AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

Town of Stockbridge
Board of Selectmen
Town Hall
50 Main Street
Stockbridge, Massachusetts 01262

is authorized to discharge from the facility located at

Stockbridge Wastewater Treatment Plant
Route 102 - 1 West Stockbridge Road
Stockbridge, Massachusetts 01262

to the receiving water named

Housatonic River

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

This permit shall become effective on the date of signature.

This permit supersedes the permit issued on September 15, 2004.

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

This permit consists of 13 pages in Part I including effluent limitations and monitoring requirements, 25 pages in Part II including General Conditions and Definitions, Attachment A, the Freshwater Acute Toxicity Test Procedure and Protocol, and Attachment B, the Summary of Report Submittals Required by the Permit.

Signed this 3rd day of January 2011.

/S/ SIGNATURE ON FILE

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

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

PART I

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 001** to the Housatonic River. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Units	Effluent Limitations			Monitoring Requirements	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[1]
Flow [2]	MGD	0.46 Report	*** ***	Report ***	Continuous	Recorder
BOD [3]	mg/l lbs/day	20 75	30 113	Report	2/week	24-hour composite[5]
TSS [3]	mg/l lbs/day	20 75	30 113	Report	2/week	24-hour composite[5]
pH [4]	s.u.	6.5 – 8.3			1/day	grab
Fecal Coliform [6] (April 1 – October 31 for first year only)	cfu/100mL	200	***	400	1/week	grab
E. coli[4, 6] (April 1 – October 31 for first year) (April 1 – October 31 after first year)	cfu/100ml	Report 126	*** ***	Report 409	1/month 1/week	grab
Total Phosphorus (April 1 – October 31) (November 1 – March 31)	mg/l mg/l	0.65 1.0	*** ***	Report Report	1/week	24-hour composite[5]

Effluent Characteristic	Units	Effluent Limitations			Monitoring Requirements	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[1]
Total Nitrogen	mg/l lbs/day	Report Report	*** ***	Report Report	1/quarter [11]	24-hour composite[5]
Total Kjeldahl Nitrogen [7]	mg/l lbs/day	Report Report	*** ***	Report Report	1/quarter [11]	24-hour composite[5]
Total Ammonia Nitrogen [7]	mg/l lbs/day	Report Report	*** ***	Report Report	1/quarter [11]	24-hour composite[5]
Nitrate Nitrogen Total [7]	mg/l lbs/day	Report Report	*** ***	Report Report	1/quarter [11]	24-hour composite[5]
Nitrite Nitrogen Total [7]	mg/l lbs/day	Report Report	*** ***	Report Report	1/quarter [11]	24-hour composite[5]
Whole Effluent Toxicity [8,9,10]	%	Acute $LC_{50} \geq 100\%$			1/quarter	24-hour composite[5]

Footnotes:

1. All sampling shall be representative of the influent and of the effluent discharged through Outfall 001 to the Housatonic River. The routine sampling program in which samples are taken at the same location, same time, and same day(s) of every month, developed under the prior permit, shall be revised or updated, as necessary. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable Discharge Monitoring Report (DMR) that is submitted to EPA. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136.

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

3. Sampling required for influent and effluent.

4. Required for State certification.

5. 24-hour composite samples will consist of at least twenty-four (24) grab samples taken during one consecutive 24-hour period (e.g. 7:00 am Monday to 7:00 am Tuesday), either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

6. The average monthly limits for Fecal coliform and *Escherichia coli* are expressed as geometric means. Samples for Fecal coliform and *E. coli* shall be taken concurrently.

   The Fecal coliform limits and monitoring requirements are in effect through October 31, 2011. As of November 1, 2011, the fecal coliform limits and monitoring requirements will end.

   The *E. coli* effluent limitations go into effect on April 1, 2012 (the start of the 2012 sampling season). The monitoring and report requirements for *E. coli* go into effect on the effective date of this permit. The monitoring frequency for *E. coli* is 1/month until November 1, 2011.

7. See Part I.E. for requirements to evaluate and implement optimization of nitrogen removal.

8. The permittee shall conduct toxicity tests four (4) times per year. The permittee shall test the daphnid, *Ceriodaphnia dubia*. Toxicity test samples shall be collected during the second week in the months of January, April, July, and October. The test results shall be submitted by February 28th, May 31st, August 31st, and November 30th, respectively. The tests must be performed in accordance with the Freshwater Acute Toxicity Test Procedure and Protocol (Attachment A). After submitting **one year** (a minimum of four consecutive sets) of Whole Effluent Toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the

WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed.

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

10. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent shall cause no more than a 50% mortality rate.

11. The quarterly testing for Total Nitrogen, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate Nitrogen Total, and Nitrite Nitrogen Total shall be performed in January, April, July, and October.

Part I.A.1 (cont'd)

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

b. The discharges shall not cause objectionable discoloration of the receiving waters.

c. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.

d. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.

e. 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.

f. The results of sampling for any parameter in accordance with EPA approved methods above its required frequency must also be reported.

2. All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the director of the following:

a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; and/or

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 the permit issuance.

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

(i) The quantity and quality of effluent introduced into the POTW; and

(ii) Any anticipated impact of the change on the quantity and quality of effluent to be discharged from the POTW.

3. Prohibitions Concerning Interference and Pass Through

a. Pollutants introduced into POTWs 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

   a. EPA or the 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.

Part I.B. UNAUTHORIZED DISCHARGES

1. The permit only authorizes discharges in accordance with the terms and conditions of this permit and only from the outfall listed in PART 1.A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) from any portion of the collection system, 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).

2. Notification of SSOs to EPA and MassDEP shall be made on the MassDEP 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.

Part I.C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

   a. 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.

   b. Preventative Maintenance Program

      The permittee shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system

infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

c. Infiltration/Inflow Control Plan

The permittee shall update and implement its plan to control infiltration and inflow (I/I) to the separate sewer system. The plan shall be submitted to EPA and MassDEP **within six (6) months of the effective date of this permit** and shall describe the permittee's program for preventing I/I related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and by-passes due to excessive infiltration/inflow.

The plan shall include:

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

d. Infiltration/Inflow Annual Report

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

- A map and description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any I/I related maintenance activities and corrective actions taken during the previous year.
- A map with areas identified for I/I-related investigation/action during the coming year.
- A calculation of the annual average I/I, the maximum month I/I for the reporting year.
- A report of any I/I related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to Part I.B.1 of this permit.

e. Alternative Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

Part I.D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR Part 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to Section 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the permittee's sludge use and/or disposal practices, the permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil
   b. Surface disposal - the placement of sewage sludge in a sludge only landfill
   c. Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill (40 CFR § 503.4). These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g. lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.

5. The 40 CFR Part 503 requirements including the following elements:

   - General requirements;
   - Pollutant limitations;
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements);
   - Management practices;
   - Record keeping;
   - Monitoring; and
   - 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.[1]

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

Volume (dry metric tons per year)	Frequency
less than 290	1 /year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

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

7. Under 40 CFR § 503.9(r), the permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the permittee contracts with *another* "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the permittee remains responsible to ensure that the applicable requirements in Part 503 are met (40 CFR § 503.7). If the ultimate use or disposal method is land application, the permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR Part 503 Subpart B.

8. The permittee shall submit an annual report containing the information specified in the 40 CFR Part 503 requirements (§ 503.18 (land application), § 503.28 (surface disposal), or § 503.48 (incineration)) by **February 19 each year** (*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; and
   - 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.

[1] 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

Part I.E. SPECIAL CONDITIONS

1. **Within one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing wastewater treatment facility to optimize the removal of nitrogen, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational changes. The methods to be evaluated include, but are not limited to: operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management.

2. The permittee shall also submit an annual report to EPA and MassDEP, **by February 1 each year**, that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous year.

Part I.F. MONITORING AND REPORTING

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

   a. Submittal of Reports Using NetDMR

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

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

b. Submittal of NetDMR Opt Out Requests

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

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-1)
Boston, MA 02109-3912

And

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

c. Submittal of Reports in Hard Copy Form

Hard copy DMR submittals shall be completed and **postmarked no later than the 15th day of the month following the completed reporting period.** MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports required herein as listed in Attachment B, shall be submitted to the appropriate State addresses and to the EPA address listed below:

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

The State Agency addresses are:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Western Regional Office
436 Dwight Street
Springfield, MA 01103

and

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

Part I.G. STATE PERMIT CONDITIONS

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

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

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

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

FACT SHEET

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

NPDES PERMIT NUMBER: **MA0101087**

PUBLIC NOTICE START AND END DATES: October 14, 2010 – November 12, 2010

NAME AND MAILING ADDRESS OF APPLICANT:

Town of Stockbridge
Board of Selectmen
Town Hall
50 Main Street
Stockbridge, Massachusetts 01262

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Stockbridge Wastewater Treatment Plant
Route 102 - 1 West Stockbridge Road
Stockbridge, Massachusetts 01262

RECEIVING WATER: **Housatonic River (Segment MA21-19)**

RECEIVING WATER CLASSIFICATION: **Class B (warm water fishery)**

LATITUDE: **42°17' 32" N** LONGITUDE: **73°19' 28" W**

Table of Contents

1. Proposed Action

The Town of Stockbridge has applied to the U.S. Environmental Protection Agency (EPA) for re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge treated wastewater into the Housatonic River, just upstream of the confluence of Larrywaug Brook. The current permit ("2004 Permit") was issued on September 15, 2004, and expired five years from the effective date (September 15, 2009). EPA received a completed permit renewal application from the applicant dated on April 3, 2009, and received additional requested information on June 1, 2009. Because the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR § 122.6.

2. Type of Facility and Discharge Location

The Stockbridge Wastewater Treatment Plant ("Facility" or "Plant") is located in Stockbridge, MA and is a municipally-owned secondary treatment plant using the extended aeration process. Attachment A includes a Site Locus map and Attachment B includes an aerial photograph of the facility and indicates the approximate location of the outfall. The Facility treats wastewater collected by a municipally-owned separate sewer system, serving approximately 2,600 people, which receives only residential and commercial wastewater (i.e. there are no industrial discharges into the system). The Plant consists of septage receiving facilities, grit removal, oxidation ditches, secondary clarifiers, ultraviolet disinfection, and sludge thickening. Attachment C includes a process flow diagram for the facility. Waste activated sludge and septage are transported by a contractor to the Fitchburg East Wastewater Treatment Plant located at 718 Main Street, Fitchburg, MA, for incineration. The Town previously disposed of sludge and septage in a sludge landfill, but since issuance of the 2004 Permit, the Town's sludge landfill has been closed. According to the Facility's permit application, during 2005, the total amount of sludge removed from the Facility was 367,000 gallons, which contained about 45.30 dry tons of solids. During 2007, the total volume of sludge removed was 396,000 gallons, which contained about 38.78 dry tons of solids.

Modifications to the Facility have been completed since issuance of the 2004 Permit, and include piping to interconnect the existing two oxidation ditches, the addition of a third clarifier, new sludge handling equipment, and other miscellaneous improvements. These modifications improved performance, enhanced solids handling, and increased the design capacity of the facility, and were necessary to accommodate increased wastewater flows due to sewer extensions. The Town's Comprehensive Wastewater Management Plan (CWMP) and Addendum, approved by MassDEP on June 28, 2002, identified the sewer extensions as essential to protecting water resources from the harmful impacts of individual sewage disposal systems and justified the need for increased capacity at the Plant due to the extensions.

