

AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

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

**City of Brockton**

is authorized to discharge from the facility located at

**Brockton Advanced Water Reclamation Facility  
303 Oak Hill Way  
Brockton, Massachusetts 02401**

to receiving water named

**Salisbury Plain River  
Taunton River Watershed (62)**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein. The Town of Abington and the Town of Whitman are co-permittees for Part I.C. Unauthorized Discharges, Part I.D. Operation and Maintenance of the Sewer System, and Part I.E. Alternate Power Source, 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 Abington  
Sewer Department  
350 Summer Street  
Abington, MA 02351**

**Town of Whitman  
Department of Public Works  
100 Essex Street, P.O. Box 454  
Whitman, MA 02382**

This permit shall become effective sixty days from the date of 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 30, 1999.

This permit consists of 17 pages in Part I including effluent limitations, monitoring requirements, Attachments A through C, and 35 pages in Part II including General Conditions and Definitions.

Signed this 11<sup>th</sup> day of May, 2005

/s/ SIGNATURE ON FILE

Linda M. Murphy, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

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

# PART I

EFFLUENT CHARACTERISTIC

## MONITORING REQUIREMENTS

| PARAMETER   | AVERAGE MONTHLY  | AVERAGE WEEKLY               | MAXIMUM DAILY                 | AVERAGE MONTHLY   | AVERAGE WEEKLY    | MAXIMUM DAILY      | MAXIMUM DAILY  | MEASUREMENT FREQUENCY      | SAMPLE TYPE <sup>4</sup>   |
|---|--|------------------------------|-------------------------------|-------------------|-------------------|--------------------|----------------|----------------------------|----------------------------|
| FLOW <sup>1,3</sup>   | ****   | ****                         | ****                          | Report            | ****              | Report             | Report         | Continuous                 | Recorder                   |
| FLOW <sup>2</sup>   | ****   | ****                         | ****                          | Report            | ****              | Report             | Report         | Continuous                 | Recorder                   |
| CBOD <sub>5</sub><br>(May 1 - Oct. 31)<br>(Nov. 1 - April 30) | 750 lbs/day<br>2250 lbs/day                              | 1200 lbs/day<br>3750 lbs/day | 2250 lbs/day<br>4500 lbs/day  | 5 mg/l<br>15 mg/l | 8 mg/l<br>25 mg/l | 15 mg/l<br>30 mg/l | 1/Day<br>1/Day | 24-Hr Comp. <sup>5,6</sup> | 24-Hr Comp. <sup>5,6</sup> |
| TSS<br>(May 1 - Oct. 31)<br>(Nov. 1 - April 30)               | 750 lbs/day<br>2250 lbs/day                              | 1200 lbs/day<br>3750 lbs/day | 2250 lbs/day<br>4500, lbs/day | 5 mg/l<br>15 mg/l | 8 mg/l<br>25 mg/l | 15 mg/l<br>30 mg/l | 1/Day<br>1/Day | 24-Hr Comp. <sup>5,6</sup> | 24-Hr Comp. <sup>5,6</sup> |
| pH RANGE  | 6.5 - 8.3 SU SEE PERMIT PAGE 6 OF 17, PARAGRAPH I.A.1.b. |                              |                               |                   |                   |                    |                |                            | Grab                       |
| DISSOLVED OXYGEN<br>(April 1- Oct. 31)                        | NOT LESS THAN 6.0 mg/l                                   |                              |                               |                   |                   |                    |                |                            | Grab                       |
| TOTAL CHLORINE RESIDUAL <sup>9</sup>                          | ****   | ****                         | ****                          | Report            | ****              | Report             | Report         | Continuous                 | Recorder                   |

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|   |      |      |      |            |      |            |       |      |
|---|------|------|------|------------|------|------------|-------|------|
| TOTAL<br>CHLORINE<br>RESIDUAL <sup>7,9,10</sup> | **** | **** | **** | 0.011 mg/l | **** | 0.019 mg/l | 3/Day | Grab |
|---|------|------|------|------------|------|------------|-------|------|

