

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),

Hoosac Water Quality District

is authorized to discharge from the facility located at:

**Hoosac Water Pollution Control Facility
667 Simmonds Road
Williamstown, MA 01267**

to receiving water named:

Hoosic River (MA-11-05)

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

The Towns of Williamstown, North Adams and Clarksburg are co-permittees for Part I.B. Unauthorized Discharges, and Part I.C. Operation and Maintenance of the Sewer System, which include conditions regarding the operation and maintenance of the collection systems, owned and operated by the Towns. The responsible Town Departments are:

Town of Williamstown 31 North Street Williamstown, MA 01267	Town of North Adams 10 Main Street North Adams, MA 01247	Town of Clarksburg Town Hall – River Road Clarksburg, MA 01247
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This permit shall become effective on the first of the month following 30 days after signature.

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

This permit supersedes the permit issued on September 27, 2006.

This permit consists of 17 pages in Part I including effluent limitations and monitoring requirements, 25 pages in NPDES Part II Standard Conditions, and Attachment A – Revised Freshwater Chronic Toxicity Test Procedure and Protocol (dated May 2007), Attachment B – Reassessment of Technically Based Industrial Discharge Limits, and Attachment C – NPDES Permit Requirement for Industrial Pretreatment Annual Report.

Signed this 22nd day of February, 2013

/s/SIGNATURE ON FILE

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

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

PART I

A.1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent from outfall serial number **001** to Hoosic River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>	<u>EFFLUENT LIMITS</u>						<u>MONITORING REQUIREMENTS</u> ³	
	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>AVERAGE WEEKLY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
FLOW ²	*****	*****	*****	6.5 MGD	*****	Report MGD	CONTINUOUS	RECORDER
FLOW ²	*****	*****	*****	Report MGD	*****	*****	CONTINUOUS	RECORDER
BOD ₅ ⁴	1344 lbs/Day	*****	Report lbs/day	25 mg/l	37 mg/l	41 mg/l	3/WEEK	24-HOUR COMPOSITE ⁵
TSS ⁴	1344 lbs/Day	*****	Report lbs/day	25 mg/l	37 mg/l	41 mg/l	3/WEEK	24-HOUR COMPOSITE ⁵
Dissolved Oxygen ¹	Not less than 6.0 mg/l						1/DAY	GRAB
pH RANGE ¹	6.5 - 8.3 SU (SEE PERMIT PAGE 6 OF 18, PARAGRAPH I.A.1.b.)						1/DAY	GRAB
ESCHERICHIA COLI ^{1,6} (April 1- October 31)	*****	*****	*****	126 cfu/ 100 ml	*****	409 cfu/ 100 ml	3/WEEK	GRAB
TOTAL CHLORINE RESIDUAL ^{1,7} (April 1- October 31)	*****	*****	*****	0.06 mg/l	*****	0.11 mg/l	1/DAY	GRAB
WHOLE EFFLUENT TOXICITY ^{8, 9, 10, 11}	Acute LC ₅₀ ≥ 100% Chronic NOEC ≥ 18%						4/YEAR	24-HOUR COMPOSITE ⁵

CONTINUED FROM PREVIOUS PAGE

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from treated effluent from outfall serial number **001** to Connecticut River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>	<u>EFFLUENT LIMITS</u>						<u>MONITORING REQUIREMENTS</u> ³	
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>AVERAGE MONTHLY</u>	<u>AVERAGE WEEKLY</u>	<u>MAXIMUM DAILY</u>	<u>MEASUREMENT FREQUENCY</u>	<u>SAMPLE TYPE</u>
TOTAL PHOSPHORUS (April 1 – October 31)	***** *****	***** *****	***** *****	0.6 mg/l	***** *****	***** *****	3/WEEK	24-HOUR COMPOSITE ⁵
TOTAL PHOSPHORUS (November 1 – March 31)	***** *****	***** *****	***** *****	1.0 mg/l	***** *****	***** *****	1/WEEK	24-HOUR COMPOSITE ⁵
DISSOLVED ORTHOPHOSPHORUS (November 1 – March 31)	***** *****	***** *****	***** *****	Report mg/l	***** *****	***** *****	1/MONTH	24-HOUR COMPOSITE ⁵
AMMONIA NITROGEN as N ¹² (June 1 – October 31)	313 lbs/day	627 lbs/day	***** *****	5.8 mg/l	11.6 mg/l	***** *****	3/WEEK	24-HOUR COMPOSITE ⁵
AMMONIA NITROGEN as N ¹² (November 1 – May 31)	Report lbs/day	Report lbs/day	***** *****	Report mg/l	Report mg/l	***** *****	3/WEEK	24-HOUR COMPOSITE ⁵

Sampling Location: Manhole just prior to discharge.

Footnotes:

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

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

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

4. Sampling required for influent and effluent.
5. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.
6. The monthly average limits for E.coli bacteria are expressed as geometric means. E. coli sampling shall be conducted concurrently with a total residual chlorine sample.

The E.coli limits will become effective on April 1, 2013. Monitoring requirements will be in effect upon the effective date of the permit.

7. Total residual chlorine monitoring is required whenever chlorine is added to the treatment process (i.e. TRC sampling is not required if chlorine is not added for disinfection or other purpose). The limitations are in effect seasonally (April 1-October 31).

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

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

8. The permittee shall conduct chronic (and modified acute) toxicity tests four (4) times per year. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia, only. Toxicity test samples shall be collected during the second week of the months of February, May, August and November. The test results shall be submitted by the last day of the month following the completion of the test. The results are due by March 31st, June 30th, September 30th, and December 31st, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week in	Submit Results By:	Test Species	Acute Limit LC50	Chronic Limit C-NOEC
February May August November	March 31 June 30 September 30 December 31	<u>Ceriodaphnia dubia</u> (daphnid)	≥100	≥18%

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

9. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
10. C-NOEC (chronic-no observed effect concentration) is defined as the highest concentration of toxicant or effluent to which organisms are exposed in a life cycle or partial life cycle test which causes no adverse effect on growth, survival or reproduction, based on statistically significant difference from dilution control, at a specific time of observation as determined from hypothesis testing. As described in the EPA WET Method Manual EPA 821-R-02-013, Section 10.2.6.2, all test results are to be reviewed and reported in accordance with EPA guidance on the evaluation of the concentration-

response relationship. The “18% or greater” limit is defined as a sample which is composed of 18% (or greater) effluent with the remainder being dilution water.

11. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in **Attachment A (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER** in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region I web site at:

<http://www.epa.gov/Region1/enforcementandassistance/dmr.html>.

If the guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outline in **Attachment A**.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
- b. The pH of the effluent shall not be less than 6.5 or greater than 8.3 at any time.
- c. The discharge shall not cause objectionable discoloration of the receiving waters.
- d. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.
- e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
- f. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- g. The results of sampling for any parameter done in accordance with EPA approved methods above its required frequency must also be reported.
- h. If the average annual flow in any calendar year exceeds 80 percent of the facility's design flow, the permittee shall submit a report to MassDEP by March 31 of the following calendar year describing its plans for further flow increases

and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.

- g. Only those municipalities specifically listed as co-permittees are authorized to discharge to the wastewater treatment facilities maintained by the permittee.
2. All POTWs must provide adequate notice to the Director of the following:
 - a. Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
 - b. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - c. For purposes of this paragraph, adequate notice shall include information on:
 - (1) The quantity and quality of effluent introduced into the POTW; and
 - (2) Any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
3. Prohibitions Concerning Interference and Pass Through:
 - a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.
4. Toxics Control
 - a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
 - b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.
5. Numerical Effluent Limitations for Toxicants

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

B. UNAUTHORIZED DISCHARGES

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

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

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The permittee and co-permittees are required to complete the following activities for the collection system which it owns:

1. Maintenance Staff

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

2. Preventive Maintenance Program

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

3. Infiltration/Inflow

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

4. Collection System Mapping

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

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

5. Collection System Operation and Maintenance Plan

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

- a. Within six (6) months of the effective date of the permit, the permittee shall submit to EPA and MassDEP
 - (1) A description of the collection system management goals, staffing, information management, and legal authorities;
 - (2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and
 - (3) A schedule for the development and implementation of the full Collection System O & M Plan including the elements in paragraphs b.1. through b.8. below.

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

6. Annual Reporting Requirement

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

- a. A description of the staffing levels maintained during the year;
- b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;
- c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;
- d. A map with areas identified for investigation/action in the coming year;
- e. If treatment plant flow has reached 80% of the design flow (5.2 mgd) or there have been capacity related overflows, submit a calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year; and

- f. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported pursuant to the Unauthorized Discharges section of this permit.

7. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee and co-permittees shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works¹ it owns and operates.

D. SLUDGE CONDITIONS

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

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

- Monitoring
- Reporting

Which of the 40 CFR Part 503 requirements apply to the permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility.

The EPA Region 1 Guidance document, “EPA Region 1 - NPDES Permit Sludge Compliance Guidance” (November 4, 1999), may be used by the permittee to assist it in determining the applicable requirements.²

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

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

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

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

- a. Name and address of contractor(s) responsible for sludge preparation, use or

²This 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>

- disposal
- b. Quantity of sludge (in dry metric tons) from the POTW that is transferred to the sludge contractor(s), and the method(s) by which the contractor will prepare and use or dispose of the sewage sludge.

E. INDUSTRIAL PRETREATMENT PROGRAM

1. Limitations for Industrial Users:

- 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.
- b. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial Users(s) and all other users as necessary, which together with appropriate changes in the POTW Treatment Plant's facilities or operation, are essential to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 90 days of the effective date of this permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent and effluent pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety, and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B – Reassessment of Technically Based Industrial Discharge Limits) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA's Local Limit Development Guidance (July 2004).

2. Industrial Pretreatment Program

- a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program and the General Pretreatment Regulations, 40 CFR §403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 1. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment

Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP, but in no case less than once per year, and maintain adequate records.

2. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 3. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
 4. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- b. The permit shall provide the EPA and the MA DEP with an annual report describing the permittee's pretreatment program activities for the twelve month period ending 60 days prior to the due date in accordance with 40 CFR §403.12(i). The annual report shall be consistent with the format described in Attachment C (NPDES Permit Requirement for Industrial Pretreatment Annual Report) and shall be submitted no later than March 1st of each year.
 - c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR §403.18(c).
 - d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR §405 et. seq.
 - e. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the Industrial Pretreatment Program. The permittee must provide EPA, in writing, within 180 days of the effective date of this permit, proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; (3) sludge control evaluations. The permittee will implement these proposed changes pending EPA's approval under 40 CFR §403.18.

F. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure

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

a. Submittal of Reports Using NetDMR

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

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

b. Submittal of NetDMR Opt-Out Requests

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

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

And

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

c. Submittal of Reports in Hard Copy Form

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

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

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

MassDEP – Western Region
Bureau of Resource Protection (Municipal)
436 Dwight Street, Suite 402
Springfield, MA 01103

Toxicity test reports only to:

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

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

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

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

FACT SHEET

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

NPDES PERMIT NUMBER: MA0100510

NAME AND ADDRESS OF APPLICANT:

**Hoosac Water Quality District
667 Simonds Road
Williamstown, MA 01267**

The Massachusetts municipalities of North Adams, Clarksburg and Williamstown are co-permittees for specific activities required by the permit. See Sections 9 and 13 of this fact sheet and Sections: I.B., I.C., I.E. and I.F. of the draft permit. The responsible municipal departments are:

**Town of North Adams
10 Main Street
North Adams, MA 01247**

**Town of Clarksburg
Town Hall - River Road
Clarksburg, MA 01247**

**Town of Williamstown
31 North Street
Williamstown, MA 01267**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Hoosac Water Pollution Control Facility
667 Simmonds Street
Williamstown, MA 01267**

Latitude and Longitude: 42°43' 49", -73°12' 16"

RECEIVING WATERS: Hoosic River (Segment MA 11-05) (Hudson River Watershed)

CLASSIFICATION: Class B – Warm Water

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1. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency for the re-issuance of its National Pollutant Discharge Elimination System (NPDES) permit to discharge into the designated receiving water. The current permit was issued on September 27, 2006, became effective on December 1, 2006 and expired on December 1, 2011. A timely re-application was received on April 29, 2011. This draft permit is conditioned to expire five (5) years from the effective date.

2. TYPE OF FACILITY AND DISCHARGE LOCATION

The Hoosac Water Quality District (Hoosac WQD) owns and operates the Hoosac Water Pollution Control Facility (Hoosac WPCF), a 6.5 million gallon per day (mgd) conventional activated sludge, secondary wastewater treatment plant with seasonal chlorine disinfection and dechlorination, which discharges to the Hoosic River in North Adams, MA (See Figure 1). The facility serves a population of 23,926 from three communities; Williamstown (8,250), North Adams (13,925), and Clarksburg (1,751). All three communities are co-permittees in the current permit since they own and operate collection systems that discharge wastewater to the treatment plant owned and operated by the applicant, the Hoosac WQD. The draft permit continues to name the Hoosac WQD as the permittee and the three municipalities, Williamstown, North Adams and Clarksburg, as co-permittees.

All of the collection systems are 100% separate sanitary sewers.

The facility also receives wastewater from one (1) categorical industrial user (CIU) and is required to have an industrial pretreatment program. (See Section 11 of this Fact Sheet and Section E of the draft permit for requirements).

The facility's discharge outfall is listed below:

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

3. DESCRIPTION OF DISCHARGE

Quantitative descriptions of the discharge in terms of significant effluent parameters, based on discharge monitoring reports (DMRs) submitted for November 2009 through October 2011, and the April 2011 application, are shown in Tables 6 and 7 of this fact sheet, respectively.

4. LIMITATIONS AND CONDITIONS

The effluent limitations and monitoring requirements may be found in the draft NPDES permit and Attachment A of this Fact Sheet.

5. ANTI-BACKSLIDING

EPA is required to consider technology and water quality requirements when developing permit effluent limits. Technology based treatment requirements represent the minimum level of control that must be imposed under Sections 402 and 301 (b) of the Clean Water Act. For publicly owned treatment works (POTWs), technology based requirements are effluent limitations based on secondary treatment requirements of Section 301(b)(1)(B) of the Clean Water Act (CWA) as defined in 40 CFR 133.102.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve federal or state water quality standards.

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

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

6. ANTIDegradation

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 (314 CMR 4.00) requirements for the regulation and control of toxic constituents and also require that EPA criteria, established pursuant to Section 304 (a) of the CWA, shall be used unless a site specific criteria is established. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained, or attained.

The Massachusetts Antidegradation Policy is found at Title 314 CMR 4.04. The Commonwealth has also developed implementation procedures¹. All existing uses of the Hoosic River must be protected. EPA believes that the antidegradation policy has been met because the draft permit is being reissued with discharge limits as or more stringent than the current permit with the same parameter coverage.

¹ Haas, Glenn, MassDEP, 2009, "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00".

7. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATIONS

7.1. *Process Description*

The Hoosac WPCF is a conventional activated sludge, secondary treatment facility (Figure 2). Raw wastewater enters the influent pump station, passes through a mechanical bar screen and then flows to a divided wet well. Wastewater is then pumped from the wet well to the aerated grit chamber. Grit chamber effluent flows to the primary settling tanks for a period of settling. Settled primary sludge along with activated sludge wasted from the aeration tanks is pumped from the primary settling tanks to the filter belt press and dewatered for final disposal. Primary effluent then flows to the aeration basins. Return activated sludge from the final settling tanks is mixed with the primary effluent to form a sewage sludge mixture called mixed liquor. Following a detention period in the aeration basins, the mixed liquor flows to the secondary clarifiers. The effluent then flows to the chlorine contact tanks where it is chlorinated and then dechlorinated prior to discharge to the Hoosic River.

Biosolids from the belt filter presses are dropped onto a conveyor belt that then discharges into a mixing box. The mixing box contains approximately four (4) cubic yards of wood chips. When approximately five (5) cubic yards of biosolids are discharged into the mixing box, the mixing box is towed to the composting area, where approximately four (4) more cubic yards of wood chips are added to the mixing box. The combined biosolids and woodchips mixture is mixed for 4-6 minutes and dumped on the composting pad. The mixture is then deposited in to a composting bin. Active composting then takes place for approximately 21 to 37 days, depending on the amount of biosolids. The compost is disposed of off-site through sale or give away of bagged compost. The Hoosac WQD produces a Type I compost as specified by the State of Massachusetts.

7.2. *Co-permitting*

The Hoosac WPCF treats wastewater from the municipalities of North Adams, Williamstown and Clarksburg. EPA Region 1 has included municipalities that own and operate a collection system but do not own or operate the treatment facility as limited co-permittees to assure that the collection systems owned by the municipalities are properly operated and maintained. The towns of North Adams, Williamstown, and Clarksburg were included as co-permittees in the current permit and will be maintained as co-permittees in the proposed permit.

7.3. *Previous Upgrade and Flow Increase*

The current permit includes two sets of limits; one set at a design flow of 5.37 mgd and the other set for the increased design flow of 6.5 mgd, which was the result of a plant upgrade. The upgrade was the outcome of a consent decree between the EPA and MassDEP, as plaintiffs, and the municipalities of North Adams, Williamstown and Clarksburg, as defendants to resolve past permit violations. The upgrade included the construction of an additional secondary clarifier (third) which increased the hydraulic capacity of the water pollution control facility by as much as 50% under some operating conditions. The design flow of the upgraded facility is 6.5 mgd.

These effluent limits, based on the design flow of 6.5 mgd, have been in effect since February 1, 2008, following the completion of the plant upgrade, and provide the starting

point for this draft permit.

8. Statutory and Regulatory Authority

8.1. General Requirements

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

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

8.1.1. Technology-based Requirements

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

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

8.1.2. Water Quality Standards; Designated Use; Outfall 001

The Hoosic River, in the vicinity of the discharge, is classified in the Massachusetts Surface Water Quality Standards (314 CMR 4.00) as a Class B, warm water fishery.

These waters are designated as a habitat for fish, other aquatic life, and wildlife,

including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. Where designated in 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 (314 CMR 4.02) 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.”

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those waterbodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such, require the development of total maximum daily loads (TMDL).

The treatment plant discharges to Segment MA11-05 of the Hoosic River, which begins at the confluence of the North Branch Hoosic River and the mainstem of the Hoosic River in North Adams and then flows west and north to the Vermont State Line in Williamstown. The segment is listed as impaired and requiring the development of a TMDL. The listed impairments in the Final Massachusetts Year 2010 Integrated Waters List² for this segment are: “other flow regime alterations” (*non pollutant), Fecal Coliform, PCB in fish tissue, Aquatic Macroinvertebrate Bioassessments, and “alterations in stream side or littoral vegetative covers” (*non pollutant). The proposed 2012 Integrated Waters List includes the same impairments for this segment³.

There has been no receiving water assessment conducted on the receiving water downstream of the discharge since the total phosphorus limitation in the 2006 permit was attained.

The most recent assessment report, Hudson River Watershed, 2002 Water Quality Assessment Report⁴, published in 2006, after the last permit issuance and based on data collected in 2002 summarizes the state of the waterbody at that time, including the results of water quality sampling that provide a partial basis for the Integrated Waters List. MassDEP divided this segment of the Hoosic River into three sub-segments in the Designated Use Summary⁵. The segments were: Upper - upper 0.2 miles of segment; Middle - middle 6.3 miles of segment and Lower - lower 1.7 miles of the segment, which

² Division of Watershed Management, MassDEP, 2011, Final, Massachusetts Year 2010 Integrated List of Waters, Final Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act, p. 121.

³ Division of Watershed Management, MassDEP, 2012, Proposed, Massachusetts Year 2012 Integrated List of Waters, Proposed Listing of the Condition of Massachusetts’ Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act

⁴ O’Brien-Clayton, Katie, 2006, Hudson River Watershed, 2002 Water Quality Assessment Report, MassDEP, Division of Watershed Management, Report Number 11/12/13-AC-2.

⁵ O’Brien-Clayton, 2006. p. xi

extends from the Hoosac WPCF to the Vermont border. The “Lower” sub-segment was listed as impaired for the aquatic life use due to nutrients/eutrophication biological indicators and the source was given as municipal point source discharge (the Hoosac WPCF). Other suspected sources were urban runoff/storm sewers, agriculture.

The aquatic life use impairment was based on benthic macroinvertebrate sampling downstream of the Hoosac WPCF. The assessment report found that “the benthic community in this lower portion of the river showed clear signs of pollution stress (the most degraded site in the watershed). While nonpoint pollution is likely problematic (e.g., Hemlock Brook likely contributes nutrient and/or suspended solids loadings), the Hoosac WQD treatment plant discharge is considered to be the primary source of water quality degradation”.⁶

In 2002, DWM also conducted fecal coliform and E. coli bacteria monitoring at two stations bracketing the Hoosac WPCF. Primary contact recreational use in this segment was assessed as impaired because of elevated fecal coliform bacteria counts. The suspected sources are municipal separate storm sewers, highway/road/bridge runoff and urban runoff/storm sewers⁷. The Hoosac WPCF was not identified as a cause of these impairments and effluent data submitted by the facility shows that it consistently complies with its water quality-based limits, indicating that it is not causing or contributing to the impairment.

The Massachusetts Department of Public Health (MA DPH) re-issued an advisory for fish consumption from the Hoosic River in 1994. MA DPH advised that people should refrain from eating all fish caught below the channelized section in North Adams to the state line. DWM’s sampling in 1997 supports this advisory since PCBs were detected in samples. The sources of the PCBs are Brownfield sites which are non-National Priority List (NPL) sites. The Hoosac WPCF is not listed as a cause of this impairment.