Under the 2004 Permit, the Facility may discharge an average monthly flow of 0.3 million gallons per day (MGD). Due to the improvements made as approved through the CWMP and Addendum, the permittee is requesting an increase in its permitted average monthly flow from 0.3 MGD to 0.46 MGD. The Draft Permit includes this increased flow.

The wastewater collection system has been subject to excessive Infiltration/Inflow (I/I) in the past. According to the Facility's permit application, there are approximately 10,000 gallons per day (gpd) of I/I entering the collection system. The Town has an active I/I program and is currently relining sewers to further reduce I/I to the treatment facility.

The Facility discharges from one outfall (Outfall 001) into the Housatonic River. Outfall Serial Number 001 is located to the south of the Facility, approximately ten (10) feet from shore and three (3) feet below the water surface. Attachment B shows the approximate location of the outfall. The outfall is not equipped with a diffuser, and constantly discharges treatment effluent (i.e. discharges are not intermittent or periodic).

3. Description of Discharge

A quantitative description of the discharge in terms of significant effluent parameters based on monitoring data from October 1, 2004 through February 28, 2010 is presented in Attachment D. During this time, there were no exceedances of flow, effluent BOD, effluent TSS, pH, fecal coliform, or any nitrogen parameters (total Kjeldahl, nitrate, and nitrite). However, there were two (2) exceedances of the total phosphorus limit of 1.0 mg/L (1.02 mg/L and 1.6 mg/L in May 2005 and July 2006, respectively) and five (5) months (March and April 2005, November 2006, January 2007, and March 2008) where the Facility reported TSS removal of less than 85 percent, as required by Part I.A.1.d of the 2004 Permit. These data were collected under the terms of the 2004 permit.

4. Receiving Water Description

The Housatonic River originates from tributaries in the Towns of Peru, Windsor, and Hinsdale, Massachusetts, and flows in a southerly direction through the City of Pittsfield and the Towns of Lenox, Lee, Stockbridge, and Great Barrington prior to flowing into the State of Connecticut. The Facility discharges through Outfall 001 (approximate location indicated on Attachment B) to the Housatonic River segment ID MA21-19. This segment of the Housatonic River is 19.9 miles long, and begins at the outlet of Woods Pond in Lee/Lenox and ends at the Risingdale impoundment dam in Great Barrington.[1]

This segment of the Housatonic River is classified as Class B (warm water fishery)[2], by the Massachusetts Department of Environmental Protection (MassDEP) under the Commonwealth of Massachusetts Water Quality Standards.[3] Class B waters are described in the Water Quality Standards (314 CMR 4.05(3)(b)) as "designated as a habitat for fish, other aquatic life, and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 314 CMR 4.06, they shall be suitable as a source of public water supply with appropriate treatment ("Treated Water Supply"). Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."

A warm water fishery is defined in the Massachusetts Surface Water Quality Standards as "waters in which the maximum mean monthly temperature generally exceeds 68° F (20° C) during the summer months and are not capable of sustaining a year-round population of cold water stenothermal aquatic life" (314 CMR §4.02).[3]

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[1] Housatonic River Watershed 2002 Water Quality Assessment Report, http://www.mass.gov/dep/water/resources/21wqar07.pdf

[2] http://www.mass.gov/dep/water/laws/tblfig.pdf

[3] http://www.mass.gov/dep/service/regulations/314cmr04.pdf

According to the *Housatonic River Watershed 2002 Water Quality Assessment Report*,[1] this segment is generally not meeting its designated uses as identified in the water quality standards. The following table, reproduced from the Water Quality Assessment Report, further identifies the status and impairments for each designated use:

Designated Uses		Status
Aquatic Life		IMPAIRED Cause: PCBs in whole fish and sediment, elevated total phosphorus in upper 9.2 miles of segment Source: inappropriate waste disposal from General Electric Site for PCB contamination Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources
Fish Consumption		IMPAIRED Cause: PCBs Source: inappropriate waste disposal from General Electric Site
Primary Contact		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach
Secondary Contact		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach
Aesthetics		IMPAIRED Upper 9.2 mile reach Cause: Objectionable algal growth Source: Unknown Suspected source: Nutrient inputs from point sources (municipal and industrial) and non-point source runoff exacerbated by impoundments and other upstream sources SUPPORT lower 10.7 mile reach

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single, multi-part list.

Housatonic River Segment MA21-19 is listed on the *Final Massachusetts Year 2008 Integrated List of Waters*[4] and on the *Proposed Massachusetts Year 2010 Integrated List of Waters*[5] as a Category 5 waterbody: "Waters requiring a TMDL." The pollutants needing TMDLs are:

- Excess Algal Growth;
- Polychlorinated biphenyls;
- Phosphorus (Total); and
- PCB in Fish Tissue.

[4] http://www.mass.gov/dep/water/resources/08list2.pdf
[5] http://www.mass.gov/dep/water/resources/10list3.pdf

MassDEP is required under the CWA to develop a TMDL for a waterbody once it is identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal.

As of the date of this Draft Permit, no TMDLs have been drafted or finalized for the Housatonic River watershed. However, based on the nature of the operations of the Facility, wastewater discharges may contribute to the excess algal growth and total phosphorus impairments.

5. Permit Limitations and Conditions

The effluent limitations and monitoring requirements may be found in the Draft Permit.

6. Differences between 2004 Permit and Draft Permit

The Draft Permit includes the following major changes from the 2004 Permit:

- Permitted flow increased from 0.30 MGD to 0.46 MGD. Addition of reporting average monthly flow;
- Reduction of BOD and TSS average monthly and average weekly concentration limits from 30 and 45 mg/L, to 20 and 40 mg/L, respectively. Addition of reporting maximum daily values;
- For the first year (through October 31, 2011, the end of the bacteria sampling season), continuation of Fecal coliform effluent limitations and weekly monitoring requirements and addition of monthly monitoring for *E.coli.* Starting November 1, 2011, replacement of Fecal Coliform average monthly and maximum daily effluent limitations of 200 and 400 cfu/100 mL, respectively, with *E. coli* limitations of 126 and 409 cfu/100 mL, respectively;
- Revision of Total Phosphorus effluent limitations;
- Addition of effluent monthly monitoring and reporting requirements for Total Nitrogen, and Total Ammonia Nitrogen;
- Revision of Whole Effluent Toxicity limits from Acute $LC_{50} \geq 50\%$ to Acute $LC_{50} \geq 100\%$ and increase in monitoring frequency from twice per year to quarterly.

7. Permit Basis: Statutory and Regulatory Authority

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This Draft NPDES Permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, 133, and 136. The general conditions of the Draft Permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

During development of the Draft Permit, EPA considered technology-based treatment requirements, water quality-based requirements, the permit application, monitoring data collected under the terms of the 2004 Permit, and all limitations and requirements in the current/existing permit.

7.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. Under Section 301(b)(1) 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 technology guidelines (effluent limits) for POTWs, which represent the minimum level of control that must be applied to POTWs, can be found at 40 CFR Part 133. Since all Clean Water Act statutory deadlines for meeting technology-based guidelines have expired, the deadline for compliance with technology-based effluent limits for a POTW is the date of permit issuance (40 CFR § 125.3(a)(1)). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA can not be authorized by a NPDES permit.

7.2 Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded.

The Massachusetts State Water Quality Standards, found at 314 CMR 4.00, include these elements. The State Water Quality Regulations limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, be used unless site-specific criteria are established. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts. The State of Massachusetts has a similar narrative criteria in their water quality regulations that prohibits such discharges [See Massachusetts 314 CMR 4.05(5)(e)]. The effluent limits established in the Draft Permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained.

7.3 Anti-Backsliding

Federal anti-backsliding provisions are found in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l) and generally prohibit the relaxation of permit limits, standards, and conditions. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and

State Certification requirements. The effluent limits in the Draft Permit are as stringent as those in the 2004 Permit.

7.4 Antidegradation

The Massachusetts Antidegradation Provisions are found in the state's water quality standards at 314 CMR 4.04. All existing uses of the Housatonic River must be maintained and protected. EPA anticipates that the MassDEP shall make a determination that there will be no significant adverse impacts to the receiving waters and no loss of existing uses as a result of the discharge authorized by this permit. This Draft Permit is being reissued with allowable effluent limits that are as stringent as, and for many parameters, more stringent than, the 2004 Permit and accordingly will continue to protect the existing uses of the Housatonic River. The State is also asked to certify the antidegradation provisions in State law are met.

8. Explanation of the Permit's Effluent Limitation

8.1 Derivation of Effluent Limits under the Federal CWA and/or the Commonwealth of Massachusetts' Water Quality Standards

The Draft Permit authorizes the discharge of treated wastewater effluent, subject to effluent limitations which are within applicable water quality standards. The effluent parameters in the Draft Permit are discussed in more detail below. The sections are divided according to the influent and effluent characteristics being regulated. A summary of discharge monitoring report (DMR) data reported by the Facility from October 1, 2004 through February 28, 2010 is included in Attachment D.

8.1.1 Available Dilution

Water quality-based effluent limitations are established based on a calculated dilution factor derived from the available dilution in the receiving water at the point of discharge. Massachusetts water quality standards require that the available effluent dilution be calculated based upon the 7Q10 flow of the receiving water (314 CMR 4.03(3)(a)). The 7Q10 flow is the mean low flow over seven consecutive days, occurring every ten years. Use of the 7Q10 flow allows for the calculation of the available dilution under critical flow (worst-case) conditions, which in turn results in the derivation of conservative water quality-based effluent limitations.

The dilution factor for the existing permitted average daily flow of 0.30 MGD of the facility was calculated to be 138. The 2004 Fact Sheet presented the following supporting calculations:

> *The proportion of the 7Q10 flow at the point of discharge to the 7Q10 flow at the USGS Gage Station (#01197500), Great Barrington, is in the same proportion as the respective drainage areas. The calculated 7Q10 and dilution factor for the facility are as follows:*
>
> *Drainage Area (Station #01197500) 282 square miles*
> *Drainage Area (below outfall to Station) 28 square miles*
> *Net Drainage Area (@ outfall) = 282 – 28 = 254 square miles*
>
> *7Q10@ Gage Station = 69.8 cfs*
> *7Q10@ WWTF discharge = 254/282 x 69.8 = 62.9 cfs*

Design flow = 0.3 mgd = 0.46 cfs

Dilution factor = (River 7Q10 @ Discharge + Design Flow) ÷ Design Flow
Dilution Factor = (62.9 +0.46) ÷ 0.46 = 138

Because the Draft Permit includes an increase in the permitted flow, the calculations for the dilution factor and the receiving stream volume available during 7Q10 flow were revised as follows:

According to the United States Geological Survey (USGS), the 7Q10 flow at the USGS gauge located on the Housatonic River in Great Barrington, MA (USGS Gage No. 01197500) is 69 cfs and the drainage area of the gage is 282 square miles.[6] According to USGS StreamStats[7], the drainage area of river at the Facility's outfall is 260 square miles. A 7Q10 flow factor of 0.2447 was calculated by dividing the 7Q10 flow at the gage (69 cfs) by the drainage area at the gauge (282 square miles (mi^2)). This flow factor was then multiplied by the estimated drainage area at the Facility's discharge outfall (260 mi^2) to determine the approximate 7Q10 flow of the receiving water at the point of discharge (63.6 cfs). Using the design flow of the facility (0.46 MGD = 0.71 cfs) and the estimated 7Q10 of the receiving water at the point of discharge (63.6 cfs), a dilution factor of 90.6 was calculated.