**CONTINUED FROM PREVIOUS PAGE**

| <b>A.1.</b> During the period beginning on the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number <b>01</b> , treated effluent to the Salisbury Plain 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>MAXIMUM DAILY</u> | <u>AVERAGE MONTHLY</u>         | <u>AVERAGE WEEKLY</u> | <u>MAXIMUM DAILY</u>    | <u>MEASUREMENT FREQUENCY</u> | <u>SAMPLE TYPE<sup>4</sup></u> |
| FECAL COLIFORM <sup>7,8</sup>   | ****                   | ****                  | ****                 | 200/100 cfu's/ml               | ****                  | 400/100 cfu's/ml        | 5/Week                       | Grab                           |
| NH <sub>3</sub> -N (June 1 - Oct. 31)   | 150 lbs/day<br>****    | 150 lbs/day<br>****   | 225 lbs/day<br>****  | 1.0 mg/l                       | 1.0 mg/l<br>****      | 1.5 mg/l<br>Report mg/l | 2/Week                       | 24-Hr Comp. <sup>6</sup>       |
| (Nov 1 - Nov 30)  | ****                   | ****                  | ****                 | 6.3 mg/l                       | ****                  | Report mg/l             | 2/Week                       |                                |
| (Dec 1 - Apr 30)  | ****                   | ****                  | ****                 | 9.5 mg/l                       | ****                  | Report mg/l             | 2/Week                       |                                |
| (May 1 - May 31)  | ****                   | ****                  | ****                 | 3.2 mg/l                       | ****                  | Report mg/l             | 2/Week                       |                                |
| TKN   | Report lbs/day         | ****                  | Report lbs/day       | Report mg/l                    | ****                  | Report mg/l             | 2/Month                      | 24-Hr Comp. <sup>6</sup>       |
| NO <sub>2</sub> /NO <sub>3</sub>  | Report lbs/day         | ****                  | Report lbs/day       | Report mg/l                    | ****                  | Report mg/l             | 2/Month                      | 24-Hr Comp. <sup>6</sup>       |
| COPPER, TOTAL   | ****                   | ****                  | ****                 | 5.3 ug/l                       | ****                  | 7.4 ug/l                | 1/Month                      | 24-Hr                          |

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Footnotes:

1. For flow receiving secondary treatment, report maximum and minimum daily rates and total flow for each operating date. This is an annual average reporting requirement, which shall be reported as a rolling average. The first value will be calculated using the monthly average flow for the first full month ending after the effective date of the permit and the eleven previous monthly average flows. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.
2. The monthly average and maximum daily flows for each month shall be reported.
3. Flows originating from the Towns of Abington and Whitman are limited each to an annual average of 1 MGD. The Co-permittees shall not accept flow from any new sewer connections in other communities although, EPA and MA DEP may allow such a tie-in through a permit modification, if an abutting Town with a completed Comprehensive Wastewater Management Plan (CWMP) demonstrates that a tie-in to Abington or Whitman is an appropriate option.  
  
Increased flows from facilities currently connected directly to the Brockton sewer system shall be offset, to the extent feasible, in order to minimize any net increase in flow to the WWTP.
4. All required effluent samples shall be collected at the point of discharge. Any change in sampling location must be reviewed and approved in writing by EPA and MA DEP. 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. Samples shall be 24-hour composites unless specified as a grab sample in 40 CFR §136.
5. Sampling required for influent and effluent.
6. A 24-hour composite sample will consist of at least twenty four (24) grab samples, which are flow proportional, and taken during one working day. Working day is defined as a twenty-four hour period such as 12 am to 12 am the following day.
7. Fecal coliform and total residual chlorine monitoring will be conducted April 1 through October 31. This is a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu's) per 100 ml, nor shall they exceed 400 cfu's per 100 ml as a daily maximum. Fecal coliform samples shall be taken 5 times per week and conducted concurrently with the TRC sampling described below.  
  
If chlorine is added to the wastewater flow at any time during the period from November 1 through March 31, the effluent shall be sampled for TRC at the frequency required by the permit. The effluent limitation on TRC is in effect year-round.
8. The permittee is required to submit an additional fecal coliform grab sample of the final combined effluent that is discharged into the receiving water when there is a bypass. The sample shall be representative of the blended effluent discharged to the river. This is a report only requirement and shall be included with the bypass reports submitted with the monthly discharge monitoring reports (DMRs).

9. The permittee shall collect and analyze a minimum of three TRC grab samples for compliance purposes. Any additional grab sample monitoring results shall be included in the compliance report.

The results of the grab samples and a comparison to the continuous analyzer reading, including the time of the grab samples, shall be included with the DMRs.

The permittee shall also report the average monthly and maximum daily discharge of TRC using data collected by the continuous TRC analyzer. The permittee shall collect and analyze a minimum of one grab sample per day for calibration purposes. Four continuous recording charts (1/week) showing weekly data, shall be submitted with the monthly DMRs. If the continuous analyzer is not working properly, the permittee shall substitute the TRC results recorded for compliance purposes.

10. 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 Wastewater 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 discharge monitoring report.
11. The 0.2 mg/l total phosphorus limit is a 60 day rolling average limit. The 60 day average value for each day in a given month, beginning on the 60th day after the permit becomes effective, must be calculated and the highest 60 day average value for that month must be reported on the monthly discharge monitoring report (DMR). In addition, the monthly average and the maximum daily values must be reported for each month.
12. The permittee shall conduct chronic (and modified acute) toxicity tests six times per year. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval. The permittee shall test the invertebrate, Ceriodaphnia dubia, only. Four toxicity test samples shall be collected and tests completed during the second week of February, May, August, and November. Results for these tests are to be submitted by last day of the month following the test date.