8.1.2.1. Available Dilution

Water quality based limits are established with the use of a calculated available dilution. Title CMR 314 4.03(3)(a) requires that effluent dilution be calculated based on the receiving water 7Q10. The 7Q10 is the lowest observed mean river flow for 7 consecutive days, occurring over a 10-year recurrence interval. Additionally, the facility design flow is used to calculate available effluent dilution.

The facility design flow is 6.5 million gallons per day or 10.1 cubic feet per second (cfs). The 7Q10 flow just upstream of the discharge has been developed by obtaining the 7Q10 flow measured at the nearest USGS gaging stations and calculating a flow for the point of discharge in the same proportion as the flow of the respective drainage area(s). In this instance, the Green River Gage Station (USGS Station No. 01333000) and the Williamstown Gage Station (USGS Station No. 01332500), located on the Hoosic River upstream of its confluence with the Green River are the nearest stations upstream of the

⁶ O’Brien-Clayton, 2006, p. 62.

⁷ O’Brien-Clayton, 2006; p. 64.

Hoosac WPCF. The drainage area at the Hoosac WPCF is equal to the sum of the drainage area at each station plus the approximately 11.4 square miles (mi²) drainage area between the stations and the permitted discharge. The period of record used is the climatic years, April 1, 1982 through March 31, 2011.

The calculation for the 7Q10 flow is as follows (Table 1):

Combined drainage areas @ USGS Stations = 168.6 mi²
Drainage Area @ Outfall = 180 mi²
Combined 7Q10 flow = 44.9 cfs
7Q10 @ Outfall (180/168.6) * 44.9 = 47.9 cfs

A similar calculation was done for the 30Q10 flows which are used in determining the chronic ammonia limits in accordance with ammonia criteria published in the Federal Register, Volume 64, on December 22, 1999.

Table 1: Drainage Area and streamflows for the Hoosic River

	Williamstown Gage	Green River Gage	Subtotal	Total at Hoosac WPCF
Drainage Area (mi ²)	126	42.6	168.6	180
7Q10 cfs	39.9	5.00	44.9	47.9
30Q10 cfs All months	47.9	6.90	54.8	58.5s
30Q10 cfs Winter (November 1-May 31)	96.5	24.1	120.6	128.8

$$\text{Dilution Factor} = (\text{River Flow @ Discharge} + \text{WPCF Flow}) / \text{WPCF Flow}$$

$$7\text{Q10 Dilution Factor} = (47.9 \text{ cfs} + 10.1 \text{ cfs}) / 10.1 \text{ cfs} = 5.7$$

$$30\text{Q10 Dilution Factor} = (58.5 \text{ cfs} + 10.1 \text{ cfs}) / 10.1 \text{ cfs} = 6.8$$

$$30\text{Q10 Dilution Factor (winter)} = (128.8 + 10.1 \text{ cfs}) / 10.1 \text{ cfs} = 13.8$$

These values are justly slightly higher than those used in the previous permit with the exception of the winter 30Q10, which was significantly higher.

The changes to the 7Q10 and all month 30 Q10 dilution factors did not result in any significant changes to effluent limitations. The proposed maximum daily limit for total residual chlorine in the draft permit is 0.11 mg/l, compared to 0.10 mg/l in the 2006 permit. The average monthly limit in the proposed permit for total residual chlorine is 0.06 mg/l, the same limit calculated in the fact sheet for the 2006 permit, although EPA notes that a limit of 0.07 mg/l was incorrectly listed on the effluent limitations page for the 2006 permit.

The winter 30Q10 was used to calculate reasonable potential for ammonia and it was determined that no limit was necessary, the same determination made at the lower dilution factor used in the 2006 permit (See section 8.1.3.3.9 for further detail).

8.1.3. Permit Basis and Explanation of Effluent Limitations

8.1.3.1. Flow

The proposed flow limit is based on the average daily design flow of the treatment plant, which is 6.5 mgd. Flow is to be measured continuously. The permittee shall report the annual average flow each month using the annual rolling average method (See Permit Footnote 2). The average monthly and maximum daily flow for each month shall also be reported.

A review of 24 months of DMR data shows that the reported annual average flows have been in compliance with the 6.5 mgd flow limit (range = 3.54-4.76 mgd, avg = 4.07 mgd, n=24).

8.1.3.2. Conventional Pollutants

8.1.3.2.1. Biochemical Oxygen Demand (BOD₅)

Under section 301(b)(1)(B) of the Clean Water Act (CWA), Publicly Owned Treatment Works (POTW's) must have achieved effluent limitations based on secondary treatment by June 1, 1977. The secondary treatment requirements are set forth in 40 CFR Part 133. The secondary treatment limitations for Biological Oxygen Demand (BOD₅) are a monthly average BOD₅ concentration of 30 mg/l and a weekly average concentration of 45 mg/l.

As previously discussed, the current permit includes an increase in authorized flow from 5.37 mgd to 6.5 mgd (See Section 5.3). The antibacksliding requirements found in the CWA § 402(o) and 40 CFR 122.44(1) prohibit any increase in pollutant discharge. Therefore, in order to be consistent with these antibacksliding requirements, the mass-based limits for BOD₅ in the current permit calculated at the pre-upgrade design flow of 5.37 mgd were maintained as the limit for the upgraded facility with a design flow of 6.5 mgd. The existing mass-based limit for average monthly BOD₅ is 1344 lbs/day.

The concentration limits in the current permit were then back-calculated from the mass-based limit to be consistent with the authorized mass loadings. The mass and concentration limits from the current permit have been maintained in the draft permit.

Calculation of maximum allowable concentration for average monthly BOD₅ is based on the following equation:

$$C = L / (DF * 8.34)$$

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

(Reporting periods are average monthly and weekly and daily maximum)

L = Maximum allowable load in lbs/day.

DF = Annual average design flow of facility (6.5 mgd).

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

$$25 \text{ mg/l} = 1344 \text{ (Mass Limit)} / (6.5 \text{ (Design Flow)} * 8.34 \text{ (Constant)})$$

The average weekly limit was calculated differently since a mass-based limit was not included previously. The following equation was used in calculating the limitation in the existing permit.

$$\text{Average Weekly} \quad (45 \text{ mg/l} * 5.37 \text{ mgd} * 8.34) \div (6.5 \text{ mgd} * 8.34) = 37 \text{ mg/l}$$

The existing permit also includes a maximum daily concentration limit as a state certification requirement. The limit was included to address the significant

variability of influent flows and past violations of the maximum daily limit. As was done with the monthly average and average weekly concentration limits, the maximum daily concentration limit was revised to reflect the current mass loading and the 6.5 mgd design flow.

Maximum Daily Mass Loading at 5.37 mgd:
 $5.37 \text{ mgd} * 50 \text{ mg/l} * 8.34 = 2239 \text{ lbs/day}$

Back-calculated concentration limit:
 $2239 \text{ (Mass Limit)} / (6.5 \text{ (Design Flow)} * 8.34 \text{ (Constant)}) = 41 \text{ mg/l}$

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of BOD₅ concentration limits. Based on the DMR data, the average values for BOD₅ monthly average, weekly average and maximum daily were 4.12 mg/l (range 1.90-10.10 mg/l; n=24), 5.86 mg/l (2.3-16.3 mg/l; n=24) and 8.54 (3-33 mg/l; n=24), respectively.

8.1.3.2.2. Total Suspended Solids (TSS)

Under section 301(b)(1)(B) of the Clean Water Act (CWA), Publicly Owned Treatment Works (POTW's) must have achieved effluent limitations based on secondary treatment by June 1, 1977. The secondary treatment requirements are set forth in 40 CFR Part 133. The secondary treatment limitations for Total Suspended Solids (TSS) are a monthly average TSS concentration of 30 mg/l and a weekly average concentration of 45 mg/l.

As previously discussed, the current permit includes an increase in authorized flow from 5.37 mgd to 6.5 mgd (See Section 7.3). The antibacksliding requirements found in the CWA § 402(o) and 40 CFR 122.44(1) prohibit any increase in pollutant discharge. Therefore, in order to be consistent with these antibacksliding requirements, the mass-based limits for TSS in the current permit calculated at the pre-upgrade design flow of 5.37 mgd were maintained as the limit for the upgraded facility with a design flow of 6.5 mgd. The existing mass-based limit for average monthly TSS is 1344 lbs/day.

The concentration limits in the existing permit were then back-calculated from the mass-based limit to be consistent with the authorized mass loadings. The mass and concentration limits from the current permit have been maintained in the draft permit.

Calculation of maximum allowable concentrations for average monthly TSS is based on the following equation:

$$C = L / (DF * 8.34)$$

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

Reporting periods are average monthly and weekly and daily maximum.

L = Maximum allowable load in lbs/day.

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

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

$$25 \text{ mg/l} = 1344 \text{ (Mass Limit)} / (6.5 \text{ (Design Flow)} * 8.34 \text{ (Constant)})$$

The average weekly limit was calculated differently since a mass-based limit was not included previously. The following equation was used in calculating the limitation in the existing permit.

$$\text{Average Weekly} \quad (45 \text{ mg/l} * 5.37 \text{ mgd} * 8.34) \div (6.5 \text{ mgd} * 8.34) = 37 \text{ mg/l}$$

The existing permit also includes a maximum daily concentration limit as a state certification requirement. The limit was included to address the significant variability of influent flows and past violations of the maximum daily limit. As was done with the monthly average and average weekly concentration limits, the maximum daily concentration limit was revised to reflect the current mass loading and the 6.5 mgd design flow.

Maximum Daily Mass Loading at 5.37 mgd:

$$5.37 \text{ mgd} * 50 \text{ mg/l} * 8.34 = 2239 \text{ lbs/day}$$

Back-calculated concentration limit:

$$\text{(Mass Limit)} [2239] / (6.5 \text{ (Design Flow)} * 8.34 \text{ (Constant)}) = 41 \text{ mg/l}$$

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of BOD₅ concentration limits. Based on the DMR data, the average values for BOD₅ monthly average, weekly average and maximum daily were 5.12 mg/l (range 3-9.20 mg/l; n=24), 7.06 mg/l (4.10-16.70 mg/l; n=24) and 10.16 (4.80-29.40 mg/l; n=24), respectively.

8.1.3.2.3. *Eighty-Five Percent (85%) BOD₅ and TSS Removal Requirement*

The provisions of 40 CFR §133.102(a)(3), (4) and (b)(3) requires that the 30 day average percent removal for BOD₅ and TSS be not less than 85%. This requirement was included in the previous permit and has been maintained in the proposed permit.

A review of DMR data shows that BOD₅ and TSS removal percentages average 96% and 96%, respectively. There have been no violations of the percent removal requirements over the last 24 months.

8.1.3.2.4. Dissolved Oxygen

The current permit includes a dissolved oxygen limit of a minimum of 6 mg/l. The requirement is being maintained in the current permit as a condition of state certification.

8.1.3.2.5. pH

The draft permit includes pH limitations which are required by state water quality standards, and are at least as stringent as pH limitations set forth at 40 C.F.R. §133.102(c). The pH of the effluent shall not be less than 6.5 or greater than 8.3 standard units at any time. The monitoring frequency is daily.