The above-described process to calculate 7Q10 and the dilution factor for the facility are as follows:

Drainage Area @ gage station = 282 square miles
Drainage Area @ outfall = 260 square miles
7Q10@ gage station = 69 cfs = 44.6 mgd

7Q10@ outfall = 7Q10@ gage station ÷ drainage area @ gage station x drainage area @ outfall
7Q10@ outfall = 69 cfs ÷ 282 square miles x 260 square miles = 63.6 cfs = 41.1 mgd

Design flow = 0.46 mgd = 0.71 cfs

Dilution factor = (7Q10 @ Outfall + Design Flow) ÷ Design Flow
Dilution Factor = (63.6 cfs + 0.71 cfs) ÷ 0.71 cfs = 91

8.1.2 Flow

In order to accommodate the Facility's modifications, the Draft Permit proposes an average monthly flow of 0.46 MGD, which is an increase of 0.16 MGD over the currently permitted flow of 0.30 MGD. It should be noted that the requested increase in flow (0.25 cfs) is less than 1% of the calculated receiving stream 7Q10 flow at the point of discharge (63.6 cfs), and the total average monthly flow of 0.46 MGD is only approximately 1% of the calculated 7Q10 flow at the point of discharge.

[6] http://streamstats.usgs.gov/gagepages/HTML/01197500.htm
[7] http://water.usgs.gov/osw/streamstats/massachusetts.html

The 0.46 MGD average monthly flow limitation proposed in the Draft Permit is based upon the average design flow of the modified Facility, in accordance with the requirements of 40 CFR § 122.45(b). Flow is to be measured continuously. The average monthly flow limit is an annual average limit which is reported as a rolling average, calculated from a month and the previous 11 months. In addition, the Draft Permit requires reporting of the average monthly flow and maximum daily flow for each month.

As shown in Attachment D to this Fact Sheet, between October 1, 2004 and February 28, 2010, there were no exceedances of the currently permitted average monthly flow of 0.30 MGD. During this time, the Facility discharged average monthly flows ranging from 0.19 MGD to 0.27 MGD, with an average of 0.23 MGD, and discharged maximum daily flows ranging from 0.20 MGD to 1.28 MGD, with an average of 0.42 MGD.

8.1.3 Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), and Settleable Solids

This Draft Permit proposes to continue the 2004 Permit's requirement of average monthly and average weekly TSS effluent limits of 75 lbs/day and 113 lbs/day, respectively, and the twice weekly monitoring frequency. However, due to the increase in permitted average monthly flow, the Draft Permit proposes to reduce the average monthly concentration limit from 30 mg/L to 20 mg/L and the average weekly concentration limit from 45 mg/L to 30 mg/L, as further described below.

The BOD and TSS concentration limits in the 2004 Permit are based upon the secondary treatment requirements of 40 CFR § 133.102, which states that the 30-day average BOD_5 shall not exceed 30 mg/l, the 7-day average BOD_5 shall not exceed 45 mg/l, and the 30-day average percent removal of BOD_5 shall not be less than 85 percent.

As explained in the 2004 Fact Sheet, the BOD and TSS mass limits of the 2004 Permit were calculated as follows, using the concentration limits defined above per 40 CFR § 133.102 and the average monthly flow permitted under the 2004 Permit (0.30 MGD):

Mass limit	*Flow x Concentration x Conversion Factor = lbs/day*
30-day average	*0.30 mgd x 30 mg/L x 8.34(lb)(l)/(mg)(gal) = 75 lbs/day*
7-day average	*0.30 mgd x 45 mg/L x 8.34(lb)(l)/(mg)(gal) = 113 lbs/day*

Because the Draft Permit proposes an increase of the permitted flow, revised concentration limits must be calculated in accordance with the provisions of the state antidegradation policy. To accomplish this, the current mass limitations for BOD and TSS are held constant and divided by the new permitted flow. The calculations for the monthly average and weekly average concentration limits for the Draft Permit are:

Concentration limit	2004 Permit Mass limit ÷ Conversion Factor ÷ New Permitted Flow=mg/L
30-day average	75 lbs/day ÷ 8.34 (lb)(L)/(mg)(gal) ÷ 0.46 MGD = 20 mg/L
7-day average	113 lbs/day ÷ 8.34 (lb)(L)/(mg)(gal) ÷ 0.46 MGD = 30 mg/L

The maximum daily limits for BOD and TSS and the limits for Settleable Solids are no longer State certification requirements and were removed in drafting the 2004 Permit.

There were no exceedances of BOD_5 or TSS measured in effluent samples between October 1, 2004 and February 28, 2010, nor were there any months where percent removal of BOD_5 was lower than the 2004 Permit requirements. However, during this time, there were five months (March and April 2005, November 2006, January 2007, and March 2008) where TSS percent removal was less than the 2004 Permit's required 85 percent. According to the Facility, this occurred because there was low level of solids in the influent, due to inflow and infiltration diluting the influent TSS. Tables 1 and 2 show the minimum, maximum, and average values of influent and effluent BOD_5 and TSS as reported by the Facility between October 1, 2004 and February 28, 2010. Attachment D to this Fact Sheet shows all results reported during this timeframe.

Table 1: Summary of Influent and Effluent BOD Results

	Influent BOD, 5-day, 20 deg. C		Effluent BOD, 5-day, 20 deg. C				BOD, 5-day (% removal)
	Monthly Average (lb/day)	Monthly Average Minimum (mg/L)	Average Monthly (lbs/day)	Average Weekly (lbs/day)	Average Monthly (mg/L)	Average Weekly (mg/L)	Monthly Average Minimum
2004 Permit Limits	Report	Report	75	113	30	45	85
Minimum	148.6	3.2	2.3	2.34	1.7	2	85.5
Maximum	724	516	17.8	20.8	15.1	18.2	99.4
Average	416.8	261.1	5.7	7.2	3.1	4.0	98.2
# Exceeds Limits	N/A	N/A	0	0	0	0	0

Table 2: Summary of Influent and Effluent TSS Results

	Influent TSS		Effluent TSS				TSS (% removal)
	Monthly Average (lb/day)	Monthly Average Minimum (mg/L)	Average Monthly (lbs/day)	Average Weekly (lbs/day)	Average Monthly (mg/L)	Average Weekly (mg/L)	Monthly Average Minimum
2004 Permit Limits	Report	Report	75	113	30	45	85
Minimum	63.6	21.8	3.7	4.2	2.8	3.0	73.0
Maximum	507.0	235.0	30.7	69.2	15.1	30.0	97.9
Average	146.0	87.6	9.1	13.7	5.1	7.1	90.4
# Exceeds Limits	N/A	N/A	0	0	0	0	**5**

8.1.4 pH

The Massachusetts Surface Water Quality Standards require that pH in a Class B water "…be in the range of 6.5 through 8.3 standard units and not more than 0.5 units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to this Class" (314 CMR 4.05(3)(b)3). In order to meet these standards, the 2004 Permit requires pH to be in the range of 6.5 through 8.3, and be tested daily.

In order to continue to address the Standards and to comply with antibacksliding provisions (40 CFR §122.44(l)(1)), EPA is not proposing any change to this limit in this round of permitting.

A summary of the discharge monitoring data submitted by the facility during the time period of October 1, 2004 to February 28, 2010 is included as Attachment D to this Fact Sheet. During this time, 65 pH values were reported, with the minimum, maximum, and average values as shown in Table 3. There were no reports of pH values outside the range of 6.5 to 8.3 S.U.

Table 3: Summary of pH Results (S.U.)

	Minimum	Maximum
2004 Permit Limits	6.5	8.3
Minimum	6.5	7.0
Maximum	7.3	7.9
Average	6.9	7.5
# Exceeds Limits	0	0

8.1.5 Bacteria (Fecal coliform and E. coli)

The 2004 Permit includes average monthly and maximum daily effluent limits of 200 cfu/100 mL and 400 cfu/100 mL, respectively, for fecal coliform, and requires monitoring once per week from April 1 through October 31. As further explained below, the Draft Permit proposes to replace these effluent limits for fecal coliform limits for *E.coli* and continue the weekly monitoring requirement from April 1 through October 31.

The *E. coli* limits are proposed in the Draft Permit based upon the recently adopted *E. coli* criteria in the revised Massachusetts Surface Water Quality Standards for Class B waters that were promulgated on December 29, 2006 and approved by EPA on September 19, 2007. In the revised water quality standards, fecal coliform bacteria have been replaced by *E. coli* as the bacterial indicator organism. In order to receive the state water quality certification under Section (401)(a)(1) of the Clean Water Act, as defined in 40 CFR § 124.53, MassDEP now requires *E. coli* limits in all permit reissuances.

The draft permit includes a compliance schedule for attaining the new limits. The existing fecal coliform limits of 200 colony forming units (cfu)/100 ml for the average monthly geometric mean limit and 400 cfu/100 ml for the maximum daily limit are maintained for the first full monitoring period under the new permit (i.e. through October 2011). During this one year period the permittee shall report E.coli on a monthly basis. After October 31, 2011, the *E. coli* limits will go into effect, and the fecal coliform limit will end.

The *E. coli* limitations proposed in the Draft Permit are a geometric monthly mean of 126 colony forming units per 100 mL (cfu/mL), per the Surface Water Quality Standards (314 CMR § 4.05(3)(b)(4)), and a maximum daily value of 409 cfu/100 ml (this is the 90% distribution of the geometric mean of 126 cfu/ml). The *E. coli* limits are seasonal, and the monitoring period in the 2004 Permit from April 1st - October 31st is continued in the Draft Permit to ensure adequate protection of the receiving water during the entire season when the river is most likely to be used for recreational purposes, in support of the contact recreation designated uses.

As shown in Attachment D to this Fact Sheet, there were no exceedances of Fecal Coliform limits between October 1, 2004 and October 31, 2009. During this time, 36 average monthly and maximum daily values were reported with the following minimums, maximums, and averages:

Table 4: Summary of Fecal Coliform Reported Values (# colonies per 100 mL)

	Average Monthly	Maximum Daily
2004 Permit Limits	200	400
Minimum	1	2
Maximum	130	227
Average	36	65
# Exceedances	0	0

8.1.6 Nutrients

The Environmental Appeals Board recently issued a major decision on nutrients (*In re City of Attleboro Department of Wastewater*, NPDES Appeal No. 08-08, 14 E.A.D. (EAB, September 15, 2009). In that decision, the Board found reasonable the Region's attempt to reconcile unavoidable scientific uncertainty with its duty under the Clean Water Act to "ensure" compliance with water quality standards and validated the Region's methodology of using EPA technical guidance and peer-reviewed literature for deriving numeric effluent limitations to implement narrative nutrient standards under 40 C.F.R. § 122.44(d)(1)(vi) in the absence of site-specific studies (or waste load allocations). EPA believes that phosphorus discharged by the facility has the reasonable potential to cause or contribute to an exceedance of state water quality standards, and has proposed phosphorus limitations in the Draft Permit that are more stringent than the 2004 Permit. Similarly, the nitrogen monitoring and optimization requirements discussed below have also been included in the Draft Permit in order to ensure that nitrogen loading at the Massachusetts/Connecticut state line does not exceed the allocation in the final *Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (December 2000)[8].

