

Attachment B
NPDES Permit No. MA0102369
Upper Blackstone Water Pollution Abatement District

Q_e = UBWPAD WWTP Design Flow: 56.0 MGD = 86.7 cfs

Receiving Water - Blackstone River

Q_s = 7 day 10 year low flow (7Q₁₀): 4.4 MGD = 6.8 cfs

Dilution

$$(Q_s + Q_e)/Q_e = (6.8 + 86.7)/86.7 = 1.1$$

Chlorine Residual:

EPA Recommended In-stream Chronic Criterion:	11 ug/l
Acute Criterion:	19 ug/l

Average monthly (chronic) limit:

$$(11 \text{ ug/l}) \times 1.1 = 12.0 \text{ ug/l}$$

Maximum daily (acute) limit:

$$(19 \text{ ug/l}) \times 1.1 = 21.0 \text{ ug/l}$$

Toxicity

The chronic (C-NOEC) whole effluent toxicity limit was calculated using the in-stream waste concentration ("IWC") of the WWTP effluent:

$$\text{IWC} = (1/\text{dilution}) \times 100\%$$

$$= (1/(1.1)) \times 100\%$$

$$= 90\%$$

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),

Upper Blackstone Water Pollution Abatement District (UBWPAD)

is authorized to discharge from the facility located at:

**Upper Blackstone Water Pollution Abatement District
50 Route 20
Millbury, MA 01527**

to receiving water named: **Blackstone River**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The City of Worcester, the Towns of Millbury, Auburn, Holden, West Boylston and Rutland, and the Cherry Valley Sewer District are co-permittees for Part D and Part E. Only municipalities specifically listed as co-permittees are authorized to discharge wastewater into the UBWPAD facility.

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

This permit consists of 19 pages in Part I including effluent limitations and monitoring requirements, Part II including General Conditions and Definitions, and Attachments A through C. 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 30, 1999 and modified on December 19, 2001.

Signed this day of

Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

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

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

PART I

A.1. During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge treated sanitary and industrial wastewater from outfall serial numbers 001 and 001A (high flow outfall) to the Blackstone River. Such discharges shall be limited and monitored as specified below.

<u>EFFLUENT CHARACTERISTIC</u>						<u>EFFLUENT LIMITS</u>				<u>MONITORING REQUIREMENTS</u>	
<u>PARAMETER</u>	<u>AVERAGE MONTHLY</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 ¹	*****	*****	56 MGD	*****	*****	CONTINUOUS	RECORDER				
FLOW ¹	*****	*****	Report MGD	*****	Report MGD	CONTINUOUS	RECORDER				
CBOD ₅ ² (June 1 - October 31)	4670 lbs/Day	Report lbs/Day	10 mg/l	15 mg/l	17 mg/l	Daily	24-HOUR COMPOSITE ³				
CBOD ₅ ² (November 1 - April 30)	11,676 lbs/Day	Report lbs/Day	25 mg/l	40 mg/l	45 mg/l	Daily	24-HOUR COMPOSITE ³				
CBOD ₅ ² (May)	9,341 lbs/Day	Report lbs/Day	20mg/l	30 mg/l	33 mg/l	Daily	24-HOUR COMPOSITE ³				
TSS ² (June 1 - October 31)	7,006 lbs/Day	Report lbs/Day	15 mg/l	15 mg/l	22 mg/l	Daily	24-HOUR COMPOSITE ³				
TSS ² (November 1 - April 30)	14,011 lbs/Day	Report lbs/Day	30 mg/l	45 mg/l	50 mg/l	Daily	24-HOUR COMPOSITE ³				
TSS ² (May)	9,341 lbs/Day	Report lbs/Day	20 mg/l	30 mg/l	33 mg/l	Daily	24-HOUR COMPOSITE ³				
pH RANGE ⁴	6.5 - 8.3 SU (SEE PERMIT PAGE 8 OF 15, PARAGRAPH I.A.1.b.)						Daily	GRAB ⁵			