A review of DMR data submitted over the last 24 months shows that there have been no violations of the pH limits. Based on the DMR data, the pH values have ranged from 6.5-7.6 standard units.

8.1.3.2.6. Bacteria

Revisions to the Massachusetts Water Quality Standards were approved by EPA in 2007, changing the bacteria criteria from fecal coliform to *E. coli* for Class B waters. The current permit includes fecal coliform bacteria effluent limitations which were established using the criteria in the MA SWQS at 314 CMR 4.05(4)(b) that were in effect at the time the current permit was issued in 2006. The draft permit includes effluent limits on *E. coli*, consistent with the current water quality standards.

8.1.3.2.6.1. *E. coli*

The draft permit includes proposed seasonal (April 1st – October 31st) *E. coli* limitations which are based upon the *E. coli* criteria in the revisions to the Massachusetts Surface Water Quality Standards (314 CMR § 4.05(3)(b)). The monthly average limitation proposed in the draft permit is 126 colony forming units (cfu) per 100 ml, and shall be expressed as a monthly geometric mean. The daily maximum limitation proposed in the draft permit is 409 cfu/100 ml. The *E. coli* monitoring frequency proposed in the draft permit is three times per week. The draft permit also requires that the *E. coli* samples be collected concurrently with a total residual chlorine (TRC) sample. The limits for *e.coli* becomes effective at the beginning of the next disinfection season April 1, 2013. The Massachusetts Surface Water Quality Standards allow for schedules if limits are based on new criteria (314 CMR 4.03(1)(b)). EPA believes that this a sufficient period of time for the permittee to develop and implement the appropriate operational and testing procedures.

8.1.3.2.6.2. Fecal Coliform

The draft permit maintains the fecal coliform bacteria limits of 200 colony

forming units (cfu) per 100 ml average monthly and a maximum daily limit of 400 cfu/100 ml. This limit is in effect April through October until the e.coli limit becomes effective on April 1, 2013.

A review of DMR data shows that the monthly geometric mean fecal coliform bacteria discharge range from 1.20 to 5.9 cfu/100 ml. The maximum daily value reported over the last 24 months was 196 cfu/100 ml. There have been no violations of the fecal coliform requirements over the past 24 months.

8.1.3.3. Non-conventional pollutants

8.1.3.3.7. *Total Residual Chlorine*

Chlorine is a toxic chemical. The draft permit includes proposed total residual chlorine limitations that are calculated using national recommended water quality criteria. Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life.

The acute and chronic water quality criteria for chlorine defined in the 2002 EPA National Recommended Water Quality Criteria for freshwater are 19 ug/l and 11 ug/l, respectively. Given the revised dilution factor of 5.7, the total residual chlorine limits have been re-calculated as 0.06 mg/l and 0.11 mg/l. Total Residual Chlorine shall be measured once per day during the seasonal disinfection period, April 1 through October 31. Sampling shall be collected concurrent with the tri-weekly E. coli samples.

Total Residual Chlorine Limitations:

(acute criteria * dilution factor) = Acute (Maximum Daily)
(19 ug/l * 5.7) = 108.3 ug/l = 0.11 mg/l

(chronic criteria * dilution factor) = Chronic (Monthly Average)
(11 ug/l * 5.7) = 62.7 ug/l = 0.06 mg/l

A review of DMR data submitted over the last 24 months shows that there have been no permit violations of TRC limits. Based on the DMR data, the average values for TRC monthly average and maximum daily were 0 mg/l (range 0-0 mg/l; n=14), and 0.01 (0-0.03 mg/l; n=14), respectively.

8.1.3.3.8. *Total Phosphorus*

The Massachusetts Water Quality Standards (314 CMR 4.00) do not contain numerical criteria for total phosphorus. The narrative criteria for nutrients is found at 314 CMR 4.05(5)(c), which states that nutrients “shall not exceed the site specific limits necessary to control accelerated or cultural eutrophication”. The

standards also require that “any existing point source discharges containing nutrients in concentrations which encourage eutrophication or the growth of weeds or algae shall be provided with the highest and best practicable treatment to remove such nutrients (314 CMR 4.04). MADEP has established that a monthly average total phosphorus limit of 0.2 mg/l represents the highest and best practical treatment for POTWs.

EPA has produced several guidance documents that contain recommended total phosphorus criteria for receiving waters. The 1986 Quality Criteria of Water (“the Gold Book”) recommends in-stream phosphorus concentrations of 0.05 mg/l in any stream entering a lake or reservoir, 0.1 mg/l for any stream not discharging directly to lakes or impounds, and 0.025 mg/l within a lake or reservoir.

More recently, EPA has released “Ecoregional Nutrient Criteria”, established as part of an effort to reduce problems associated with excess nutrient in water bodies in specific areas of the country. The published criteria represent conditions in waters in each specific ecoregion which are minimally impacted by human activities and thus representative of waters without cultural eutrophication. The Hoosac WPCF is within Ecoregion VIII, Nutrient Poor Largely Glaciated Upper Midwest and Northeast. Recommend 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, published in December 2001, and includes a total phosphorus criteria of 10 ug/l (0.010 mg/l)

In developing NPDES permit limits, EPA prefers to use the Gold Book criteria because these are effects-based criteria (i.e. a concentration at which one would expect eutrophication to occur) rather than the Ecoregion criteria, which are reference-based (i.e. a concentration typically found in unimpacted waters). Use of the reference-based criteria could result in a limit more stringent than necessary to achieve water quality standards.

Elevated concentrations of chlorophyll a, excessive algal and macrophyte growth, and low levels of dissolved oxygen are all effects of nutrient enrichment. The relationship between these factors and high in-stream total phosphorus concentrations is well documented in scientific literature, including guidance developed by EPA to address nutrient over-enrichment (Nutrient Criteria Technical Guidance Manual – Rivers and Streams, EPA July 2000 [EPA-822-B-00-002]).

In the 2006 Massachusetts 303(d) list, MassDEP identified this segment of the Hoosic River as impaired for numerous pollutants including nutrients; and therefore, the permit issued in 2006 included seasonal effluent limits for total phosphorus; a growing season limit of 0.6 mg/l (April 1-October 31) and a winter limit of 1.0 mg/l (November 1-March 31).

The growing season limit was established based on EPA's Gold Book recommendation that in order to control eutrophication, 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. The calculation did not taken into consideration the ambient total phosphorus concentration. The permit limit was calculated as follows:

$$100 \text{ ug/l} * 5.7 \text{ (dilution factor)} = 570 \text{ ug/l} = 0.6 \text{ mg/l}$$

As part of the plant upgrade completed in 2008, chemical feed equipment was added which made it possible for the Hoosac WPCF to meet the 0.6 mg/l limit without the addition of filters. This upgrade was completed in February 2008 and the facility attained consistent compliance with the limit beginning April 2008.

The previous fact sheet noted concern with the bioaccumulation of phosphorus in the impoundments downstream during the winter months. This concern led to a winter limit of 1.0 mg/l. The permittee was also required to monitor dissolved orthophosphorus which helps to determine the suspended fraction of total phosphorus that is being discharged. Data shows the facility has been attaining the limit since April 2008.

Since the 2006 permit issuance, subsequent updates to the MassDEP's 303(d) list in 2008 and 2010, now known as the Integrated List of Waters, continue to classify this segment of the Hoosic River as an "impaired water requiring a TMDL", and continues to list aquatic macroinvertebrate bioassessments as a cause for impairment. As discussed earlier, the 2006 Assessment Report determined that the impaired macroinvertebrate population downstream of the discharge was due to nutrient/eutrophication caused by the Hoosac WPCF.

Since the total phosphorus effluent limits in the current permit were calculated to address the downstream eutrophication impairment and there has been no water quality data collected since the current permit limits were achieved, EPA has decided to maintain the current permit limits in the draft permit. EPA also notes that it has not recently reissued the NPDES permit for the Adams wastewater treatment plant, located upstream of the Hoosac WPCF, and that any required nutrient reduction at that facility will reduce the background concentrations upstream of the Hoosac WPCF discharge.

Accordingly, the proposed permit includes the growing season limit of 0.6 mg/l for the period April 1 through October 31 and a winter limit of 1.0 mg/l for the period November 1 through March 31. EPA has reduced the sampling frequency during the winter months to once per week for total phosphorus and 1/month for orthophosphorus. If future water quality information shows that more stringent limits are necessary to achieve water quality standards, the permit may be re-opened and a more stringent limit proposed in a permit modification.

Discharge Monitoring Reports (DMRs) submitted by the permittee report total phosphorus concentrations during the growing season (April 1- October 31) between 0.38 and 0.52 mg/l with an average concentration of 0.47 mg/l. During the winter period (November 1- March 31), the permittee has reported concentrations ranging between 0.45 and 0.87 with an average concentration of 0.63 mg/l. There have been no violations of either limit.

8.1.3.3.9. Ammonia Nitrogen

The current permit includes seasonal effluent limits for ammonia nitrogen. Ammonia can impact the dissolved oxygen concentration of the receiving waters and can be toxic at elevated levels. The current limits were established because it was determined that the discharge had the reasonable potential to cause or contribute to an exceedance of ammonia toxicity criteria in the receiving water during the summer months. "EPA and MassDEP believe that ammonia limits are needed, since effluent discharged from municipal facilities not operated to nitrify, typically contain ammonia levels between 15 and 20 mg/l or greater which represents a reasonable potential to violate water quality standards."⁸

The 1999 Update of Ambient Water Quality Criteria for Ammonia establishes instream criteria dependent upon pH and temperature of the receiving water. An average pH during the summer months of 8.25 is documented in the 1997 Hudson River Basin Assessment Report⁹ and 24°C is an estimated instream temperature. Similar levels of pH are also reported in Whole Effluent Toxicity (WET) test reports for the receiving water. Therefore, a temperature of 24°C and a pH of 8.2 were used to arrive at an instream chronic criterion of 0.973 mg/l. The criteria was multiplied by the 30Q10 dilution factor as recommended in the Federal Register, Volume 64, No. 245, on December 22, 1999 to generate the average monthly concentration limit and, in turn, the average monthly mass limit.

As described previously, the current permit includes limits for the facility based on an authorized flow of 5.37 mgd, in effect prior to completing the treatment plant upgrade in February 2008. The ammonia concentration limits were calculated using the above criteria and a dilution factor of 7.85 (based on the 5.37 mgd design flow). The mass limit was calculated using the concentration limit and the design flow of 5.37 mgd.

$$\text{Concentration} = 0.973 \text{ mg/l (instream criteria)} * 7.85 \text{ (30Q10 factor)} = 7.63 \text{ mg/l} = 7 \text{ mg/l}$$

$$\text{Mass limit} = 7 \text{ mg/l} * 5.37 \text{ mgd} * 8.34 = 313 \text{ lbs/day}$$

The ammonia limits for the authorized flow of 6.5 mgd were based on antidegradation concerns. Specifically, the mass limit established for a design

⁸ EPA, Region 1, 2000, Response to Public Comment for the Hoosac Water Pollution Control Facility, p 6.