8.1.6.1 Total Phosphorus

For the time period between May 1 and October 31 each year, the 2004 Permit included an average monthly Total Phosphorus effluent limit of 1.0 mg/L, measured weekly, as well as reporting of maximum daily Total Phosphorus concentrations. As further described in this section of the Fact Sheet, the Draft Permit proposes to include refined Total Phosphorus Limits that span the entire calendar year.

While phosphorus is an essential nutrient for the growth of aquatic plants, it stimulates rapid plant growth in freshwater ecosystems when it is present in high quantities. The excessive growth of aquatic plants and algae within freshwater systems negatively impacts water quality and can interfere with the attainment of designated uses by (1) increasing the oxygen demand within the water body (to support an increase in both plant respiration and the biological breakdown of dead organic (plant) matter); (2) causing an unpleasant appearance and odor; (3) interfering with navigation and recreation; (4) reducing water clarity; and (5) reducing the quality and availability of suitable habitat for aquatic life. Cultural (or accelerated) eutrophication is the term used to describe excessive plant growth in a water body that results from nutrients entering the system as a result of

8 http://www.ct.gov/dep/lib/dep/water/lis_water_quality/nitrogen_control_program/tmdl.pdf

human activities. Discharges from municipal and industrial wastewater treatment plants, agricultural runoff, and stormwater are examples of human-derived (i.e., anthropogenic) sources of nutrients in surface waters.

The Massachusetts Water Quality Standards do not contain numerical criteria for phosphorus. The narrative criterion for nutrients states that nutrients "shall not exceed the site-specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00." The Massachusetts Water Quality Standards also require that "any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non-POTWs, to remove such nutrients to ensure protection of existing and designated uses." (314 CMR § 4.05(5)(c)). The MassDEP has established that a monthly average total phosphorus limit of 0.2 mg/l represents the highest and best practical treatment for POTWs.

As discussed above in Section 4 of this Fact Sheet, this segment of the Housatonic River is identified in the *Final Massachusetts Year 2008 Integrated List of Waters* as requiring a TMDL for phosphorus, and excess algal growth. In addition, Lake Lillinonah, a 1,600-acre impoundment of the Housatonic River located over 50 miles downstream in Connecticut (Southbury and Bridgewater abut the east bank, Newtown, Brookfield, and New Milford abut the west bank), is included as a 303(d) waterbody on the State of State of Connecticut's *2008 Integrated Water Quality Report to Congress.*[9] The 2008 report identified chlorophyll-*a*, excess algal growth, and nutrient/euthrophication biological indicators as causing an impairment of recreational uses in Lake Lillinonah, which suggests that the effects of upstream nutrient sources are accumulating and being observed in downstream impoundments on the Housatonic River.

EPA has published national guidance documents which contain recommended total phosphorus criteria and other indicators of eutrophication. In order to control eutrophication, EPA's *Quality Criteria for Water 1986* (the Gold Book)[10] recommends that in-stream phosphorus concentrations should be less than 100 ug/l (0.100 mg/l) in streams or other flowing waters not discharging directly to lakes or impoundments.

More recently, EPA released Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published ecoregion-specific criteria represent conditions in waters minimally impacted by human activities, and thus representative of water without cultural eutrophication. The Town of Stockbridge is within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. Recommended criteria for this ecoregion is found in *Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion VIII*,[11] published in December, 2001, and includes a total phosphorus criteria of 10 ug/l (0.010 mg/l).

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9 http://www.ct.gov/dep/lib/dep/water/water_quality_management/305b/2008_final_ct_integratedwqr.pdf

10 http://water.epa.gov/scitech/swguidance/waterquality/standards/criteria/aqlife/upload/2009_01_13_criteria_goldbook.pdf

11 http://www.epa.gov/waterscience/criteria/nutrient/ecoregions/rivers/rivers_8.pdf

The 2004 Permit included an average monthly phosphorus limit of 1.0 mg/l to meet Water Quality Standards, which at the time of development, was consistent with other NPDES permits on the Housatonic River. Using the 2004 Permit's dilution factor of 138, this limit results in an in-stream phosphorous concentration less than 10 ug/l (0.010 mg/l), which is less than the recommended concentration in EPA's *Quality Criteria for Water 1986* and equal to the ecoregion criteria.

For development of effluent limits in the Draft Permit, because there is an increase in permitted flow, a phosphorus limit based upon the current mass loading must be calculated in order to comply with the antidegradation provisions of the Massachusetts Antidegradation Policy. This is accomplished by maintaining the current mass phosphorus loading and dividing by the new permitted flow.

Current mass loading = 2004 Permitted flow * 2004 permit limit * CF
= 0.30 mgd * 1.0 mg/l * 8.34 = 2.5 lbs/day

Revised phosphorus limit = 2004 Permit mass loading ÷ Draft Permit Flow ÷ CF
= 2.5 lbs/day ÷ 0.46 mgd ÷ 8.34 = 0.65 mg/l

For purposes of comparison, EPA also used the Gold Book criterion to calculate the permit limit for phosphorus. The Gold Book criterion was developed from an effects-based approach versus the reference conditions-based approach used to develop the ecoregion criteria. The effects-based approach is taken because it is more directly associated with an impairment to a designated use (e.g. fishing). The effects-based approach provides a threshold value above which water quality impairments are likely to occur. It applies empirical observations of a causal variable (i.e. phosphorus) and a response variable (i.e. algal growth) associated with designated use impairments. Referenced-base values are statistically derived from a comparison within a population of rivers in the same ecoregional class. They are a quantitative set of river characteristics (physical, chemical, and biological) that represent minimally impacted conditions.

Using the Gold Book criteria and accounting for the in-stream phosphorus concentration, a permit limit for phosphorus is normally calculated as follows:

$$C_{WWTP} = \{(Q_R + Q_{WWTP}) * C_{WQ} - (Q_R * C_R)\} / Q_{WWTP}$$

where:

C_{WWTP} = Phosphorus concentration limit for WWTP
Q_R = 7Q10 flow of the receiving stream
Q_{WWTP} = Design flow of WWTP
C_{WQ} = In-stream water quality criteria
C_R = In-stream phosphorus concentration

The 2002 Water Quality Assessment report provided in-stream phosphorus sampling data at Station 19C located just downstream of the Lee WWTF discharge and approximately eight (8) miles upstream of the Stockbridge WWTP. This data indicated that the Gold Book in-stream phosphorus of 0.1 mg/l was being exceeded at that location. However, since that time, NPDES permits with more stringent phosphorus limits have been issued to facilities upstream of the sampling location.

Specifically, the 17 MGD Pittsfield facility now has a 0.1 mg/l limit, the Lenox WWTP a 1.0 mg/l limit, and the Lee WWTF a 0.2 mg/l limit for phosphorus in their current NPDES permits. The 0.2 mg/l phosphorus limit for Lee facility, which is the farthest downstream, was established to meet the Gold Book in-stream criteria of 0.1 mg/l at its discharge.

An in-stream phosphorus concentration has been calculated at the point just above of the Stockbridge WWTP. First, the mass of phosphorus in the Houstaonic River at a point just downstream of the Lee WWTP discharge was estimated using the 7Q10 flow upstream of Lee plus the average Lee WWTP discharge and in-stream total phosphorus concentration of 0.1 mg/l. Then, phosphorus loads from the downstream direct dischargers, Laurel Mill and Willow Mill were added, and the sum divided by the estimated 7Q10 flow of the Houstaonic River just upstream of the Stockbridge discharge.

The 7Q10 flow just upstream of the Lee WWTP is calculated as follows:

Drainage Area @ Great Barrington USGS gage station = 282 square miles
Drainage Area @ Lee WWTP = 165 square miles
7Q10@ Great Barrington USGS gage station = 69 cfs
7Q10@ Lee WWTP = 7Q10@ gage station ÷ drainage area @ gage station x drainage area @ Lee WWP
7Q10@ outfall = 69 cfs ÷ 282 square miles x 165 square miles = 40.3 cfs = 26.1 mgd

The data from the Discharge Monitoring Reports indicates that the Lee WWTP average monthly flow is 0.84 MGD, and the Onyx Specialty Papers, Inc. (formerly Mead Willow Mill) and MW Custom Papers LLC Laurel Mill discharge about 0.2 and 0.9 pounds of phosphorus per day, respectively. In addition, data shows that tributaries between the Lee WWTP discharge and the Stockbridge WWTF discharge locations contribute phosphorus concentrations ranging from 10 to 30 ug/L. To be conservative, EPA elected to use the higher of the two concentrations in the following calculations and elected to assume the tributaries contribute a flow equal to the difference between the Housatonic River flow at the Stockbridge WWTP and at the Lee WWTP. The in-stream phosphorus concentration at the Stockbridge discharge is calculated as follows:

$$C_{HS} = ((M_{HL} + M_{WM} + M_{LM} + M_{Trib} \div Q_{HS})) \div CF$$

where

C_{HS} = in-stream phosphorus concentration at Stockbridge WWTP discharge
M_{HL} = lbs of phosphorus in the Housatonic @ the Lee WWTP
= (7Q10 flow @ Lee WWTP + Lee WWTP average discharge) * in-stream Phosphorus criteria * CF
= ((26.1 mgd + 0.84 mgd) * 0.1 mg/l * 8.34) = 22.4 lbs/day
M_{WM} = lbs/day of phosphorus from Onyx Specialty Papers, Inc. (0.2 lbs/day)
M_{LM} = lbs/day of phosphorus from MW Custom Papers LLC Laurel Mill (0.9 lbs/day)
M_{Trib} = lbs/day of phosphorus from Tributaries
= estimated concentration in tributaries * difference in 7Q10 flows @ Stockbridge WWTP and Lee WWTP (estimated Tributary flows) * CF
= 0.030 mg/L * (41.1 mgd - 26.1 mgd) * 8.34

= 3.8 lbs/day
Q_{HS} = Housatonic River flow at Stockbridge discharge (41.1 mgd)
CF = Conversion factor for mg/l to lbs/day = 8.34

C_{HS} = ((22.4 lbs/day + 0.2 lbs/day + 0.9 lbs/day + 3.8 lbs/day) ÷ 41.1 mgd) ÷ 8.34 = 0.08 mg/l

Using the in-stream phosphorus concentration of 0.08 mg/l calculated above, a phosphorus limit can be calculated for the Stockbridge WWTP based upon the Gold book criteria.