An additional two samples shall be collected and tests completed during days when treatment plant total daily flow exceeds 30 mgd. These two test may be conducted during any month of the year. The results for these tests shall be submitted by the last day of the month following the test in which they are taken. See Permit Attachment A, Toxicity Test Procedure and Protocol.

| Test Dates<br>Second Week in | Submit Results By:               | Test Species                           | Acute Limit<br>LC <sub>50</sub> | Chronic Limit<br>C-NOEC |
|------------------------------|----------------------------------|--|---------------------------------|-------------------------|
| February<br>May<br>August    | March 31<br>June 30<br>September | <u>Ceriodaphnia dubia</u><br>(daphnid) | ≥ 100%                          | > 98 %                  |

|          |                   |  |  |  |
|----------|-------------------|--|--|--|
| November | 31<br>December 31 |  |  |  |
|----------|-------------------|--|--|--|

After submitting **one year** and a **minimum** of six 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.

13. The LC<sub>50</sub> is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.
14. 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 "98% or greater" limit is defined as a sample which is composed of 98% (or greater) effluent, the remainder being dilution water. This is a maximum daily limit derived as a percentage of the inverse of the dilution factor of 1.02
15. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A Section IV., DILUTION WATER** in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in **Attachment A**, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called "Guidance Document") which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A**. The "Guidance Document" has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA's Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this "Guidance Document" 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**.

#### Part I.A.1. (Continued)

- a. The discharge shall not cause a violation of the water quality standards in 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 biochemical oxygen demand. The percent removal shall be based on monthly average values, and shall be reported on the monthly discharge monitoring report.
- f. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- g.. 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:

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 DEP 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.



6. Limitations for Industrial Users:
  - 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.
  - b. The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within (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 of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee shall complete and submit the attached form (Attachment B) with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee shall complete the revisions within 120 days of notification by EPA and submit the revisions to EPA for approval. The Permittee shall carry out the local limits revisions in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

**B. 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 maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.

2. The permittee 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 403.12(i). The annual report shall be consistent with the format described in Attachment C of this permit and shall be submitted no later than March 1 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, if applicable in its written submission the following areas: (1) enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending EPA Region I's approval under 40 CFR 403.18. This submission is separate and distinct from any local limits analysis submission described in Part I.A.6.b.

**C. UNAUTHORIZED DISCHARGES**

The permit only authorizes discharges in accordance with its terms and conditions and only from the outfall listed in Part I.A. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) from any portion of the collection system owned and operated by the permittee or co-permittees are not authorized by this permit and shall be reported by the owner of the discharge in accordance with Section D.1.e. (1) of the General Requirements of this permit (Twenty-four hour reporting).

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

Operation and maintenance of the sewer system shall be in compliance with the General Requirements of Part II and, the following terms and conditions. The permittee and co-permittees shall independently meet the following conditions for those portions of the collection system which it owns and operates.

**1. Maintenance Staff**

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**

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 co-permittees shall develop and implement plans to control infiltration and inflow (I/I) to its sewer system. The plans shall be submitted to EPA and MA DEP within six months of the effective date of this permit (see page 1 of this permit for the effective date) and shall describe the permittees' and co-permittees' programs for preventing I/I related effluent limit violations, and all unauthorized discharges of wastewater, including overflows and bypasses due to excessive I/I.

The plans 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 City of Brockton's plan shall include implementation of the recommended I/I reduction projects, including the private inflow control program, in the August 2000 report titled, A City Wide Sewer System Evaluation Study. The plan shall also include a schedule for implementing the recommended reduction projects within seven years of the date the I/I plan is submitted. The schedule shall be based on, to the maximum extent practical, equal funding levels for each year and prioritization of the recommended inflow reduction program. Any proposed revisions to the recommended projects or schedule during the term of the permit shall be documented in the annual summary report and shall achieve, at a minimum, the same amount of I/I reduction estimated in the original plan and schedule.

**Reporting Requirements:**

A summary report of all actions taken to remove I/I during the previous calendar year shall be submitted to EPA and MA DEP annually, by the anniversary date of the effective date of this permit. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any 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, 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.
- A report of all flow volumes connected and flow volumes removed from the sewerage system.

**E. 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 alternative power sources with which to sufficiently operate its treatment works (as defined at 40 CFR 403).

**F. SLUDGE CONDITIONS**

The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards.