⁹ 1997, 1997 Hudson River Basin Assessment Report

flow of 5.37 mgd was retained, and the concentration limit was back-calculated as follows:

$$313 \text{ lbs/day} / (6.5 \text{ mgd} * 8.34 \text{ conversion factor}) = 5.78 \text{ mg/l} = 5.8 \text{ mg/l}$$

The weekly average concentration of 11.6 mg/l was calculated as twice the average monthly limit in accordance with the National Recommended Water Quality Criteria. The weekly average mass limit of 627 lbs/day was calculated using the concentration limit and the design flow of 6.5 mgd. These are the same limits as in the current permit.

Similarly, ammonia criteria for the remainder of the year are calculated using the water quality criteria of 2.80 based on a temperature of 0°C and a pH of 7.9, averaged from WET test analysis for the last 4 years. The resulting ammonia criteria for November through May would be the following:

$$2.80 \text{ mg/l (instream criteria)} * 13.8 \text{ (30Q10 dilution factor)} = 38.6 \text{ mg/l}$$
$$38.6 \text{ mg/l} * 6.5 \text{ mgd} * 8.34 = 2092 \text{ lbs/day}$$

DMR data indicates that there is no reasonable potential to exceed the water quality criteria for the period from November through May. Therefore, the monthly reporting requirement for this time period remains the same as in the current permit.

Discharge Monitoring Reports (DMRs) submitted by the permittee report average monthly ammonia concentrations during the summer months (June 1- October 31) between 0.05 and 0.15 mg/l with an average concentration of 0.10 mg/l. The average weekly concentration during the summer months ranged from 0.07-0.51 mg/l and had an average of 0.19 mg/l.

During the winter period (November 1- May 31), the permittee has reported average monthly concentrations ranging between 0.06 and 0.94 with an average concentration of 0.23 mg/l. The average weekly concentrations have ranged between 0.07-1.99 mg/l with an average of 0.44 mg/l.

8.1.3.4. Metals

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

As required by the Massachusetts Water Quality Standards (314 CMR 4.05(5)(e)), the

EPA National Recommended Water Quality Criteria: 2002 were used to determine reasonable potential. The EPA-recommended approach to set and measure compliance with water quality standards is to use dissolved metals, because dissolved metals more closely approximates the bioavailable fraction of metals in the water column than does the total recoverable metal. Most toxicity to aquatic organisms is by adsorption of uptake across the gills which require the metals to be in a dissolved form. When toxicity tests were originally conducted to develop EPA's Section 304(a) metals criteria, the concentrations were expressed as total metals. Subsequent testing determined the percent of the total metals that is dissolved in the water column. The calculations that follow use the freshwater conversion factors in EPA National Recommended Water Quality Criteria: 2002 to calculate the dissolved acute and chronic water quality criteria for metals.

Regulations in 40 CFR 122.45(c) require that the permit limits be based on total recoverable metals. The chemical differences between the effluent and the receiving water may cause changes in the partitioning between dissolved and particulate forms of metals. As the effluent mixes with the receiving water, absorbed metals from the discharge may dissolve in the water column.

In this case, measuring dissolved metals would underestimate the impact on receiving water, and an additional calculation, using a site-specific translator would determine total metal criteria. Based on EPA's Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion (EPA-823-B-96-007), the conversion factor is equivalent to the translator if site-specific studies for partitioning have not been conducted. In subsequent calculations, conversion from dissolved metals to total recoverable metals have been done using the conversion factor for the particular metals found in Appendix A of the National Recommended Water Quality Criteria: 2002, in lieu of a translator.

8.1.3.4.10. Hardness-dependent Metals

Certain metals, including copper, nickel and zinc, are more toxic at lower hardness, and this is factored into calculations of the water quality criteria. EPA's Office of Water – Office of Science and Technology stated in a letter dated July 7, 2000 that: *The hardness of the water containing the discharged toxic metals should be used for determining the applicable criterion. Thus, the downstream hardness should be used.*

The theoretical hardness of the Hoosic River downstream of the treatment plant during critical low flow periods and design discharge flow was calculated based on average ambient and effluent hardness reported in the facility's Whole Effluent Toxicity (WET) tests conducted in the month of August from 1998-2001. Hardness data used to calculate the criteria are found in Table 2.

Table 2: Hoosic River Hardness data from WET Testing Reports submitted by the Hoosac WPCF.

Date	Hardness, as CaCO ₃ (mg/l)	
	Effluent	Ambient
8/5/1998	112	120
8/23/1999	84	108
8/14/2000	184	72
8/7/2001	116	148
8/12/2002	116	148
8/11/2003	128	60
8/9/2004	160	130
8/8/2005	120	120
8/7/2006	180	108
8/13/2007	116	108
8/11/2008	164	56
8/10/2009	178	76.2
8/9/2010	144	129
8/8/2011	132	112
Median	130	110

Calculation of hardness in the Hoosic River, downstream of the Hoosac WPCF:

$$Cr = \frac{QdCd + QsCs}{Qr}$$

Where:

Qs = streamflow above the point of discharge = 47.9 cfs

Cs = background in-stream concentration = 110 ug/l

Qd = effluent (design) flow = 10.1 cfs

Cd = effluent concentration = 130 ug/l

Qr = resultant in-streamflow, after discharge = 58 cfs

Cr = resultant in-stream concentration (after complete mixing occurs)

$$Cr = \frac{(10.1 \text{ cfs} * 130 \text{ ug/l}) + (47.9 \text{ cfs} * 110 \text{ ug/l})}{58 \text{ cfs}}$$

$$Cr = 113 \text{ mg/l}$$

Therefore, a hardness of 113 mg/l as CaCO₃ was used to calculate the water quality criteria for certain metals. The water quality criterion formulas are found in Appendix B of EPA's Recommended Water Quality Criteria – 2006:

1. Acute Criteria _(dissolved) = $\exp\{m_a[\ln(h)]+b_a\}(CF)^{10}$

Where:

m_a = pollutant-specific coefficient

b_a = pollutant-specific coefficient

\ln = natural logarithm

h = hardness of the receiving water, expressed in terms of mg/l $CaCO_3 = 113$ mg/l

CF = pollutant-specific conversion factor used to convert total recoverable metal to dissolved metal

2. Chronic Criteria _(dissolved) = $\exp\{m_c[\ln(h)]+b_c\}(CF)$

Where:

m_c = pollutant-specific coefficient

b_c = pollutant-specific coefficient

\ln = natural logarithm

h = hardness of the receiving water, expressed in terms of mg/l $CaCO_3 = 113$ mg/l

CF = pollutant-specific conversion factor used to convert total recoverable metal to dissolved metal

Table 3: Parameters for Calculating Freshwater Dissolved Metals Criteria that are hardness dependent.

Chemical	m_a	b_a	m_c	b_c	Freshwater Conversion Factors (CF)	
					CMC	CCC
Copper	0.9422	-1.7000	0.8545	-1.7020	0.960	0.960
Nickel	0.8460	2.2550	0.8460	0.0584	0.998	0.997
Zinc	0.8473	0.8840	0.8473	0.8840	0.978	0.986

8.1.3.4.11. Metals Criteria and Limits

In order to determine the reasonable potential to cause or contribute to exceedences of the metals criteria in the Hoosic River, data for copper, nickel, zinc and arsenic submitted in the toxicity test reports from February 2010 to November 2011 (See Table 4) were evaluated against potential water quality based effluent limits based on the respective water quality criteria for each metal. Table 5 summarizes the criteria, potential water quality based limits and discharge quality for the four trace metals that are reported in the facility’s application at measurable levels.

10 EPA Metal Translator Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criteria (EPA-823-B96-007) was used as the basis for the use of the criteria conversion factor (CF). National Guidance requires that permit limits for metals are to be expressed in terms of total recoverable metal and not dissolved metal. As such, conversion factors are used to develop total recoverable limits from a dissolved criteria. The conversion factor reflects how the discharge of a particular metal partitions between the particulate and dissolved form after mixing with the receiving water. In the absence of site-specific data describing how a particular discharge partitions in the receiving water, a default assumption equivalent to the criteria conversion factor is used in accordance with the Metal Translator Guidance.

Table 4: Ambient and effluent concentrations of select metals as reported in WET reports submitted by the Hoosac WPCF

Date	Upstream Copper (ug/l)	Effluent Copper (ug/l)	Upstream Nickel (ug/l)	Effluent Nickel (ug/l)	Upstream Zinc (ug/l)	Effluent Zinc (ug/l)
2/8/2010	2.0	8.9	0.5	0.9	4.7	15.4
5/10/2010	2.5	9.8	0.8	1.4	5.3	16.3
8/9/2010	6.1	12.0	0.8	1.0	5.1	10.1
11/8/2010	1.6	5.0	0.8	-0.5	5.4	10.4
2/7/2011	3.4	11.5	0.5	1.3	5.2	21.6
5/9/2011	3.1	7.6	0.6	0.8	3.1	7.2
8/8/2011	1.6	11.9	0.8	1.4	3.2	9.7
11/14/2011	1.3	8.1	0.6	0.7	2.3	9.7
Average	2.7		0.675		4.2875	
Median	2.25		0.7		4.9	

Table 5: Summary of Reasonable Potential Analysis for Selected Trace Metals (See Table 8 for details)

Metal	Acute Criterion, Dissolved (ug/l)	Chronic Criterion, Dissolved (ug/l)	Maximum Daily Limit, Total Recoverable (ug/l)	Average Monthly Limit, Total Recoverable (ug/l)	Application Data (Total Recoverable)		WET Report Data, Effluent
					Maximum Daily Discharge (ug/l)	Average Daily Discharge (ug/l)	Range (ug/l)
Copper	15.08	9.94	79.8	49.0	16.1	13.2	5-12
Nickel	519.24	57.67	2995.1	330.0	1.3	1.3	<0.5-1.4
Zinc	129.97	313.03	742.5	742.5	26.1	23.8	7.2-21.6
Arsenic	340	150	1959.4	864.5	0.8	0.7	***

Mass-Balance Equation with Background

$$\{(Q_s + Q_d) * C_{wQ} - (Q_s * C_s)\} / Q_d = C_d$$

Where:

Qs = 7Q10 flow of the Hoosic River at the point of discharge = 47.9 cfs

Qd = Design flow of the Hoosac WPCF = 10.1 cfs

CWQ = In-stream water quality criteria (acute) =

CWQ = In-stream water quality criteria (chronic) =

CS = In-stream pollutant concentration located upstream of the discharge =

Cd = Pollutant concentration limit for the Hoosac WPCF =

Since the facility's discharge data indicates that the facility does not have a

reasonable potential to cause or contribute to a violation of the calculated allowable acute or chronic concentration values, limitations and monitoring requirements are not proposed in the draft permit. The permittee will continue to monitor metals as part of their whole effluent toxicity (WET) testing.