$C_{WWTP} = \{(Q_R + Q_{WWTP}) * C_{WQ} – (Q_R * C_R)\} / Q_{WWTP}$
= {((41.1 mgd + 0.46 mgd) * 0.1 mg/l) – (41.1 mgd * 0.08mg/l)} / 0.46
= {4.2 – 3.3}/ 0.46 = 2 mg/l

This limit is greater than the 2004 Permit limit of 1.0 mg/l and can be attributable to the relatively high dilution factor and the presumed improvements in the upstream water quality due to more stringent phosphorus limits in the more recent NPDES permits mentioned above. However, this limit is less stringent than the limit calculated using the current mass loading and the new permitted flow.

Therefore, in order to comply with the antidegradation provisions of the State Antidegradation Policy, the Draft Permit includes a seasonal average monthly Total Phosphorus limit of 0.65 mg/l from April 1 through October 31, as well as reporting of maximum daily Total Phosphorus concentrations.

Surface waters can also be affected by the year-round accumulation of phosphorus. The accumulated phosphorus can be released during warmer water temperatures and contribute to algal growth. Consequently, this Draft Permit establishes a 1.0 mg/l Total Phosphorus limit for the period of November 1st through March 31st, and requires reporting of maximum daily concentrations.

These limits meet Massachusetts Water Quality Standards and are sufficiently stringent to ensure the discharge will not cause any exceedences of Water Quality Standards downstream.

8.1.6.2 Nitrogen

The 2004 Permit requires reporting of average monthly Total Kjeldahl Nitrogen, Nitrate-Nitrogen, and Nitrite-Nitrogen on a quarterly basis. The Draft Permit proposes monthly reporting of average monthly and maximum daily effluent concentrations and masses of Total Nitrogen, Total Kjeldahl Nitrogen, Total Ammonia Nitrogen, Nitrate Nitrogen Total, and Nitrite Nitrogen Total. These changes are further explained below.

In December 2000, the Connecticut Department of Environmental Protection (CT DEP) completed a Total Maximum Daily Load (TMDL) for addressing nitrogen-driven eutrophication impacts in Long Island Sound. The TMDL included a Waste Load Allocation (WLA) for point sources and a Load Allocation (LA) for non-point sources. The point source WLA for out-of-basin sources (Massachusetts, New Hampshire and Vermont wastewater facilities discharging to the Connecticut, Housatonic and Thames River watersheds) requires an aggregate 25% reduction from the baseline total nitrogen loading estimated in the TMDL.

The baseline total nitrogen point source loadings estimated for the Connecticut, Housatonic, and Thames River watersheds were 21,672 lbs/day, 3,286 lbs/day, and 1,253 lbs/day respectively (see Table 5). The estimated current point source total nitrogen loadings for the Connecticut, Housatonic, and Thames Rivers respectively are 13,836 lbs/day, 2,151 lbs/day, and 1,015 lbs/day, based on recent information and including all POTWs in the watershed (Please note that EPA's current estimate of loadings to the Connecticut River is slightly greater than the CT DEP's, but is based on more recent information and includes all POTWs in the watershed). The following table summarizes the estimated baseline loadings, TMDL target loadings, and estimated current loadings:

Table 5: Long Island Sound TMDL
Nitrogen Baseline Loadings, Targets, and Current Loadings

Basin	Baseline Loading[1] (lbs/day)	TMDL Target[2] (lbs/day)	Current Loading[3] (lbs/day)
Connecticut River	21,672	16,254	13,836
Housatonic River	3,286	2,464	2,151
Thames River	1,253	939	1,015
Totals	26,211	19,657	17,002

1. Estimated loading from TMDL, (see Appendix 3 to CT DEP "Report on Nitrogen Loads to Long Island Sound", April 1998)
2. Reduction of 25% from baseline loading
3. Estimated current loading from 2004 – 2005 DMR data – detailed summary attached as Appendix E.

The TMDL target of a 25 percent aggregate reduction from baseline loadings is currently being met.

The estimated current loading for the Stockbridge WWTP used in the above analysis was 22.2 lbs/day, based upon a Total Nitrogen concentration of 11.1 mg/l and the average flow of 0.24 MGD (11.1 mg/L * 0.24 MGD * 8.34), as indicated in the Facility's 2004 through 2005 DMRs. However, since that time, the facility has been expanded in capacity (and the Draft Permit includes the increased flow limit) and more recent DMR data (see Attachment D, Table D-4) indicates that the Total Nitrogen concentrations have increased to an monthly average minimum of approximately 14.5 mg/L. Between October 1, 2004 and January 31, 2010, quarterly measurements of nitrogen parameters in the Facility's discharge resulted in the minimum, maximum, and average concentrations shown in Table 6.

Table 6: Summary of Nitrogen Results (mg/L)

	Nitrogen, total Kjeldahl *	Nitrogen, nitrate total (as N) *	Nitrogen, nitrite total (as N) *	Nitrogen, Total *
Minimum	0.10	1.3	0.00	2.71
Maximum	21.0	29.0	0.68	42.02
Average	1.77	12.5	0.11	14.36

* All values are presented as monthly average minimum.

In order to ensure that the aggregate nitrogen loading from out-of-basin point sources does not

exceed the TMDL target of a 25 percent reduction over baseline loadings, EPA has included a condition in the Draft Permit requiring the permittee to evaluate alternative methods of operating their Plant to optimize the removal of nitrogen, and to describe previous and ongoing optimization efforts. Specifically, Part I.E. of the Draft Permit requires an evaluation of alternative methods of operating the existing wastewater treatment facility in order to control total nitrogen levels, including, but not limited to, operational changes designed to enhance nitrification (seasonal and year round), incorporation of anoxic zones, septage receiving policies and procedures, and side stream management. This evaluation is required to be completed and submitted to EPA and MassDEP within one year of the effective date of the permit, along with a description of past and ongoing optimization efforts. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years.

The agencies intend to annually update the estimate of all out-of-basin total nitrogen loads and may incorporate total nitrogen limits in future permit modifications or reissuances as may be necessary to address increases in discharge loads, a revised TMDL, or other new information that may warrant the incorporation of numeric permit limits. There have been significant efforts by the New England Interstate Water Pollution Control Commission (NEIWPCC) work group and others since completion of the 2000 TMDL, which are anticipated to result in revised wasteload allocations for in-basin and out-of-basin facilities. Although not a permit requirement, it is strongly recommended that any facilities planning that might be conducted for this Plant consider alternatives for further enhancing nitrogen reduction.

8.1.7 Whole Effluent Toxicity (WET)

The Draft Permit proposes to revise the whole effluent toxicity limitations from Acute $LC_{50} \geq 50\%$ to Acute $LC_{50} \geq 100\%$, and proposes to increase monitoring from twice per year to once per quarter. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent shall cause no more than a 50% mortality rate. Based on the results of the most recent WET tests, the Draft Permit also proposes the permittee only continue to test the daphnid, *Ceriodaphnia dubia*, as it a more sensitive to acute toxicity than the fathead minnow, *Pimephales promelas*.

The Draft Permit includes a provision that the permittee may request a reduction in the WET testing frequency, after submitting one year (a minimum of four consecutive sets) of WET test results, all demonstrating compliance with the permit limits.

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, found at 314 CMR § 4.05(5)(e), include the following narrative statements and require 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. For pollutants not otherwise listed in 314 CMR 4.00, the National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002 published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters unless the Department*

either established a site specific criterion or determines that naturally occurring background concentrations are higher Where the Department determines that naturally occurring background concentrations are higher, those concentrations shall be the allowable receiving water concentration...The Department may establish site specific criteria for toxic pollutants based on site specific considerations. Site specific criteria, human health risk levels and permit limits will be established in accordance with … [314 CMR § 4.05(5)(e)(1)(2)(3)(4)".

National studies conducted by the Environmental Protection Agency 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 contributions, the State narrative water quality criterion, the level of dilution at the discharge location, and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit includes an acute (LC_{50}) whole effluent toxicity (WET) limitation (see also "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants", 49 Fed. Reg. 9016 March 9, 1984, and EPA's "Technical Support Document for Water Quality-Based Toxics Control", March 1991).

The Massachusetts Department of Environmental Protection's Division of Watershed Management has a current toxics policy[12] which requires toxicity testing for dischargers such as the Stockbridge WWTF. In addition, EPA feels that toxicity testing is required to assure that the synergistic effects of the pollutants in the discharge do not cause toxicity, even though the pollutants may be at low concentrations in the effluent. The inclusion of whole effluent toxicity limitations in the Draft Permit will ensure that the Facility does not discharge combinations of toxic compounds into the Housatonic River in amounts which would affect human or aquatic life.

Due to the increase in the permitted flow, the dilution factor for the Stockbridge WWTP is reduced from 138 to 91. Pursuant to EPA Region 1 policy, and MassDEP's *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, discharges having a dilution ratio between 20:1 and 100:1 require acute toxicity testing four times per year, and also require LC_{50} limits of $\geq$100%. Therefore, the monitoring frequency has been increased to four (4) times per year and the LC_{50} limit has been made more stringent (the limit $\geq$50% in the 2004 Permit and is $\geq$ 100% in the Draft Permit). The Draft Permit also contains a provision that allows the permittee to request a reduction in WET testing after submitting **one year** (a **minimum** of four consecutive sets) of Whole Effluent Toxicity (WET) test results, all of which demonstrate compliance with the WET permit limits.

As shown in Attachment D, since October 1, 2004, the Facility has conducted eleven WET tests, where all eleven tests showed Acute LC_{50} to be greater than or equal to 100% for both the daphnid, *Ceriodaphnia dubia*, and the fathead minnow, *Pimephales promelas*.

9. Sludge

The Stockbridge WWTF has its sludge transported offsite to the Fitchburg WWTF for treatment and disposal.

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12 *Implementation Policy for the Control of Toxic Pollutants in Surface Waters*, MassDEP, February 23, 1990, http://www.mass.gov/dep/water/laws/toxicpol.doc

Section 405(d) of the Clean Water Act (CWA) requires that EPA develop technical standards regulating the use and disposal of sewage sludge. These regulations, found at 40 CFR Part 503, regulate the use and disposal of domestic sludge that is land applied, disposed in a surface disposal unit, or fired in a sewage sludge incinerator. Part 503 regulations have a self-implementing provision; however, the CWA requires implementation through permits.

The Draft Permit has been conditioned to ensure that sewage sludge use and disposal practices meet the CWA Section 405(d) Technical Standards and the 40 CFR Part 503 regulations. EPA encourages the permittee to make use of the guidance document entitled "EPA Region I NPDES Permit Sludge Compliance Guidance, November 1999" (http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf), prepared for use by permittees in helping to determine the appropriate sludge conditions for the chosen method of sewage sludge use or disposal practices.

The Draft Permit requires the permittee to submit an annual report to EPA and MassDEP by **February 19th of each year**, containing the information specified in the 40 CFR Part 503 (see the sludge compliance guidance document for additional guidance) for the permittee's chosen method of sludge disposal.

10. Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. Sect. 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NOAA Fisheries) if EPA's action or proposed actions that it funds, permits or undertakes, "may adversely impact any essential fish habitat." 16 U.S.C. Sect. 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. Sect. 1802(10). Adverse impact means any impact which reduces the quality and/or quantity of EFH. 50 CFR Sect. 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative or synergistic consequences of actions. Essential Fish Habitat is only designated for fish species for which federal Fisheries Management Plans exist. 16 U.S.C. Sect. 1855(b)(1)(A). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

A review of the relevant essential fish habitat information provided by NOAA Fisheries on the NOAA fisheries service habitat conservation division website, http://www.nero.noaa.gov/hcd/, indicates that the Housatonic River is not covered by the EFH designation for riverene systems and thus EPA has determined that a formal EFH consultation with NOAA Fisheries is not required.

11. Endangered Species Act

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

States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit.

According to the USFWS listing of federally endangered and threatened species, dated July 31, 2008, the Bog Turtle is the only threatened species listed for Berkshire County. The Bog Turtle is listed as living in welands in the Towns of Egremont and Scheffield. No critical habitat is listed within Berkshire County. According to the Massachusetts Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program list of rare species by Town[13], there are no federally listed endangered or threatened species in the Town of Stockbridge.

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

12. Monitoring and Reporting

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

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

In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated 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.

13 http://www.mass.gov/dfwele/dfw/nhesp/species_info/town_lists/town_s.htm#stockbridge

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

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

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

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

13. 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.

14. State Certification Requirements

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

15. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to **Ms. Susan Murphy, U.S. Environmental Protection Agency, Region 1 (New England), 5 Post Office Square - Suite 100, Mail Code OEP06-1, Boston, MA 02109-3912**. Any person, prior to such date, may submit a

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

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

16. EPA and MassDEP Contact

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

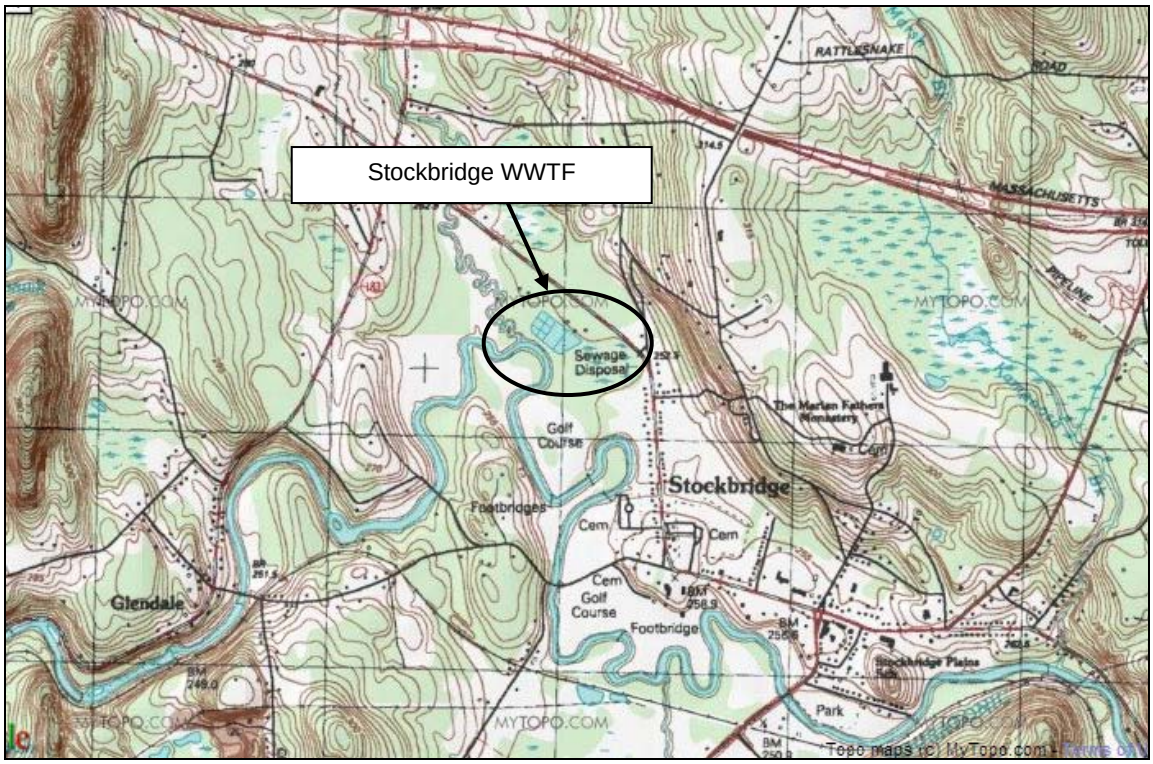
Susan Murphy
U.S. Environmental Protection Agency
Region 1 (New England)
5 Post Office Square, Suite 100
Mail Code OEP06-1
Boston, MA 02109-3912
Telephone: (617) 918-1534
Email: murphy.susan@epa.gov

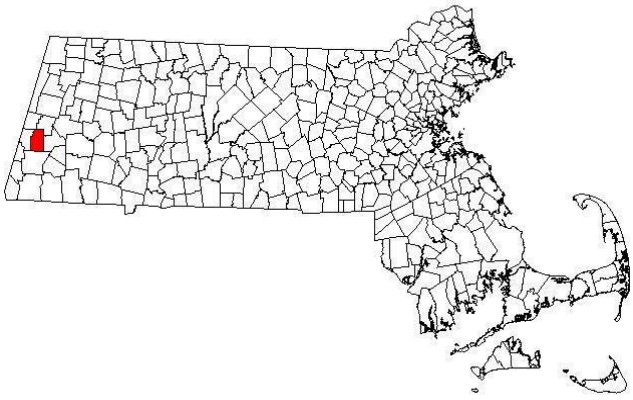
Kathleen Keohane
Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608
Telephone: (508) 767-2856
Email: kathleen.keohane@state.ma.us

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

15. Attachments

Attachment A – Site Locus Map





Attachment B – Aerial View of Facility

Stockbridge WWTP
Town of Stockbridge

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Feet

2/19/2009

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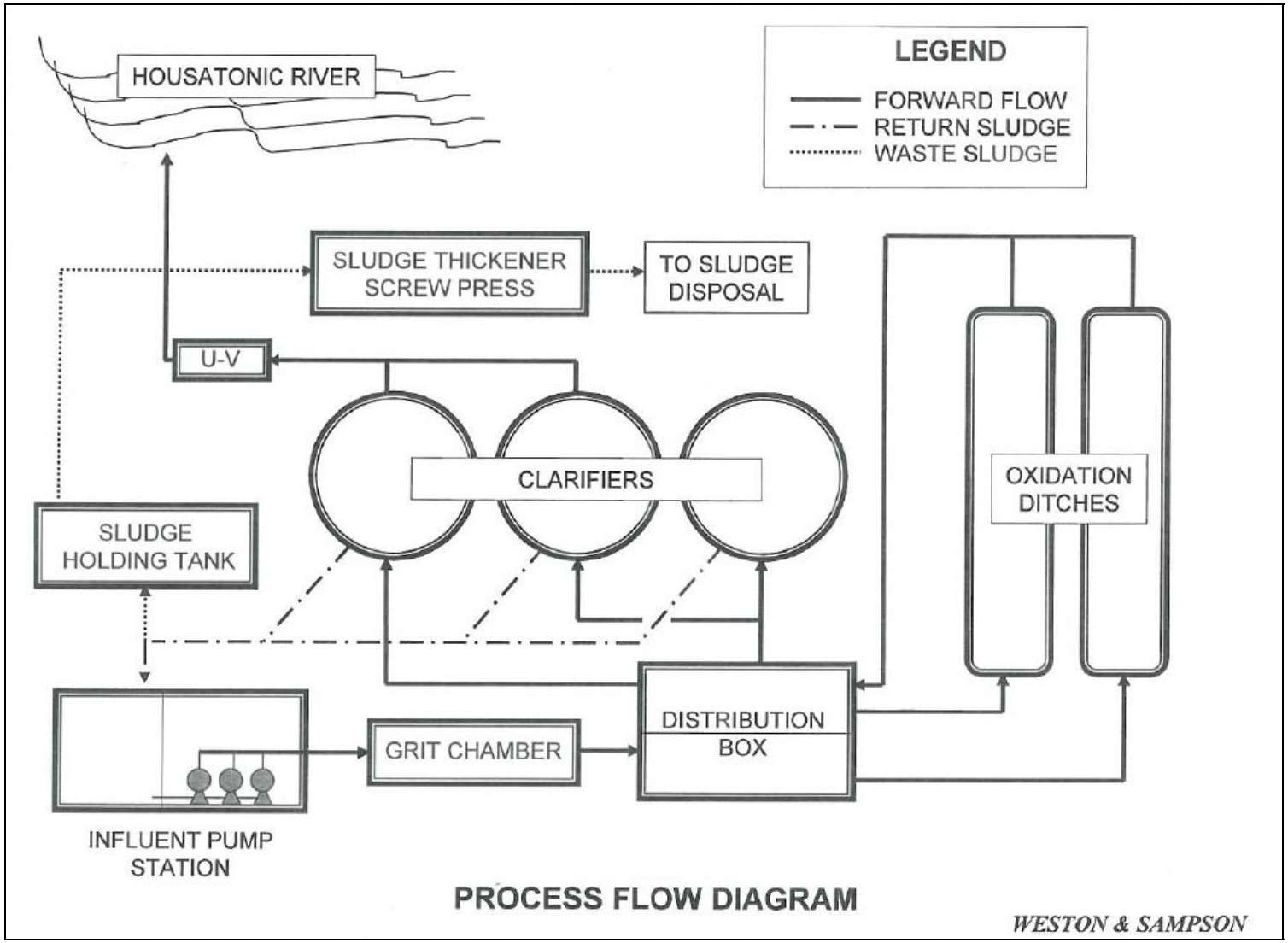
Attachment C – Process Flow Diagram



Attachment D - DMR Data Summary – October 1, 2004 through February 28, 2010

Table D-1: Flow and pH

MONITORING PERIOD END DATE	Flow (MGD)		pH (s.u.)	
	Average Monthly	Maximum Daily	Minimum	Maximum
10/31/2004	0.21	0.27	7.1	7.6
11/30/2004	0.22	0.38	7.2	7.7
12/31/2004	0.21	0.34	7.3	7.6
1/31/2005	0.21	0.65	7.2	7.9
2/28/2005	0.19	0.36	7.2	7.8
3/31/2005	0.2	0.63	7.3	7.8
4/30/2005	0.22	0.56	7.2	7.9
5/31/2005	0.21	0.24	7	7.8
6/30/2005	0.22	0.29	6.8	7.5
7/31/2005	0.22	0.35	6.9	7.4
8/31/2005	0.25	0.36	6.9	7.5
9/30/2005	0.22	0.21	6.7	7.1
10/31/2005	0.22	0.93	6.8	7.7
11/30/2005	0.25	0.61	6.7	7.6
12/31/2005	0.26	0.47	7	7.5
1/31/2006	0.26	0.74	7	7.4
2/28/2006	0.27	0.52	7	7.3
3/31/2006	0.26	0.2	6.8	7.5
4/30/2006	0.22	0.4	6.6	7.4
5/31/2006	0.24	0.38	6.8	7.4
6/30/2006	0.26	0.42	6.8	7.6
7/31/2006	0.26	0.35	6.5	7.1
8/31/2006	0.27	0.29	6.5	7.3
9/30/2006	0.27	0.25	6.5	7.3
10/31/2006	0.26	0.33	6.8	7.3
11/30/2006	0.25	0.41	7	7.5
12/31/2006	0.24	0.26	7	7.6
1/31/2007	0.24	0.39	6.8	7.6
2/28/2007	0.22	0.22	6.9	7.6
3/31/2007	0.24	0.61	7	7.5
4/30/2007	0.24	0.9	7.1	7.6
5/31/2007	0.24	0.3	6.9	7.5
6/30/2007	0.21	0.25	6.8	7.5
7/31/2007	0.23	0.29	6.7	7.2
8/31/2007	0.23	0.26	6.6	7
9/30/2007	0.23	0.21	6.5	7
10/31/2007	0.22	0.23	6.7	7.4