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EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS					MONITORING REQUIREMENTS			
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE		
FECAL COLIFORM, ^{4,6} cfu/100ml	*****	*****	200	*****	400	Daily	GRAB ⁵		
TOTAL RESIDUAL CHLORINE ⁷	*****	*****	12 ug/l	*****	21 ug/l	Daily	GRAB ⁵		
TOTAL RESIDUAL CHLORINE ⁸	*****	*****	Report mg/l	*****	Report mg/l	CONTINUOUS	RECORDER		
DISSOLVED OXYGEN ⁴	NOT LESS THAN 6.0 mg/l					Daily	GRAB ⁵		
AMMONIA-NITROGEN (June 1 – October 31)	934 lbs/Day	Report lbs/Day	2.0 mg/l	4.0 mg/l	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³		
AMMONIA-NITROGEN (November)	4,670 lbs/Day	Report lbs/Day	10.0 mg/l	20.0 mg/l	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³		
AMMONIA-NITROGEN (December 1 – April 30)	5,600 lbs/Day	Report lbs/Day	12.0 mg/l	24.0 mg/l	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³		
AMMONIA-NITROGEN (May)	2,330 lbs/Day	Report lbs/Day	5.0 mg/l	10.0 mg/l	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³		
TOTAL NITROGEN ⁹ (May 1 – October 31)	Report lbs/Day	Report lbs/Day	5.0 mg/l	*****	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³		
TOTAL NITROGEN (November 1 – April 30)	Report lbs/Day	Report lbs/Day	Report mg/l	Report mg/l	Report mg/l	2/WEEK	24-HOUR COMPOSITE ³		

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EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS						MONITORING REQUIREMENTS			
	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE TYPE			
TOTAL PHOSPHORUS ¹⁰ (April 1 – October 31)	Report lbs/Day	Report lbs/Day	0.1 mg/l	Report mg/l	Report mg/l	3/WEEK	24-HOUR COMPOSITE ³			
TOTAL PHOSPHORUS ¹¹ (November 1 – March 31)	Report lbs/Day	Report lbs/Day	1.0 mg/l	Report mg/l	Report mg/l	2/WEEK	24-HOUR COMPOSITE ³			
DISSOLVED ORTHO PHOSPHORUS (November 1 – March 31)	Report lbs/Day	Report lbs/Day	Report mg/l	Report mg/l	Report mg/l	2/WEEK	24-HOUR COMPOSITE ³			
TOTAL COPPER ¹²	*****	*****	7.2 ug/l	*****	10.2 ug/l	1/WEEK	24-HOUR COMPOSITE ³			
TOTAL ZINC	*****	*****	91.3 ug/l	*****	91.3 ug/l	1/WEEK	24-HOUR COMPOSITE ³			
TOTAL CADMIUM ¹²	*****	*****	0.2 ug/l	*****	1.5 ug/l	1/WEEK	24-HOUR COMPOSITE ³			
WHOLE EFFLUENT TOXICITY ^{13,14,15}	Acute LC ₅₀ ≥ 100% Chronic C-NOEC ≥ 90%						6/Year	24-HOUR COMPOSITE ³		

All sampling shall be representative of the effluent that is discharged through outfalls 001 and 001A to the Blackstone River. A routine sampling program shall be developed in which samples from outfall 001 are taken at the same location, same time and same days of every month. Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented in correspondence appended to the applicable discharge monitoring report. In addition, all samples shall be analyzed using the analytical methods approved by EPA in accordance with 40 CFR §136.

Footnotes:

1. This is an annual average combined flow limit for outfalls 001 and 001A, which shall be reported as a rolling average. The first value will be calculated using the monthly average combined flow from outfalls 001 and 001A for the first full month ending after the effective date of the permit and the eleven previous monthly average combined flows from outfalls 001 and 001A. Each subsequent month's Discharge Monitoring Reports (DMR) will report the annual average flow that is calculated from that month and the previous 11 months. The monthly average and maximum daily combined flows for each month shall also be reported. For each month that outfall 001A is activated, the flow volume and duration for each day that the outfall is activated shall be reported on a separate sheet of paper and submitted with the monthly DMR.
2. Sampling required for influent and effluent.
3. For each day that there is no discharge from outfall 001A, 24-hour composite samples will consist of at least twenty four (24) grab samples taken from outfall 001 during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.

For each day that there is a discharge from outfall 001A, 24-hour composite samples will consist of hourly grab samples taken from outfall 001A for the duration of the discharge, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow, and combined proportional to flow with the 24-hour composite sample from outfall 001. The first grab sample shall be taken within the first hour of the discharge from outfall 001A.

4. Required for state certification.
5. If outfall 001A is not active, a grab sample will consist of a single grab sample taken from outfall 001 in accordance with the routine sampling program.