8.1.3.5. Whole Effluent Toxicity (WET)

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

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

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

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

Pursuant to EPA Region 1 policy, and MassDEP's "Implementation Policy for the Control of Toxic Pollutants in Surface Waters", February 23, 1990, discharges having a dilution ratio less than 10:1 require acute toxicity testing four times per year with an LC_{50} equal to 100%. Also, in accordance with that policy, the chronic (C-NOEC) whole effluent toxicity limit is calculated using the instream waste concentration (IWC) of the WWTF effluent. The IWC is the inverse of the dilution.

$$IWC = 1 \div 5.7 * 100\% = 18\%$$

This limit will be protective of ambient criteria since higher effluent flows will only

occur when river flows are also much higher. The limit is established at critical low flow of the receiving water at which time effluent flows will be significantly lower than the permitted flow. Because WET monitoring is required during specific weeks, the potential for monitoring toxicity only during low flow periods is eliminated.

After an extended period of testing, the effluent showed no chronic effects to the test organisms and therefore EPA and MassDEP concluded that it was only necessary to test one species, *Ceriodaphnia dubia*. The draft permit retains the same testing requirements.

The tests must be performed in accordance with the test procedures and protocols specified in **Permit Attachment A**. The tests will be conducted four times per year during the second week of the months of February, May, August and November.

A review of 2 years of WET testing results shows consistent compliance with both the acute and chronic limits with the exception of a violation of the chronic limit in June 2010. The chronic result of 6.25% in June of 2010 was the result of a problem with the contract lab.

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

9. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

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

The permit standard conditions for ‘Proper Operation and Maintenance’ are found at 40 CFR §122.41(e). These conditions require proper operation and maintenance of permitted wastewater systems and related facilities to achieve permit conditions. Similarly, the co-permittees have a ‘duty to mitigate’ as stated in 40 CFR §122.41 (d). This requires the co-permittees to take all reasonable steps to minimize or prevent any discharge in violation of the permit which has a reasonable likelihood of adversely affecting human health or the environment. EPA and MassDEP maintain that an I/I removal program is an integral component of ensuring permit compliance under both of these provisions.

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

10. SLUDGE INFORMATION AND REQUIREMENTS

The draft permit requires that the permittee comply with all existing federal and state laws that apply to sewage sludge use and disposal practices and with the Clean Water Act Section 405(d) technical standards (see 40 CFR Section 503) and that it submit an annual reports describing its sludge disposal practices. Sludge from the WPCF is composted and sold or given away.

The draft permit requires the permittee to submit an annual report by February 19th, addressing the various sludge reporting requirements as specified in the guidance document for the chosen method of sludge disposal. The EPA Region 1 Guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999) is available upon request from EPA Region 1 and may also be found at:

<http://www.epa.gov/region1/npdes/permits/generic/sludgeguidance.pdf>

11. INDUSTRIAL USERS

The permittee is required to administer a pretreatment program based on regulations found at 40 C.F.R. Part 403 and Section 307 of the CWA. The permittee's pretreatment program received EPA approval on January 19, 1984 and, as a result, appropriate pretreatment program requirements were incorporated into the existing permit that were consistent with the approval and federal pretreatment regulations in effect when the permit was issued.

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

In addition to the requirements described above, the draft permit requires the permittee to submit to EPA in writing, within 180 days of the effective date of the permit, a description of proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current federal pretreatment regulations. These requirements are included in the draft permit to

ensure that the pretreatment program is consistent and up to date with all pretreatment requirements in effect. Lastly, the permittee must continue to submit, annually on **March 1st**, a pretreatment report detailing the activities of the program for the twelve month period ending 60 days prior to the due date.

12. ESSENTIAL FISH HABITAT

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

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

EPA has reviewed the available EFH information to determine if any federally managed species are designated for the Hoosic River. The only EFH species that may be of concern, Atlantic salmon (*Salmo salar*), is not native to the Hudson River System and is not expected to be present in this tributary of the Hudson River. Therefore, consultation with NMFS is not required.

13. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended (the "Act"), grants authority to and imposes requirements upon federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and the habitats of such species that have been designated as critical ("critical habitat").

Section 7(a)(2) of the Act requires every federal agency in consultation with and with the assistance of the Secretary of the Interior, to ensure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Marine Fisheries Service (NMFS) administers Section 7 consultations for marine species and anadromous fish. The federal action being considered in this case is EPA's proposed draft NPDES permit for the Hoosac WPCF. The draft permit is intended to replace the existing NPDES permit in governing the wastewater treatment facility.

EPA has reviewed the federal endangered or threatened species of fish and wildlife to determine if any listed species might potentially be impacted by the re-issuance of this NPDES permit. The review has focused primarily on the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), the shortnose sturgeon (*Acipenser brevirostrum*) and the dwarf wedge mussel (*Alasmidanta heterodon*). Based on the normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge. Furthermore, effluent limitations and other permit conditions which are in place in this Draft Permit should preclude any adverse effects in the unlikely event that there is any incidental contact with listed species in this section of the Hoosic River. Therefore, consultation under Section 7 of the ESA with NMFS and USFWS is not required. During the public comment period, EPA has provided a copy of the Draft Permit and Fact Sheet to both NMFS and USFWS.

14. UNAUTHORIZED DISCHARGES

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

15. MONITORING AND REPORTING

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

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

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

EPA currently conducts free training on the use of NetDMR and anticipates that the ability of

this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit <http://www.epa.gov/netdmr> for contact information for Massachusetts.

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

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

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

16. 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.

17. GENERAL CONDITIONS

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

18. STATE CERTIFICATION REQUIREMENTS

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

19. PUBLIC COMMENT PERIOD AND PROCEDURES FOR FINAL DECISION

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

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

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

20. EPA AND MassDEP CONTACTS

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

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

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, FAX: (508) 791-4131
Email: kathleen.keohane@state.ma.us

August 21, 2012
Date

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

Figure 1

Location of the Hoosac Water Pollution Control Facility



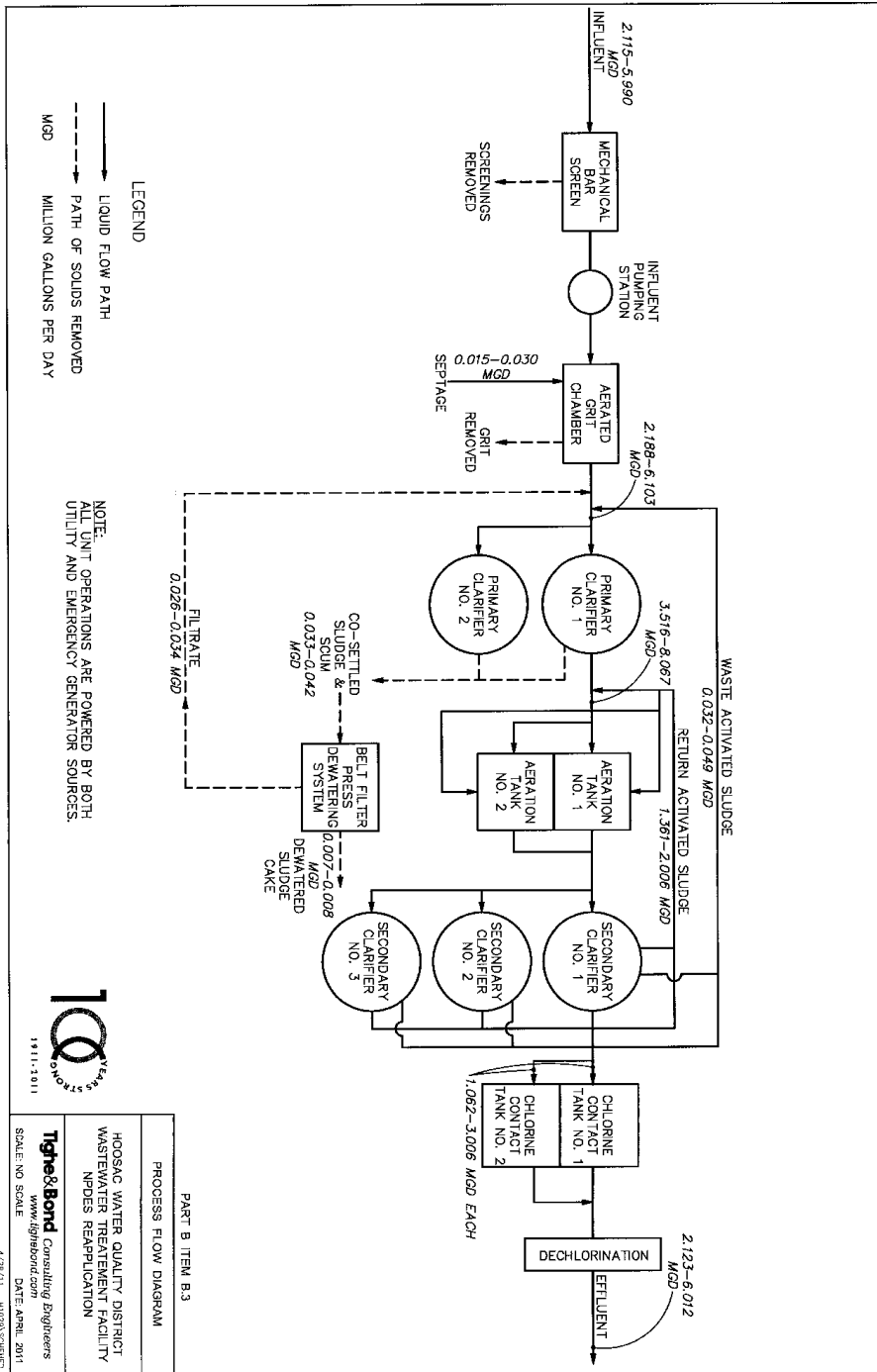


Table 6: Effluent Characteristics at Outfall 001 from Discharge Monitoring Reports