MONITORING PERIOD END DATE	Flow (MGD)		pH (s.u.)	
	Average Monthly	Maximum Daily	Minimum	Maximum
11/30/2007	0.2	0.23	6.8	7.6
12/31/2007	0.22	0.42	6.9	7.6
1/31/2008	0.22	0.33	6.9	7.7
2/29/2008	0.24	1.02	6.9	7.7
3/31/2008	0.25	1.28	6.9	7.6
4/30/2008	0.25	0.54	7	7.6
5/31/2008	0.25	0.27	6.8	7.5
6/30/2008	0.26	0.78	6.8	7.3
7/31/2008	0.26	0.43	6.7	7.4
8/31/2008	0.26	0.26	6.8	7.3
9/30/2008	0.26	0.27	6.7	7.4
10/31/2008	0.26	0.38	6.7	7.3
11/30/2008	0.26	0.23	6.7	7.1
12/31/2008	0.27	0.76	6.7	7.2
1/31/2009	0.25	0.32	6.7	7.2
2/28/2009	0.24	0.27	6.8	7.1
3/31/2009	0.22	0.39	6.9	7.5
4/30/2009	0.21	0.24	6.9	7.3
5/31/2009	0.21	0.25	6.8	7.2
6/30/2009	0.2	0.64	6.8	7.3
7/31/2009	0.21	0.67	6.8	7.4
8/31/2009	0.22	0.52	6.7	7.7
9/30/2009	0.22	0.24	7	7.8
10/31/2009	0.22	0.29	6.8	7.5
11/30/2009	0.22	0.24	6.8	7.5
12/31/2009	0.21	0.24	6.8	7.6
1/31/2010	0.21	0.5	7.1	7.5
2/28/2010	0.21	0.33	7.1	7.5
2004 Permit Limits	**0.3**	**Report**	**6.5**	**8.3**
Minimum	0.19	0.20	6.5	7.0
Maximum	0.27	1.28	7.3	7.9
Average	0.23	0.42	6.9	7.5
Standard Deviation	0.02	0.22	0.2	0.2
# Measurements	65	65	65	65
# Exceeds Limits	0	N/A	0	0

Table D-2: Influent and Effluent BOD, and % Removal

MONITORING PERIOD END DATE	Influent BOD, 5-day, 20 deg. C (lb/d)	Influent BOD, 5-day, 20 deg. C (mg/L)	Effluent BOD, 5-day, 20 deg. C (lbs/d)		Effluent BOD, 5-day, 20 deg. C (mg/L)		BOD, 5-day (% removal)
	Monthly Average	Monthly Average Minimum	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Monthly Average Minimum
10/31/2004	410	238	3.43	2.34	2.34	6.7	98.5
11/30/2004	410	188	3.93	5.2	2.92	5.4	95.9
12/31/2004	309	157.4	5.16	6.6	2.6	3.4	98.4
1/31/2005	277.1	132.9	6.9	11.1	3.3	5	97
2/28/2005	304	170	9.6	16.3	5.2	9.2	85.5
3/31/2005	321	220	6.8	8.2	3.3	5.3	96
4/30/2005	329	275.6	5.2	7.3	2.4	3.2	98.2
5/31/2005	258.5	169	3.6	4.8	2.4	2.7	98.2
6/30/2005	316.5	204.5	3.7	4	2.4	4.3	98.6
7/31/2005	485	235.6	5.5	8.9	2.4	2.5	98.8
8/31/2005	453	272	3.9	4.7	4.3	2.8	99
9/30/2005	325.3	265.7	2.48	3.41	2.02	2.02	99.1
10/31/2005	343	150.7	5.4	7.6	1.9	2.4	98.4
11/30/2005	363.1	151.4	4	4.1	1.7	2	98.5
12/31/2005	287.2	122.7	4.8	5.7	2	2.5	97.9
1/31/2006	264	94	6.2	8.9	2.3	2.9	97.1
2/28/2006	222	103.6	17.8	7.5	2.7	3.4	97.2
3/31/2006	222	103.6	17.8	7.1	2.7	3.8	98.2
4/30/2006	221.7	115	4	5.6	2.7	4.2	97.4
5/31/2006	273	148	4	6.1	2.2	2.6	98.3
6/30/2006	340.6	153.3	4.3	5.1	2	2.2	98.5
7/31/2006	485	178.2	6	10.3	3	3.7	98.5
8/31/2006	335.8	203.6	4.1	5.6	2.3	3	98.8
9/30/2006	329.4	215	3.4	3.7	2.5	3.5	98.8
10/31/2006	314	177.2	3.8	4.1	2.1	2.3	98.4
11/30/2006	148.6	121.4	3.1	4.1	1.9	2.5	87
12/31/2006	320.5	204.8	4.4	4.2	2	2.2	98.7
1/31/2007	321.5	164	13.8	19.2	2.6	2.8	98.1
2/28/2007	315.6	242.1	5.8	8.8	15.1	18.2	98
3/31/2007	430	154	10.3	18.7	12.1	16.6	97.3
4/30/2007	306	108.8	9.2	20.8	2.5	3.6	97.3
5/31/2007	374	200	4.3	5	2.4	3.2	99
6/30/2007	399	275	4	6	2	3	99
7/31/2007	666	370	5.6	7.3	3.4	3.8	99.1
8/31/2007	724	424	6	9	4	5.4	99
9/30/2007	577	516	4.4	6	3.5	4.3	99
10/31/2007	488	462	4.3	6.2	3.3	5.2	98
11/30/2007	503	508	3.6	4.5	2.7	2.8	99.3
12/31/2007	505	362	5.6	8.5	3.6	4.5	98.8
1/31/2008	422	296	7	9	3.8	5.3	98.5

MONITORING PERIOD END DATE	Influent BOD, 5-day, 20 deg. C (lb/d)	Influent BOD, 5-day, 20 deg. C (mg/L)	Effluent BOD, 5-day, 20 deg. C (lbs/d)		Effluent BOD, 5-day, 20 deg. C (mg/L)		BOD, 5-day (% removal)
	Monthly Average	Monthly Average Minimum	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Monthly Average Minimum
2/29/2008	480	271	9	13	2.8	3.7	99
3/31/2008	603	195.5	11.6	14	2.6	3	98.6
4/30/2008	638	3.2	6.5	8.4	3.2	3.6	98.7
5/31/2008	620	338.5	4.3	4.9	2.3	2.6	99.2
6/30/2008	510	275	6.5	11	3	4.2	98.9
7/31/2008	431	401	6.5	7.6	3.2	3.5	99
8/31/2008	688	397	4.7	6.5	2.8	3.4	99.2
9/30/2008	434	333	5.4	4.3	2.5	2.5	99.2
10/31/2008	328	332	9.6	4	2.5	3.1	99.1
11/30/2008	561	411	2.8	3.9	2.4	3.9	99.2
12/31/2008	686	284	4.7	7	2.1	2.2	99.1
1/31/2009	441	305	3.9	4.7	2.8	3.9	98.8
2/28/2009	404	346.5	3.7	5	3.1	3.8	98.7
3/31/2009	346	196	4	6	3.5	2.5	98.6
4/30/2009	395	300	3	4	2.5	2.5	99
5/31/2009	416	336	3	4	2.6	2.8	99
6/30/2009	429	295	5	8	2.5	3.1	99
7/31/2009	490	349	9.4	13.5	2.8	4.3	99.2
8/31/2009	575	342	5.3	6.8	2.6	2.8	99.1
9/30/2009	566	470	2.6	3.8	2.2	2.3	99.4
10/31/2009	471	432	2.3	2.7	2.3	2.6	99.3
11/30/2009	445	351	2.8	2.9	2.3	2.4	99.2
12/31/2009	558	380	4.3	5.6	2.9	4.4	99
1/31/2010	475	380	4.5	8.3	3.3	3.5	99
2/28/2010	404	396	5	5.6	5	5.8	98
2004 Permit Limits	**Report**	**Report**	**75**	**113**	**30**	**45**	**85**
Minimum	148.6	3.2	2.3	2.3	1.7	2.0	85.5
Maximum	724.0	516.0	17.8	20.8	15.1	18.2	99.4
Average	416.8	261.1	5.7	7.2	3.1	4.0	98.2
Standard Deviation	127.8	114.6	3.1	3.9	2.0	2.7	2.3
# Measurements	65.0	65.0	65.0	65.0	65.0	65.0	65.0
# Exceeds Limits	N/A	N/A	0	0	0	0	0

Table D-3: Influent and Effluent TSS, and % Removal

MONITORING PERIOD END DATE	Influent TSS (lb/d)	Influent TSS (mg/L)	Effluent TSS (lbs/d)		Effluent TSS (mg/L)		TSS (% removal)
	Monthly Average	Monthly Average Minimum	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Monthly Average Minimum
10/31/2004	135	99	6.16	5.77	4.15	3.85	88.2
11/30/2004	91.4	63.6	7.1	8.7	4.1	6.1	91.9
12/31/2004	99.8	54.3	8.01	15.9	7.5	7.3	90.4
1/31/2005	150.2	70.3	9.76	15.6	4.85	6.7	92.7
2/28/2005	249	137.1	11	46.7	5.83	7	90.9
3/31/2005	146	88.2	23.8	13.5	6	6.3	**81.3**
4/30/2005	82.3	40.9	14.3	16.4	6.5	7.3	**79.9**
5/31/2005	115.5	74.5	9.9	12.2	6.4	8.1	89
6/30/2005	148	96.6	10.1	10.6	6.6	7.4	91.7
7/31/2005	165	87	10.4	15.4	4.8	6.8	90.7
8/31/2005	127.6	75.4	5.71	7.4	3.3	4.4	95.1
9/30/2005	115.2	85.2	5.4	7.9	4	5.8	93.9
10/31/2005	122	49	11.2	17.4	4.1	5.5	88.1
11/30/2005	118.3	54	8.9	10.5	3.8	4.4	88.3
12/31/2005	134	54.6	7.2	8	3.1	4.1	92.6
1/31/2006	100.2	22	8.8	8.9	2.8	4.2	86.5
2/28/2006	95.7	42.6	7.2	9	3.7	4.5	85.1
3/31/2006	63.6	21.8	5	6.5	3.7	5.1	92.6
4/30/2006	107	49.3	7.6	5.1	4.2	5.1	88.1
5/31/2006	76.1	42.8	5.8	9.1	3.2	6.1	89.2
6/30/2006	88.7	42.6	7.4	9	3.8	5.2	88.6
7/31/2006	134.5	60	10	11.9	4	5.8	90.1
8/31/2006	206.8	114.6	12	14.6	6.5	8.3	91.5
9/30/2006	115	57.6	12	14.1	7.8	8.9	88.3
10/31/2006	128.2	73.1	11.5	16.5	8.2	9.2	86.7
11/30/2006	89	52	8.2	19	4.2	9	**77.6**
12/31/2006	82.6	60.8	7.4	8.5	4.8	5.6	91
1/31/2007	112	59	13.8	21.4	7.4	9.3	**78.5**
2/28/2007	149.2	104.9	21.6	27	15.1	18.3	86
3/31/2007	322	106.6	30.7	69.2	11.1	17.1	87.8
4/30/2007	150.8	88.7	18.8	38	5.8	9.5	87.8
5/31/2007	116	65	5	7	3	4.7	94
6/30/2007	139	86	4.5	5.7	3	3	94
7/31/2007	187	112.6	4.4	6.6	3	3.6	95
8/31/2007	135	113	6.3	9.3	3.8	6	94
9/30/2007	128	123	8.8	10.3	6.6	10.5	93
10/31/2007	102	77	8	11.2	6.6	11.4	92
11/30/2007	144	78	5.1	4.7	3.3	5.1	93
12/31/2007	96.2	58	9.3	12.5	7	8.7	90
1/31/2008	73	49	12.4	15.3	6.7	9	86