For each day that there is a discharge from outfall 001A, a grab sample will be taken from outfall 001A within the first hour of the discharge, and every three hours thereafter for the duration of the discharge, and combined proportional to flow with a grab sample taken concurrently from outfall 001.

For every day that more than one grab sample is analyzed, the monthly DMR shall include an attachment documenting the individual grab sample results for that day, the date and time of each sample, the analytical method, and a summary of any operational modifications implemented in response to the sample results. This requirement applies to all samples taken, including screening level and process control samples. All test results utilizing an EPA approved analytical method shall be used in the calculation and reporting of the monthly average and maximum daily discharge values submitted on the DMR.

6. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum.
7. The minimum level (ML) for total residual chlorine is defined as 20 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastewater, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. For effluent limitations less than 20 ug/l, compliance/non-compliance will be determined based on the ML. Sample results of 20 ug/l or less shall be reported as zero on the DMR.
8. The permittee shall report the monthly average and daily maximum discharge of TRC from outfall 001 using data collected by the continuous TRC analyzer. The permittee shall collect, and analyze, a minimum of one grab sample per day from outfall 001 for calibration purposes. Four continuous recording charts, (1/week) showing weekly data shall be submitted with the monthly DMRs. The result of the grab sample(s) and a comparison to the continuous analyzer reading, including the time of the grab samples, shall be included with the DMRs.
9. This permit limit is a requirement of the U. S. Environmental Protection Agency (EPA) permit and is not a requirement of the Massachusetts Department of Environmental Protection (MassDEP) permit. Total Nitrogen is the sum of TKN, NO₂, and NO₃. The permittee shall operate the treatment facility to reduce the discharge of total nitrogen during the months of November - April to the maximum extent possible, using all available treatment equipment in place at the facility. The addition of a carbon source that may be necessary in order to meet the total nitrogen limit during the months of May - October is not required during the months of November - April.
10. The 0.1 mg/l total phosphorus limit for April - October is a 60-day rolling average limit. The 60-day average value for each day, beginning on the 60th day after April 1st (May 30), must be calculated and the highest 60 day average value in the month must be reported on the monthly discharge monitoring report (DMR). For the month of April, the monthly average value shall be reported on an attachment to the DMRs.
11. The Permittee shall comply with the 1.0 mg/l monthly average total phosphorus limit within one year of the issuance date of the permit. The maximum daily concentration value reported for dissolved ortho phosphorus shall be the value from the same day that the maximum daily total phosphorus concentration was measured.
12. Total recoverable copper and cadmium shall be measured using the Furnace Atomic Absorption method. The MLs for copper and cadmium, respectively, are 3 ug/l and 0.5 ug/l. Any effluent value for these two parameters which is below its respective ML shall be reported as zero.

13. The permittee shall conduct chronic (and modified acute) toxicity tests four times per year, in accordance with the schedule in the table below, using the daphnid, Ceriodaphnia dubia, only. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. Toxicity test samples shall be collected during the second week of the months of January, April, July and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due February 28, May 31, August 31 and November 30, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit.

Test Dates Second Week of	Submit Results By:	Test Species	Acute Limit LC ₅₀	C-NOEC limit
January April July October	February 28 May 31 August 31 November 30	<u>Ceriodaphnia dubia</u> (Daphnid)	≥ 100%	≥ 90%

In addition, the permittee shall conduct chronic (and modified acute) toxicity tests two times per year during a period when outfall 001A is discharging using the Daphnid, Ceriodaphnia dubia and the Fathead Minnow, Pimephales promelas. The tests shall be conducted with 24-hour composite samples consisting of hourly grab samples taken from outfall 001A for the duration of the discharge, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow, and combined proportional to flow with the 24-hour composite sample from outfall 001.

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 is sent to all permittees with their annual set of DMRs and may also be found on the EPA, Region I web site at <http://www.epa.gov/region1/enforcementandassistance/dmr2005.pdf>. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in **Attachment A**. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in **Attachment A**.

14. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
15. 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 at a specific time of observation as determined from hypothesis testing where the test results exhibit a linear dose-response relationship. However, where the test results do not exhibit a linear dose-response relationship, the permittee must report the lowest concentration where there is no observable effect. The "100% or greater" limit is defined as a sample which is composed of 100% (or greater) effluent, the remainder being dilution water.

Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards of the receiving waters.
 - b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and carbonaceous biochemical oxygen demand. The percent removal shall be based on monthly average values.
 - f. The results of sampling for any parameter above its required frequency must also be reported.
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 in a primary industry category discharging process water; and
 - b. Any substantial change in the volume or character of pollutants being introduced into the 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. DEVELOPMENT OF LIMITATIONS FOR INDUSTRIAL USERS

1. 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.
2. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 120 days of the effective date of this permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to 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** 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 Limits Development Guidance (July 2004).

C. INDUSTRIAL PRETREATMENT PROGRAM

1. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 - a. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and shall maintain adequate records.
 - b. Issue or renew necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
 - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
 - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
2. In accordance with 40 CFR Part 403.12(i), the permittee shall provide the EPA and the MassDEP with an annual report describing the permittee's pretreatment program activities for the twelve month period ending December 31. The annual report shall be consistent with the format described in **Attachment C** of this permit and shall be submitted no later than March 1st of each year.
3. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
4. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.

5. 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 this permit's effective date 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, if applicable, the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described above.

D. 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(s) 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 the Chief of the Water Technical Unit, or his/her designee, in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

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

E. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

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.

2. Preventative Maintenance Program

The permittee and co-permittees shall maintain an ongoing preventative maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges.

3. Infiltration/Inflow Control Plan:

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

The plan shall include:

- An ongoing program to identify and remove sources of I/I. The program shall include the necessary funding level and the source(s) of funding.
- An inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof down spouts. Priority should be given to removal of public and private inflow sources that are upstream from, and potentially contribute to, known areas of sewer system backups and/or overflows
- Identification and prioritization of areas that will provide increased aquifer recharge as the result of reduction/elimination of I/I to the system.
- An educational public outreach program for all aspects of I/I control, particularly private inflow.
- The permittee shall require, through appropriate agreements, that all member communities control discharges to the permittee's POTW sufficiently to ensure that high flows do not cause or contribute to a violation of the permittee's effluent limitations or cause overflows from the permittee's collection system.

Reporting Requirements:

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

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous calendar year.
- Expenditures for any I/I related maintenance activities and corrective actions taken during the previous year
- A map with areas identified for I/I-related investigation/action in the coming year.

- A calculation of the annual average I/I and the maximum month I/I for the reporting year.
- A report of any I/I related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

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

F. SLUDGE CONDITIONS

1. Standard Conditions

- a. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and the Clean Water Act section 405(d) technical standards.
- b. The permittee shall comply with the more stringent of either the state or federal requirements.
- c. No person shall fire sewage sludge in a sewage sludge incinerator except in compliance with the requirements of 40 CFR part 503 subpart E.

2. Pollutant Limitations

- a. Firing of sewage sludge shall not violate the requirements of the National Emission Standard for beryllium in 40 CFR part 61, subpart C - 10 grams per 24-hour period.
- b. Firing of sewage sludge shall not violate the requirements in the National Emission Standard for mercury in 40 CFR part 61, subpart E - 3200 grams per 24-hour period.
- c. The daily concentration of the metals in the sewage sludge fed to the incinerator shall not exceed the limits specified below (dry weight basis):

	<u>Maximum Daily</u>
Arsenic	1.2×10^4 mg/kg
Cadmium	3.9×10^5 mg/kg
Chromium	1.6×10^6 mg/kg
Lead	1.4×10^5 mg/kg
Nickel	2.1×10^6 mg/kg

3. Operational Standards

- a. The exit gas from the sewage sludge incinerator stack shall be monitored continuously for carbon monoxide.
- b. The monthly average concentration of carbon monoxide in the exit gas from the sewage sludge incinerator, corrected for zero percent moisture and to seven percent oxygen, shall not exceed - **100 ppm on a volumetric basis**
- c. The CO concentration shall be corrected to zero percent moisture using the correction factor below:

$$\text{Correction factor} = \frac{1}{(1-X)}$$

Where : X = decimal fraction of the percent moisture in the sewage sludge incinerator exit gas in hundredths.

- d. The measured CO concentration shall be corrected to seven percent oxygen using the correction factor below:

$$\text{Correction factor} = \frac{14}{(21-Y)}$$

Where: Y = percent oxygen concentration in the sewage sludge incinerator stack exit gas (dry volume/dry volume).

- e. The measured CO value shall be multiplied by the correction factors in items c and d. The corrected CO value shall be used to determine compliance with paragraph b.