	Flow			BOD ₅			BOD % Removal	TSS				TSS % Removal	
	(MGD)			(mg/l)		lbs/day	%	(mg/l)			lbs/day	%	
	Average Monthly (Rolling Average)	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Minimum	Average Monthly	Average Weekly	Maximum Daily	Average Monthly	Minimum
Effluent Limit	6.5	REPORT	REPORT	25	37	41	1344	85%	25	37	41	1344	85%
Oct-11	4.531	4.943	7.58	2.4	2.7	3	98	97%	5	5.5	7.6	209	96%
Sep-11	4.407	6.259	14.63	3.6	9.3	22	303	94%	5.8	10.9	19	405	95%
Aug-11	4.06	3.535	17.313	2.7	2.7	7	105	97%	4.9	5	14.8	214	96%
Jul-11	3.97	3.215	4.438	2.5	3.7	5	70	98%	3.8	4.4	5	104	98%
Jun-11	3.935	3.81	5.507	2.8	3.3	4	87	98%	4.8	7	8	148	97%
May-11	3.869	4.447	5.489	4.2	4.7	6	156	96%	5.5	7.1	7.8	203	96%
Apr-11	3.771	5.326	7.122	3.8	5.3	6	170	95%	3.7	4.1	7	166	97%
Mar-11	3.723	7.846	14.395	9.3	16.3	33	726	85%	9	16.7	29.4	791	92%
Feb-11	3.568	3.778	4.902	10.1	13	16	318	92%	6.5	7.7	11.6	205	96%
Jan-11	3.54	3.372	4.066	5	6	8	143	97%	3.8	5.7	6.6	107	98%
Dec-10	3.591	4.274	6.641	4.1	6.7	8	150	96%	3.5	6.7	7.8	131.5	97%
Nov-10	3.637	3.569	4.521	2.8	3	3	82	98%	4	4.1	6.2	116.6	98%
Oct-10	3.674	3.449	6.597	2	2.3	3	53	98%	3.4	4.9	5.4	89	98%
Sep-10	3.713	2.115	2.221	2.6	3.3	4	47	99%	3.9	4.3	4.8	70.2	98%
Aug-10	3.819	2.402	2.73	1.9	2.3	3	39	98%	3	4.2	4.8	62	99%
Jul-10	4.093	2.832	3.989	2.5	4	6	60	98%	3.5	5.5	6.4	82.9	98%
Jun-10	4.267	3.019	3.518	2.6	3.3	4	68	98%	5.8	7.4	8.6	148.1	97%
May-10	4.364	3.275	4.022	2.9	3.7	4	81	98%	7.3	9.9	11.2	203.9	96%
Apr-10	4.433	4.739	9.046	3.9	5.7	6	157	95%	5.6	7.6	8.4	219	96%
Mar-10	4.46	5.99	11.13	7.4	11.7	21	427	90%	9.2	15.1	26.2	541.9	91%
Feb-10	4.463	3.44	7.11	6.4	9.3	11	164	94%	7.1	9.2	11.4	180.4	95%
Jan-10	4.534	3.99	8.46	4.6	6.7	8	149	96%	3.7	4.5	5.6	126	97%
Dec-09	4.584	4.82	6.53	4.9	7.0	7.0	200	95%	5.4	7.1	9.8	218.9	96%
Nov-09	4.757	4.02	5.43	3.8	4.7	7.0	126	96%	4.7	4.9	10.4	159.2	97%
Min	3.54	2.12	2.22	1.90	2.30	3.00	39.20	0.85	3.00	4.10	4.80	62.00	0.91
Max	4.76	7.85	17.31	10.10	16.30	33.00	725.70	0.99	9.20	16.70	29.40	791.10	0.99
Avg	4.07	4.10	6.97	4.12	5.86	8.54	165.72	0.96	5.12	7.06	10.16	204.23	0.96

Table 5 (Continued): Effluent Characteristics at Outfall 001 from Discharge Monitoring Reports

	pH		Fecal Coliform Bacteria (April 1- October 31)		Total Residual Chlorine		Total Phosphorus		Dissolved Orthophosphorus (November 1- March 31)	Dissolved Oxygen
	(S.U)		cfu/100 ml		mg/l		mg/l		mg/l	mg/l
	Minimum	Maximum	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Average Monthly (April 1- October 31)	Average Monthly (November 1- March 31)	Average Monthly (November 1- March 31)	Average Monthly
Effluent Limit	6.5	8.4	200	400	0.06	0.11	0.6	1	REPORT	> 6.0 mg/l
Oct-11	6.9	7.2	3.9	18		0.05	0.41	***	***	
Sep-11	6.8	7.3	5.9	55		0.32	0.38	***	***	
Aug-11	6.7	7.3	4.1	75		0.05	0.51	***	***	6.8
Jul-11	6.7	7.2	2.7	17	0	0.03	0.5	***	***	7.1
Jun-11	6.7	7.2	2	9	0	0.03	0.48	***	***	7.3
May-11	6.7	7.1	1.9	7	0	0	0.5	***	***	7.9
Apr-11	6.6	7	1.2	6	0	0	0.5	***	***	8.9
Mar-11	6.8	7.2	***	***	***	***	***	0.45	1.07	8.5
Feb-11	6.8	7.2	***	***	***	***	***	0.87	2.29	8.3
Jan-11	6.7	7.1	***	***	***	***	***	0.81	2.226	8.8
Dec-10	6.9	7.3	***	***	***	***	***	0.53	1.4	8.8
Nov-10	6.8	6.2	***	***	***	***	***	0.58	1.57	9
Oct-10	6.5	7.2	3	22	0	0	0.5	***	***	8
Sep-10	6.6	7	3.8	196	0	0	0.49	***	***	7.4
Aug-10	6.8	7.1	1.5	6	0	0	0.46	***	***	7.2
Jul-10	6.8	7.2	2.8	37	0	0	0.42	***	***	7.1
Jun-10	6.8	7.1	1.4	7	0	0	0.47	***	***	7.9
May-10	6.8	7.1	2	13	0	0	0.44	***	***	7.7
Apr-10	6.9	7.2	3.4	131	0	0	0.52	***	***	8.8
Mar-10	7	7.3	***	***	***	***	***	0.47	1.06	8.6
Feb-10	6.9	7.3	***	***	***	***	***	0.76	1.81	9
Jan-10	7.1	7.6	***	***	***	***	***	0.6	1.63	9.2
Dec-09	7.1	7.5	***	***	***	***	***	0.49	1.26	8.9
Nov-09	6.9	7.5	***	***	***	***	***	0.78	2.06	8.9
Min	6.50	6.20	1.20	6.00	0.00	0.00	0.38	0.45	1.06	
Max	7.10	7.60	5.90	196.00	0.00	0.32	0.52	0.87	2.29	
Avg	6.80	7.18	2.83	42.79	0.00	0.03	0.47	0.63	1.64	

Table 5 (Continued): Effluent Characteristics at Outfall 001 from Discharge Monitoring Reports

	Ammonia Nitrogen as N								LC50	NOEC
	mg/l				lbs/day				%	%
	Average Monthly (June 1 - October 31)	Average Weekly (June 1 - October 31)	Average Monthly (November 1 - May 31)	Average Weekly (November 1 - May 31)	Average Monthly (June 1 - October 31)	Average Weekly (June 1 - October 31)	Average Monthly (November 1 - May 31)	Average Weekly (November 1 - May 31)	Maximum Daily	Maximum Daily
Effluent Limit	5.8	11.6	REPORT	REPORT	313	627	REPORT	REPORT	100	18
Oct-11	0.0938	0.12	***	***	3.7991	4.4388	***	***	***	***
Sep-11	0.1546	0.5133	***	***	14.6092	56.7817	***	***	***	***
Aug-11	0.1221	0.1833	***	***	5.3593	4.1169	***	***	100	100
Jul-11	0.0569	0.1333	***	***	1.4217	2.9709	***	***	***	***
Jun-11	0.1123	0.2233	***	***	3.2026	5.84	***	***	***	***
May-11	***	***	0.0662	0.1067	***	***	2.4012	3.7745	100	50
Apr-11	***	***	0.5517	1.1867	***	***	25.8987	58.0275	***	***
Mar-11	***	***	0.9436	1.9933	***	***	72.23	195.3018	***	***
Feb-11	***	***	0.5492	0.9333	***	***	17.4563	31.0717	100	50
Jan-11	***	***	0.1769	0.4133	***	***	5.1339	12.5283	***	***
Dec-10	***	***	0.0936	0.1433	***	***	3.4075	5.8663	***	***
Nov-10	***	***	0.0569	0.0867	***	***	1.7205	2.6967	100	100
Oct-10	0.0533	0.0833	***	***	1.3876	2.0808	***	***	***	***
Sep-10	0.0643	0.0733	***	***	1.1443	1.2708	***	***	***	***
Aug-10	0.1492	0.17	***	***	3.0248	3.5219	***	***	100	100
Jul-10	0.0985	0.1633	***	***	2.3063	4.0244	***	***	***	***
Jun-10	0.0864	0.2067	***	***	2.3344	5.9357	***	***	***	***
May-10	***	***	0.0617	0.1	***	***	1.7006	2.7182	100	50
Apr-10	***	***	0.1531	0.3767	***	***	7.025	17.3371	***	***
Mar-10	***	***	0.2	0.3833	***	***	13.2114	33.9993	***	***
Feb-10	***	***	0.105	0.1747	***	***	2.6975	4.3826	100	100
Jan-10	***	***	0.0658	0.0767	***	***	2.1441	2.3928	***	***
Dec-09	***	***	0.0593	0.0667	***	***	2.3858	2.8246	***	***
Nov-09	***	***	0.0754	0.1167	***	***	2.518	4.3729	100	100
Min	0.05	0.07	0.06	0.07	1.14	1.27	1.70	2.39	100.00	50.00
Max	0.15	0.51	0.94	1.99	14.61	56.78	72.23	195.30	100.00	100.00
Avg	0.10	0.19	0.23	0.44	3.86	9.10	11.42	26.95	100.00	81.25


Table 7: Summary of Effluent Characteristics from 2011 NPDES Application

Parameter	Maximum Daily Value	Average Daily Value	Units	Number of Samples
pH (minimum)	6.5	***	Standard Units	***
pH (maximum)	7.6	***	Standard Units	***
Flow Rate	21.47	4.47	MGD	1,461
Temperature (Winter)	58°	51°	Fahrenheit	361
Temperature (Summer)	69°	61°	Fahrenheit	368
BOD	21	4.4	mg/l	624
Fecal Coliform Bacteria	196	2.3	cfu/100 mg	214
Total Suspended Solids	26.2	4.5	mg/l	624
Ammonia	9.95	0.78	mg/l	472
Total Residual Chlorine	0.08	0	mg/l	1,603
Dissolved Oxygen	11.90	7.70	mg/l	1,461
Total Kjeldahl Nitrogen	1.90	1.80	mg/l	2
Nitrate Nitrogen	8.80	7.40	mg/l	2
Oil and Grease	0	0	mg/l	2
Phosphorus (Total)	1.18	0.48	mg/l	556
Total Dissolved Solids	520	510	mg/l	2

Table 8: Freshwater Metals Criteria and Limits

Freshwater Metals Criteria and Limits

Step 1: Input the following values (highlighted in green)

	7Q10	30.96	MGD
	Design flow	6.5	MGD
	Hardness =	113	mg/L

Step 2: The spreadsheet calculates the Total Recoverable Limits

Step 3: Input background metals values (if available)

Step 4: Identify the limit (highlighted in blue)

