08	0.36
Ammonia Nitrogen	16.07	5.97-24	***
Total Kjeldahl Nitrogen	17.89	0.20-26.00	***
Nitrite + Nitrate	1.64	0.51-4.60	***
Dissolved Oxygen	8.01	6.61-10.46	4.30 <sup>2</sup>
LC50 (% effluent) <i>Menidia</i>	***	74.4-100	74.4 <sup>3</sup>
LC50 (% effluent) <i>Mysid Bahia</i>	***	100-100	100 <sup>s</sup>

<sup>1</sup> Numbers listed are minimum and maximum daily readings.

<sup>2</sup> Minimum of the minimum daily readings.

<sup>3</sup> Minimum reading during reporting period.

Table 2  
 Summary of Effluent Characteristics from 2010 NPDES Application

<b>Parameter</b>	<b>Maximum Daily Value</b>	<b>Average Daily Value</b>	<b>Units</b>	<b>Number of Samples</b>
pH (minimum)	6.5	***	Standard Units	***
pH (maximum)	7.3	***	Standard Units	***
Flow Rate	8.31	3.18	MGD	365
Temperature (Winter)				
Temperature (Spring)				
BOD	49.00	24.20	mg/l	155
Fecal Coliform Bacteria	238.00	30.10	#/100 mg	365
Total Suspended Solids	85.50	14.20	mg/l	249
Ammonia	31.00	15.33	mg/l	54
Total Residual Chlorine	0.36	0.04	mg/l	365
Dissolved Oxygen	6.26	2.47	mg/l	250
Total Kjeldahl Nitrogen	25.00	17.86	mg/l	54
Nitrate Nitrogen	5.90	0.65	mg/l	54
Oil and Grease	BDL	BDL	mg/l	5
Phosphorus (Total)	1	0.67	mg/l	2
Total Dissolved Solids	500	480	mg/l	2
Enterococci	***	BDL	EC/100 ml	1
Copper	0.02	BDL	mg/l	54
Zinc	0.06	BDL	mg/l	54
Cyanide	0.02	BDL	mg/l	54
Total Phenolic Compounds	0.05	BDL	mg/l	8