4. Management Practices

- a. An instrument that continuously measures and records the carbon monoxide concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator.
- b. An instrument that continuously measures and records the oxygen concentration in the sewage sludge incinerator stack exit gas shall be installed, calibrated, operated and maintained for each incinerator.
- c. An instrument that continuously measures and records combustion temperatures shall be installed, calibrated operated and maintained for each incinerator.
- d. Operation of the incinerator shall not cause the operating combustion temperature for the incinerator to exceed the performance test combustion temperature by more than 20 percent.
- e. Any air pollution control devices shall be appropriate for the type of incinerator and operating parameters for the air pollution control device shall be adequate to indicate proper performance of the air pollution control device. For incinerators subject to the requirements of 40 CFR subpart O, operation of the air pollution control device shall not violate the air pollution control device requirements of that part.
- f. Sewage sludge shall not be fired in an incinerator if it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act or its designated critical habitat.
- g. The permittee shall notify the EPA and DEP if any continuous emission monitoring equipment is shut down or broken down for more that 72 hours while the incinerator continues to operate.
- h. Notification shall include the following:
 - (1) The reason for the shut down or break down;
 - (2) Steps taken to restore the system;
 - (3) Expected length of the down time; and
 - (4) The expected length of the incinerator operation during the down time of the monitoring system.
- i. Break downs or shut downs of less than 72 hours shall be recorded in the operations log along with an explanation of the event.

- j. Copies of all manufacturer's instructions shall be kept on file and be available during inspections.

5. Monitoring Frequency

- a. The frequency of monitoring beryllium shall be as required in 40 CFR part 61, subpart C.
- b. The frequency of monitoring for mercury shall be as required in 40 CFR part 61, subpart E.
- c. The pollutants in paragraph 2c shall be monitored at the following frequency - **bimonthly (6 times per year)**.
- d. After the sewage sludge has been monitored for the pollutants in paragraph 2c for two years at the frequency specified above, the permittee may request a reduction in the monitoring frequency.
- e. The operating parameters for the air pollution control devices shall be monitored at the following frequency - **1/day**.
- f. The CO concentration in the exit gas, the oxygen concentration in the exit gas, information from the instrument used to determine moisture content, and combustion temperatures shall be monitored at the following frequency - **continuously**.

6. Sampling and Analysis

- a. The sewage shall be sampled at a location which is prior to entering the incinerator and provides a representative sample of the sewage sludge being incinerated.
- b. The sewage sludge shall be analyzed using "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA publication SW-846, Second Edition (1982) with Updates I (April 1984) and II (April 1985) and Third Edition (November 1986) with Revision I (December 1987).
- c. If emission testing is done for demonstration of NESHAPS, testing shall be in accordance with Method 101A in 40 CFR part 60, Appendix B, "Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators".

- d. Sewage sludge samples for mercury shall be sampled and analyzed using Method 105 in 40 CFR part 61, Appendix B, "Determination of Mercury in Wastewater Treatment Plant Sewage Sludge".

7. Record Keeping Requirements

- a. The concentrations of the pollutants in paragraph 2c. Report the maximum value of each pollutant.
- b. The CO concentration in the exit gas from the incinerator stack. Report the average monthly concentration.
- c. Information that demonstrates compliance with the National Emission Standard for beryllium.
- d. Information that demonstrates compliance with the National Emission Standard for mercury. If sludge sampling is used, include calculation for compliance demonstration.
- e. The operating combustion temperature for the sewage sludge incinerator.
- f. Values for the air pollution control devices operating parameters. Report the average monthly operating values.
- g. The oxygen concentration and the information used to measure moisture content in the exit gas from the sewage sludge incinerator. Report the oxygen concentration and percent moisture results which were used to determine the CO values reported in paragraph 8b.
- h. The sewage sludge feed rate to the incinerator. Record the average daily and average monthly feed rate.
- i. The stack height of the incinerator.
- j. The dispersion factor for the site where the incinerator is located.
- k. The control efficiency for arsenic, lead, chromium, cadmium and nickel.
- l. A calibration and maintenance log for the instruments used to measure the CO concentration and the oxygen concentration in the exit gas; the information need to determine moisture content in the exit gas, and the combustion temperatures.

8. Reporting

The permittee shall report the information in paragraphs 7 (a-g) annually on February 19.

G. MONITORING AND REPORTING

1. Reporting

Effluent monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Central Regional Office - Bureau of Resource Protection
627 Main Street
Worcester, MA 01608

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

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

H. STATE PERMIT CONDITIONS

This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit, unless otherwise noted, are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap.21, §43.

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