Metal	m _A	b _A	m _C	b _C	CF acute	CF chronic	Background (ug/l)	Dissolved Criteria		Total Recoverable Criteria		Total Recoverable Limit	
								Acute Criteria (CMC) (ug/L)	Chronic Criteria (CCC) (ug/L)	Acute Criteria (CMC) (ug/L)	Chronic Criteria (CCC) (ug/L)	Maximum Daily Limit (ug/L)	Monthly Ave Limit (ug/L)
Hardness Dependent Metals													
Cadmium	1.0166	-3.9240	0.7409	-4.7190	0.939	0.904	0.000	2.27	0.27	2.42	0.30	13.9	1.7
Chromium III	0.8190	3.7256	0.8190	0.6848	0.316	0.860	0.000	629.75	81.92	1992.87	95.25	11485.1	548.9
Copper	0.9422	-1.7000	0.8545	-1.7020	0.960	0.960	2.25	15.08	9.94	15.71	10.36	79.8	49.0
Lead	1.2730	-1.4600	1.2730	-4.7050	0.773	0.773	0.000	73.75	2.87	95.39	3.72	549.7	21.4
Nickel	0.8460	2.2550	0.8460	0.0584	0.998	0.997	0.7	519.24	57.67	520.28	57.85	2995.1	330.0
Silver	1.7200	-6.5900	---	---	0.850	---	0.000	3.97	---	4.67	---	26.9	
Zinc	0.8473	0.8840	0.8473	0.8840	0.978	0.986	4.900	129.97	131.03	132.89	132.89	742.5	742.5
Non-Hardness Dependent Metals													
Arsenic					1.000	1.000	0.000	340.00	150.00	340.00	150.00	1959.4	864.5
Chromium VI					0.982	0.962	0.000	16.00	11.00	16.29	11.43	93.9	65.9
Mercury					0.850	0.850	0.000	1.40	0.77	1.65	0.91	9.5	5.2
Aluminum					---	---	0.000	---	---	750.00	87.00	4322.3	501.4

Source: National Recommended Water Quality Criteria 2002

<http://www.epa.gov/waterscience/criteria/wqctable/>

Summary of Required Report Submittals*

Required Report	Date Due	Submitted by:	Submitted to:
Chlorination System Report (Part I.A.1. Footnote 7)	With monthly DMRs, if interruption or malfunction of the chlorine dosing system occurs (See Footnote 7).	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Whole Effluent Toxicity Test Report (Part I.A.1. Footnote 8)	By March 31, June 30, September 30 and December 31 of each year	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
			MassDEP Surface Water Discharge Permit Program 627 Main Street, 2 nd Floor Worcester, MA 01608
Flow Report Describing plans for further flow increases and maintaining compliant (Part I.A.1.h)	By March 31 of any calendar year in which the average annual flow exceeds 80% of design flow.	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103

Required Report	Date Due	Submitted by:	Submitted to:
Notification of SSO discharge (Part I.B.)	Within 24 hours	Hoosac Water Quality District Town of Williamstown Town of North Adams Town of Clarksburg	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912 MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Collection System Mapping (Part I.C.4)	Within 30 months of the effective date	Hoosac Water Quality District Town of Williamstown Town of North Adams Town of Clarksburg	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912 MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Initial Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 6 months of the effective date	Hoosac Water Quality District Town of Williamstown Town of North Adams Town of Clarksburg	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912 MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Full Collection System Operation and Maintenance Plan (Part I. C.5.a)	Within 24 months of the effective date	Hoosac Water Quality District Town of Williamstown Town of North Adams Town of Clarksburg	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912 MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103

Required Report	Date Due	Submitted by:	Submitted to:
Annual Summary Report of Activities related to implementation of Collection System O & M Plan	Annually by March 31	Hoosac Water Quality District Town of Williamstown Town of North Adams Town of Clarksburg	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Annual Sludge Report (Part I.D.8)	Annually by February 19	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Industrial Pretreatment Technical Evaluation (Part I.E.1.b)	Within 90 days of the effective date	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103
Industrial Pretreatment Program Annual Report (Part I.E.2.b)	Annually by March 1 st	Hoosac Water Quality District	U.S. Environmental Protection Agency Water Technical Unit (OES04-SMR) 5 Post Office Square – Suite 100 Boston, MA 02109-3912
			MassDEP Bureau of Resource Protection (Municipal) 436 Dwight Street, Suite 402 Springfield, MA 01103

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

**EPA AND MASSDEP JOINT RESPONSE TO PUBLIC COMMENTS
HOOSAC WATER POLLUTION CONTROL FACILITY
NPDES PERMIT NO. MA0100510**

From August 28, 2012 to September 26, 2012, Region 1 of the United States Environmental Protection Agency (“EPA”) and the Massachusetts Department of Environmental Protection (“MassDEP”) (together, the “Agencies”) solicited public comments on a draft National Pollutant Discharge Elimination System (“NPDES”) permit, developed pursuant to an application from the Hoosac Water District (“Permittee”) for the reissuance of its permit to discharge treated wastewater from the Hoosac Water Pollution Control Facility (WPCF) to the designated receiving water, the Hoosic River.

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

A)	Brad Furlon, Chief Operator/District Manager, Hoosac Water Quality District	p. 2
B)	Steve McMahan, Executive Director, Hoosic River Watershed Association	p. 2
C)	Massachusetts Department of Environmental Protection Section 401 Certification Statement	p. 4

After considering the comments received on the draft permit, EPA has made a final decision to issue the permit authorizing the discharge. In accordance with the provisions of 40 CFR § 124.17, this document briefly describes and responds to the comments received on the draft permit, and explains any provisions of the final permit that have been changed from the draft as well as the reasoning supporting those changes. Any clarifications that EPA considers necessary are also included in this document. A copy of the final permit may be obtained by writing or calling Michele Cobban Barden, United States Environmental Protection Agency, 5 Post Office Square, Suite 100, Mail Code:OEP06-1, Boston, Massachusetts, 02109-3912; Telephone (617) 918-1539. Copies of the final permit and the response to comments may also be obtained from the EPA Region 1 website at <http://www.epa.gov/region1/npdes/index.html>.

A) Comments from Brad Furlon, Chief Operator/District Manager, Hoosac Water Quality District, dated September 27, 2012.

Comment A.1.: *On page 4 of 17 footnote # 3 states, Effluent sampling shall be of the discharge and shall be collected at the point specified on page 3. Page 3 states Sampling Location: Prior to chlorination with the exception of total residual chlorine and E. Coli.*

Back around August 2007 or early 2008 The Hoosac Water Quality District sent a request to EPA and MA DEP asking for the change in sampling location to the manhole on the discharge, which is the furthest most part of the District's treatment for all of our permit effluent sampling. This request was approved by both EPA and DEP. I will forward a copy of this request shortly.

Response: EPA has changed the effluent sampling location in the final permit to the manhole just prior to discharge as discussed in the letter from Mark Schleeweiss, Program Chief-Wastewater Program, Bureau of Resource Protection, MassDEP; dated July 2, 2007.

B) Comments received from Steve McMahon, Executive Director, Hoosic River Watershed Association, dated September 28, 2012.

Comment B.1.: *Specifically, we wish to bring to the EPA's attention the relatively high maximum daily flow which to us suggests a significant amount of storm water entering the collection system. The average flow compared to the number of customers served (291 gallons/person/day) is also high although there may be industrial, institutional or commercial uses that we are not considering.*

Response: EPA is uncertain of the basis for the 291 gallons/person/day value. The facility's design flow is 6.5 MGD. If that value is divided by the reported user population of 23,926, the result is 271 gallons per capita day not 291. However, that calculation does not represent the actual flow from the facility. A more representative value could be calculated using the average monthly flow reported by the permittee in discharge monitoring reports (DMRs) for the last twenty-four months (4.07 MGD). That value divided by the user population results in a per capita day usage of 170 gallons. EPA acknowledges that this value is still high, compared to federal regulations at 40 CFR 35.2005 (b) (28) that define nonexcessive infiltration as total flow (domestic base flow and infiltration) less than 120 gallons per capita per day.

EPA and MassDEP have included specific Operation and Maintenance requirements in NPDES permits issued in Massachusetts that specifically address the issue of infiltration and inflow. The draft permit and the final permit for the Hoosac WPCF include requirements for the permittee and co-permittees to 1) provide adequate staffing to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of the permit, 2) maintain an ongoing preventative maintenance program, 3) control inflow and infiltration, 4) prepare maps of the sewer system, 5) develop and implement an operation and maintenance plan, and 6) submit an annual summary report to MassDEP and EPA regarding the implementation of the Collection System O&M plan. The preparation of maps of the sewer system is a new requirement.

Comment B.2.:

Finally, the reach of the river below the control facility has been determined by MA-DEP to be the most impacted in the entire watershed. This is due to high nutrient load. We encourage EPA to consider the phosphorus levels as part of the operation of this facility as compared phosphorus levels prior to the facility's last permit renewal. We recognize that MA-DEP has not conducted an assessment since 2002 and request that the applicant or a third party be engaged to conduct a water quality assessment.

Response:

As discussed in the Fact Sheet that accompanied the Draft Permit, the permittee completed an upgrade of the facility in 2008 that included the installation of a chemical feed that allows the facility to achieve a total phosphorus level of 0.6 mg/l during the growing season. The permittee began meeting the effluent total phosphorus limit of 0.6 mg/l as of April 2008.

MassDEP collected samples in Hoosic River Watershed in 2008, shortly after the treatment plant began meeting the 0.6 mg/l total phosphorus limit. The 2008 data will be the basis for next water quality assessment report. According to MassDEP, the data has just recently been validated. Given the short period of time that the treatment plant had been meeting the limit when the sampling was conducted, EPA does not expect that this receiving water quality monitoring data will reflect all of the water quality improvements that will be realized by the treatment plant phosphorus reduction.

Additional data was also collected this past summer. EPA anticipates that an assessment report using this data will be prepared during the permit term. This data will better represent the water quality conditions following the treatment plant phosphorus reductions.

C. Section 401 Certification

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

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

Section 401(a)(1) of the CWA requires all NPDES permit applicants to obtain a certification from the appropriate state agency validating the permit's compliance with the pertinent federal and state water pollution control standards. *See* CWA § 401(a)(1). The regulatory provisions pertaining to state certification provide that EPA may not issue a permit until a certification is granted or waived by the state in which the discharge originates. 40 C.F.R. § 124.53(a). The regulations further provide that "when certification is required...no final permit shall be issued...unless the final permit incorporates the requirements specified in the certification under §124.53(e)." 40 C.F.R. § 124.55(a). Section 124.53(e) provides that the State certification shall include "any conditions more stringent than those in the draft permit which the State finds necessary to "assure compliance with, among other things, state water quality standards, 40 C.F.R. § 124.53(e)(2), and shall include "[a] statement of the extent to which each condition of the draft permit can be made less stringent without violating the requirements of State law, including water quality standards," *id.* § 124.53(e)(3). Under 40 C.F.R. § 124.55(c), "a State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition."

EPA's "duty under CWA section 401 to defer to considerations of State law is intended to prevent EPA from *relaxing* any requirements, limitations, or conditions imposed by the State law." *In re City of Jacksonville*, 4 E.A.D. 150, 157 (EAB 1992); *In re City of Moscow*, 10 E.A.D. 135, 151 (EAB 2001); *accord In re Ina Rd. Water Pollution Control Facility*, 2 E.A.D. 99, 100 (CJO 100). EPA believes that the 30 month schedule for completing the required mapping

included in the draft permit is reasonable and notes that there were no comments regarding this schedule submitted during the public comment period. The 30 month schedule has been included in the final permit.

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