MONITORING PERIOD END DATE	Influent TSS (lb/d)	Influent TSS (mg/L)	Effluent TSS (lbs/d)		Effluent TSS (mg/L)		TSS (% removal)
	Monthly Average	Monthly Average Minimum	Average Monthly	Average Weekly	Average Monthly	Average Weekly	Monthly Average Minimum
2/29/2008	144.5	65	16.5	28	6	10.4	90
3/31/2008	226	52.3	21	44.5	5.2	9	**73**
4/30/2008	281	89	9.1	11	3.8	4.2	86.3
5/31/2008	99.2	60.8	3.9	4.3	3.9	5.1	95.6
6/30/2008	192.3	86.8	8.6	20	3.7	8.5	93.8
7/31/2008	234	120	8.1	9.2	3.6	4.7	95
8/31/2008	116.5	67.5	4.9	6	2.9	3.2	94.3
9/30/2008	132	88.5	4.3	6.1	3.6	5	93.4
10/31/2008	80.4	72.2	15.2	39	9	30	85.2
11/30/2008	81	61	8.2	9.8	6	7.8	89
12/31/2008	116	65	7	9	3.6	4.4	90
1/31/2009	308	215	11	14.3	8.2	12.5	93.3
2/28/2009	146	235	5.4	7.6	4.8	5.7	94.7
3/31/2009	106	73	5.2	9	3.5	3.8	92
4/30/2009	220	162	4.7	7.6	3.6	4.5	95
5/31/2009	148	108	5.5	6	4.5	4.9	95
6/30/2009	164	98.2	7.2	11.1	4.2	4.4	93
7/31/2009	507	206	8.4	15	3	4.3	97.9
8/31/2009	140	68	5.5	6.9	3.3	4.6	94.7
9/30/2009	144	150	3.7	4.2	3.2	4.1	96.9
10/31/2009	119.5	128	3.9	5.4	3.4	4.7	96.5
11/30/2009	141	113	4.8	5.5	4.6	7.3	95.3
12/31/2009	194	131	9	10.2	6.1	6.6	93
1/31/2010	176	135	7	9.4	7	9.4	92.8
2/28/2010	134	154	5	6.3	5	6.4	---
2004 Permit Limits	**Report**	**Report**	**75**	**113**	**30**	**45**	**85**
Minimum	63.6	21.8	3.7	4.2	2.8	3.0	73.0
Maximum	507.0	235.0	30.7	69.2	15.1	30.0	97.9
Average	146.0	87.6	9.1	13.7	5.1	7.1	90.4
Standard Deviation	70.5	42.8	5.1	11.5	2.2	4.1	4.8
# Measurements	65.0	65.0	65.0	65.0	65.0	65.0	64.0
# Exceeds Limits	N/A	N/A	0	0	0	0	5

Table D-4: Fecal Coliform, Total Phosphorus, and Nitrogen Parameters

MONITORING PERIOD END DATE	Fecal Coliform (# per 100 mL)		Total Phosphorus (as P) (mg/L)		Nitrogen, total Kjeldahl (mg/L)	Nitrogen, nitrate total (as N) (mg/L)	Nitrogen, nitrite total (as N) (mg/L)
	Average Monthly Geometric Mean	Maximum Daily	Average Monthly	Maximum Daily	Monthly Average Minimum	Monthly Average Minimum	Monthly Average Minimum
10/31/2004	7	12	0.6	0.68	0.1	12	0.01
1/31/2005	-	-	-	-	0.6	10.1	0.01
4/30/2005	1.5	3	-	-	0.6	10.1	0.01
5/31/2005	6.7	19	**1.02**	1.12	-	-	-
6/30/2005	25	90	0.85	1.1	-	-	-
7/31/2005	59.08	109	0.99	1.03	0.32	15.5	0.03
8/31/2005	20.14	34	0.73	0.99	-	-	-
9/30/2005	20.87	25	0.79	0.94	-	-	-
10/31/2005	12.03	17	0.59	-	0.23	5.73	0.01
1/31/2006	-	-	-	-	0.1	9.4	0.01
4/30/2006	4.44	12	-	-	1.4	1.3	0.01
5/31/2006	1.11	2	0.74	0.89	-	-	-
6/30/2006	15.88	32	0.66	0.76	-	-	-
7/31/2006	28.28	94	**1.6**	2.7	0.1	15	0.01
8/31/2006	65.66	135	0.85	1.35	-	-	-
9/30/2006	57.88	152	0.45	0.56	-	-	-
10/31/2006	20.88	58	0.6	0.86	0.1	8.5	0.01
1/31/2007	-	-	-	-	0.1	11.1	0.01
4/30/2007	10.06	11	-	-	0.1	11	0.01
5/31/2007	2.74	6	0.33	0.52	-	-	-
6/30/2007	38.46	70	0.71	-	-	-	-
7/31/2007	62.8	133	0.74	1.2	0.1	29	0.15
8/31/2007	56.24	77	0.99	-	-	-	-
9/30/2007	70.08	92	0.77	1.5	-	-	-
10/31/2007	42.06	61	0.61	0.69	0.1	21	0.15
1/31/2008	-	-	-	-	0.19	8.2	0.17
4/30/2008	28.21	53	-	-	0.25	6.86	0.68
5/31/2008	29.44	45	0.33	0.7	-	-	-
6/30/2008	25.42	27	0.39	0.59	-	-	-
7/31/2008	55.49	98	0.49	0.69	21	20.7	0.34
8/31/2008	62.24	111	0.45	0.6	-	-	-
9/30/2008	41.88	108	0.6	0.79	-	-	-
10/31/2008	45.39	91	0.53	0.74	0.1	21.8	0.06
1/31/2009	-	-	-	-	12.2	12.2	0.01
4/30/2009	29.87	50	-	-	0.1	12.4	0
5/31/2009	12.69	18	0.63	1.22	-	-	-
6/30/2009	46.65	82	0.49	0.67	-	-	-
7/31/2009	129.86	227	0.39	0.55	0.16	6.6	0.06
8/31/2009	44.28	64	0.34	0.54	-	-	-

MONITORING PERIOD END DATE	Fecal Coliform (# per 100 mL)		Total Phosphorus (as P) (mg/L)		Nitrogen, total Kjeldahl (mg/L)	Nitrogen, nitrate total (as N) (mg/L)	Nitrogen, nitrite total (as N) (mg/L)
	Average Monthly Geometric Mean	Maximum Daily	Average Monthly	Maximum Daily	Monthly Average Minimum	Monthly Average Minimum	Monthly Average Minimum
9/30/2009	59.34	60	0.32	0.64	-	-	-
10/31/2009	51.68	52	0.49	0.63	0.48	18.6	0.12
1/31/2010	-	-	-	-	0.52	7.4	0.63
2004 Permit Limits	**200**	**400**	**1**	**Report**	**Report**	**Report**	**Report**
Minimum	1.11	2.00	0.32	0.52	0.10	1.3	0.00
Maximum	129.86	227.00	1.60	2.70	21.00	29.0	0.68
Average	35.87	64.72	0.65	0.90	1.77	12.5	0.11
Standard Deviation	26.59	49.64	0.27	0.44	5.00	6.5	0.19
# Measurements	36	36	31	28	22	22	22
# Exceedances	0	0	**2**	N/A	N/A	N/A	N/A

Table D-5: WET Tests

MONITORING PERIOD END DATE	LC_{50} Static 48Hr Acute Ceriodaphnia (%)	LC_{50} Static 48Hr Acute Pimephales (%)
	Daily Minimum	Daily Minimum
10/31/2004	100	100
7/31/2005	100	100
10/31/2005	100	100
7/31/2006	100	100
10/31/2006	100	100
7/31/2007	100	100
10/31/2007	100	100
7/31/2008	100	100
10/31/2008	100	100
7/31/2009	100	100
10/31/2009	100	100
2004 Permit Limits	**≥50**	**≥50**
Minimum	100	100
Maximum	100	100
Average	100	100
Standard Deviation	0	0
# Measurements	11	11
# Noncompliances	0	0

Attachment E: Massachusetts POTW Discharges to the Housatonic River Watershed

Facility Name	Permit Number	Design Flow (MGD)[1]	Average Flow (MGD)[2]	Total Nitrogen (mg/L)[3]	Total Nitrogen – Existing Flow (lbs/day)[4]
Crane	MA0000671		3.100	8.200	212.003
Great Barrington	MA0101524	3.200	2.600	17.000	368.628
Lee	MA0100153	1.000	0.870	14.500	105.209
Lenox	MA0100935	1.190	0.790	11.800	77.745
MW Custom Papers LLC Laurel Mill (formerly Mead Laurel Mill)	MA0001716		1.500	6.400	80.064
Onyx Specialty Papers, Inc. (Formerly Mead Willow Mill)	MA0001848		1.100	4.600	42.200
Pittsfield	MA0101681	17.000	12.000	12.400	1240.992
Stockbridge	**MA0101087**	**0.300**	**0.240**	**11.100**	**22.218**
West Stockbridge	MA0103110	0.076	0.018	15.500	2.327
Massachusetts Totals			22.218	101.500	2151.386

Notes:

1. Design flow – typically included as a permit limit in MA and VT but not in NH.
2. Average discharge flow for 2004 – 2005. If no data in PCS, average flow was assumed to equal design flow.
3. Total nitrogen value based on effluent monitoring data. If no effluent monitoring data, total nitrogen value assumed to equal average of MA secondary treatment facilities (19.6 mg/l), average of MA seasonal nitrification facilities (15.5 mg/l), or average of MA year round nitrification facilities (12.7 mg/l). Average total nitrogen values based on a review of 27 MA facilities with effluent monitoring data. Facility is assumed to be a secondary treatment facility unless ammonia data is available and indicates some level of nitrification.
4. Current total nitrogen load.