Figure 2  
 Newburyport Water Pollution Control Facility  
 Flow Diagram, Page 1

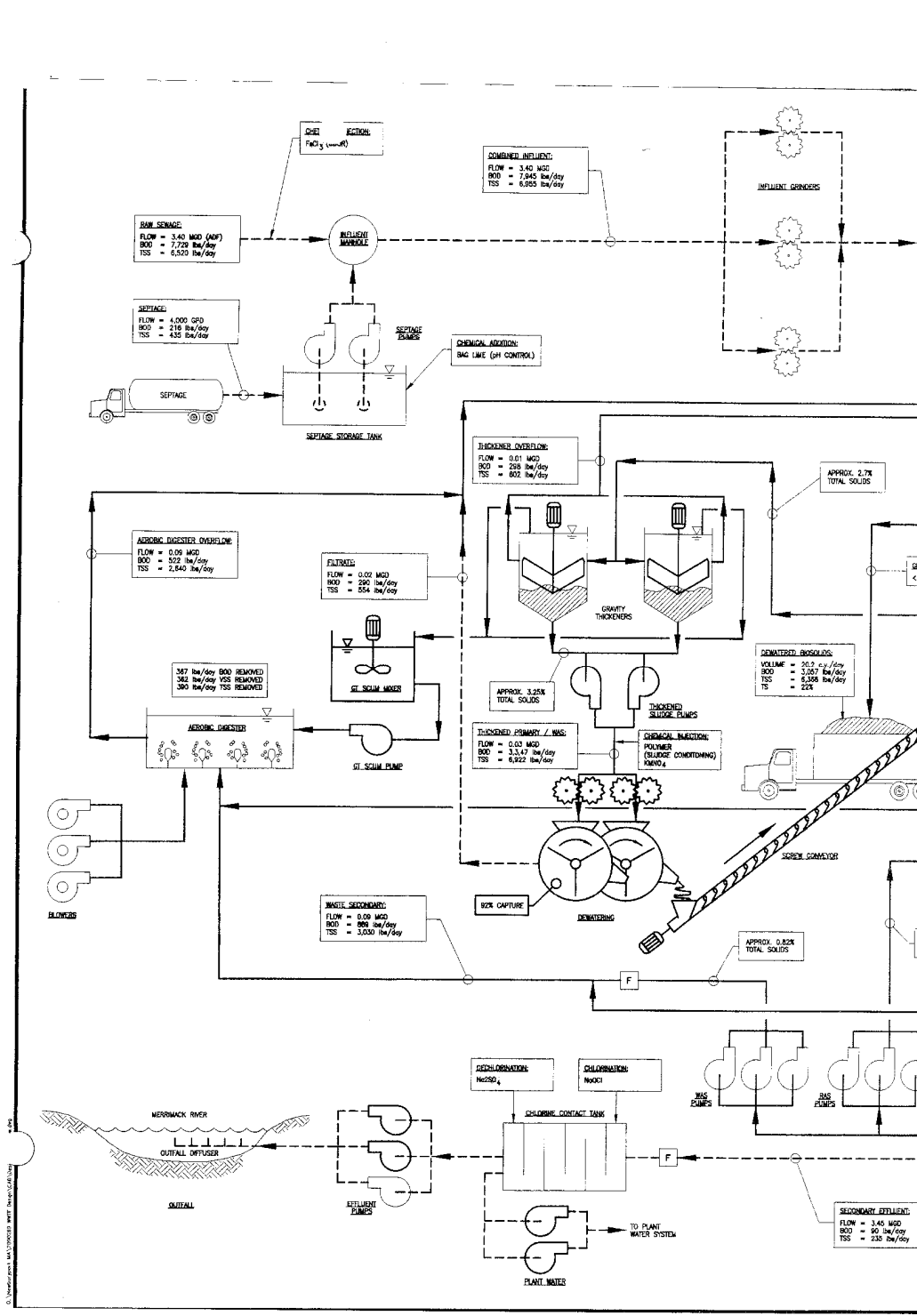
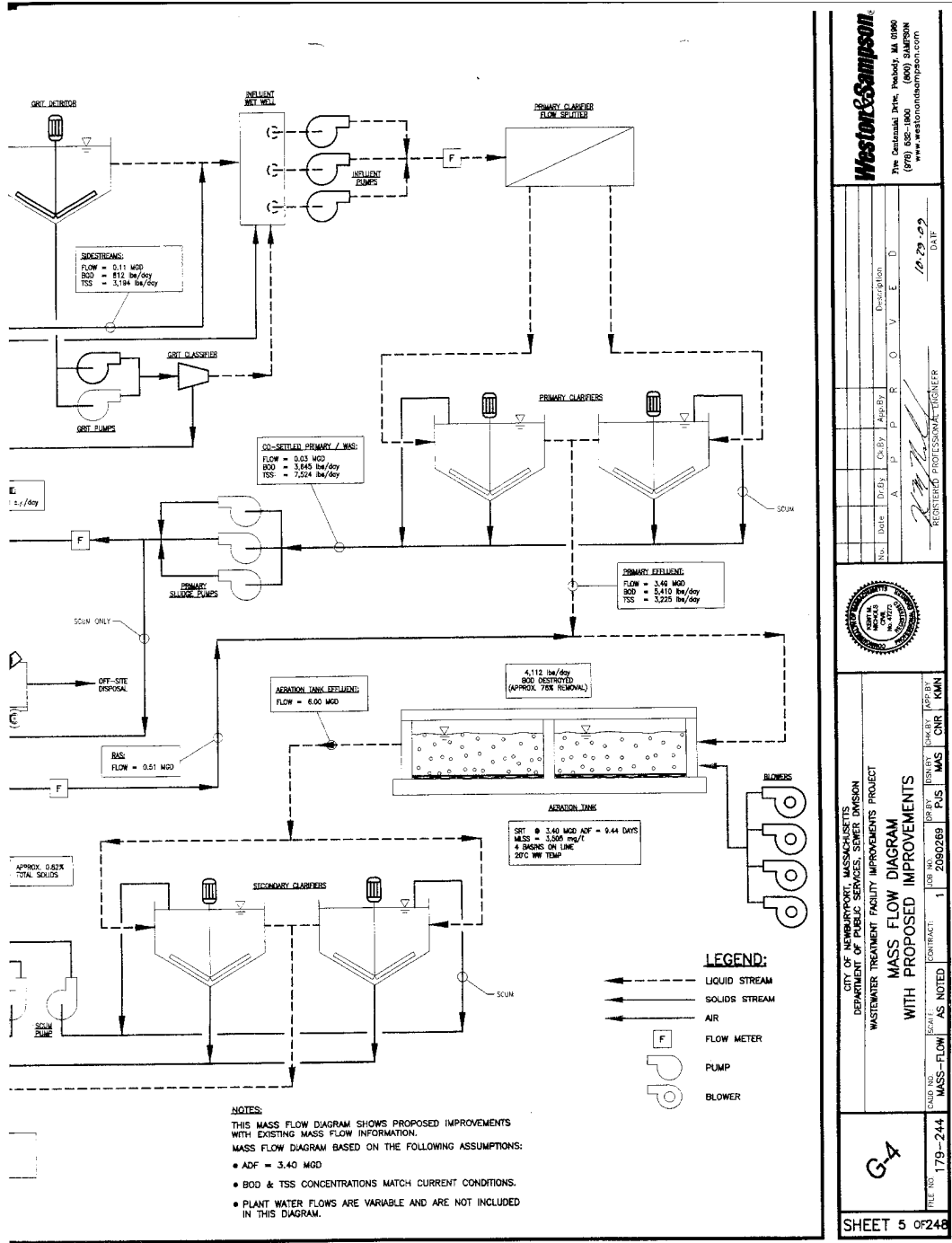


Figure 2  
 Newburyport Water Pollution Control Facility  
 Flow Diagram, Page 2



MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
COMMONWEALTH OF MASSACHUSETTS  
1 WINTER STREET  
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY  
OFFICE OF ECOSYSTEM PROTECTION  
REGION I  
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE  
ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF  
THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT,  
AS AMENDED, AND UNDER SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN  
WATERS ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER  
SECTION 401 OF THE CLEAN WATER ACT.

DATE OF NOTICE: January 12, 2012

PERMIT NUMBER: **MA0101427**

PUBLIC NOTICE NUMBER: MA-007-12

NAME AND MAILING ADDRESS OF APPLICANT:

**Honorable Donna D. Holaday**  
**Mayor of Newburyport**  
**60 Pleasant Street**  
**Newburyport, MA 01950**

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

**Newburyport Water Pollution Control Facility**  
**157 Water Street**  
**Newburyport, MA 01950**

RECEIVING WATER: **Merrimack River**

RECEIVING WATER CLASSIFICATION: **Class SB**

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00 and State Surface Water Quality Standards at 314 CMR 4.00. EPA has formally requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified. However, sludge conditions in the draft permit are not subject to State certification requirements.

INFORMATION ABOUT THE DRAFT PERMIT:

A fact sheet (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing this draft permit) and the draft permit may be obtained at no cost at [http://www.epa.gov/region1/npdes/draft\\_permits\\_listing\\_ma.html](http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html) or by writing or calling EPA's contact person named below:

Michele Cobban Barden  
U.S. Environmental Protection Agency – Region 1  
5 Post Office Square, Suite 100 (OEP06-1)  
Boston, MA 02109-3912  
Telephone: (617) 918-1539

The administrative record containing all documents relating to this draft permit is on file and may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

#### PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **February 10, 2012**, to the U.S. EPA, 5 Post Office Square, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

#### FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

DAVID FERRIS, DIRECTOR  
MASSACHUSETTS WASTEWATER  
MANAGEMENT PROGRAM  
MASSACHUSETTS DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

STEPHEN S. PERKINS, DIRECTOR  
OFFICE OF ECOSYSTEM PROTECTION  
ENVIRONMENTAL PROTECTION  
AGENCY – REGION 1