If an applicable management practice or numerical limitation for pollutants in sewage sludge more stringent than existing federal and state regulations promulgated under Section 405(d) of the CWA, this permit shall be modified or revoked and reissued to conform to the promulgated regulation.

The permittee shall give prior notice to the EPA and MA DEP of any change(s) planned in the permittee's sludge use or disposal practice.

A change in the permittee's sludge use or disposal practice is a cause for modification of the permit. It is a cause for revocation and reissuance of the permit if the permittee requests or agrees.

**1. General Requirements**

- a. 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 in the National Emission Standard for Beryllium in 40 CFR part 61, subpart C, 10 grams per 24-hour period.

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- 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 metals in sewage sludge fed to the incinerator shall not exceed the limit specified below (dry weight basis):

Max. Daily

|               |              |
|---------------|--------------|
| Arsenic.....  | 489 mg/kg    |
| Cadmium.....  | 103 mg/kg    |
| Chromium..... | 14397 mg/kg  |
| Lead.....     | 2751 mg/kg   |
| Nickel.....   | 686629 mg/kg |

## 3. Operational Standards

- a. The monthly average concentration for Total Hydrocarbons (THC), corrected to zero percent moisture and to seven percent oxygen, in the exit gas from the sewage sludge incinerator stack shall not exceed 100 PPM on a volumetric basis.
- b. The measure THC concentration shall be corrected to zero percent moisture using the correction factor below:

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

(percent moisture)

Where:

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

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

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

(oxygen)

Where:

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

- d. The measured THC value shall be multiplied by the correction factors in items b and c.  
The corrected THC value shall be used to determine compliance with Paragraph F.3.a.

## 4. Management Practices

- a. An instrument that continuously measures and records the THC concentration in the sewage sludge incineration stack gas shall be installed, calibrated, operated and maintained for each incinerator in accordance with the manufacturer's written instructions.
- b. The THC instrument shall employ a flame ionization detector; have a heated sampling line maintained at a temperature of 150 degrees Celsius or higher at all times and shall be calibrated at least once every 24 hour operation period using propane.
- c. 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 in accordance with the manufacture's written instructions.
- d. The THC monitor and the oxygen monitor must meet the performance specifications detailed in "Continuous Emissions Monitoring Guidance for Part 503 Sewage Sludge".
- e. Upon completion of the testing to demonstrate compliance with the performance specifications, but not later than 90 days from the effective date of this permit, the operator of the incinerators shall submit to EPA-New England a certification stating that the continuous emissions monitoring system meets the performance specifications detailed in the above referenced guidance.
- f. An instrument that measures and records information used to determine the moisture content in the sewage sludge incinerator stack exit gas continuously, shall be installed calibrated, operated and maintained for each sewage sludge incinerator in accordance with manufacturer's written instructions.
- g. An instrument that measures and records combustion temperatures continuously shall be installed, calibrated, operated and maintained for each sewage sludge incinerator in accordance with manufacturer's written instructions.
- h. The daily average of the combustion temperatures within the combustion zone of the multiple hearth incinerator shall not exceed 1,750°F.
- i. The air pollution control devices shall be operated so that the differential pressure across the venturi scrubber shall be a minimum of 20 to 38 inches water column.
- j. Sewage sludge shall not be fired in a sewage sludge 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.

- k. The permittee shall notify the EPA-New England within 7 days if any continuous emission monitoring equipment is shutdown or broken down for more than 72 hours while the incinerator continues to operate.
- l. Notification shall include the following:
  - (1) The reason for the shutdown or break down;
  - (2) Steps taken to restore the system;
  - (3) The expected length of the down time; and
  - (4) The expected length of the incinerator operation during the down time of the monitoring system.
- m. Break downs or shutdowns of less than 72 hours shall be recorded in the operations log along with an explanation of the event.
- n. Copies of all manufacturer's instructions shall be kept on file and be available during inspections.

5. Monitoring Frequency

- a. Beryllium and mercury shall be monitored at the following frequency: 2 times per year, during the months of January and July.
- b. Either stack testing or sludge testing may be used for demonstration of compliance with the beryllium and mercury requirements in Paragraph F.2.a and b.
- c. The pollutants in Paragraph F.2.c. should be monitored at the following frequency: 6 times per year, during the months of January, March, May, July, September and November.
- d. The operating parameters for the air pollution control devices shall be monitored at the following frequency: 1/day.
- e. The THC concentration in the gas, the oxygen concentration in the exit gas, information from the instrument used to determine moisture content, and combustion temperatures shall be monitored continuously.

6. Sampling and Analysis

- a. The sewage sludge shall be sampled at a location which is prior to charging to the incinerator and provides a representative sample of the sewage sludge being used or disposed.
- b. The metals in 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 61, Appendix B, "Determination of Particulate and Gaseous Mercury Emissions from Sewage Sludge Incinerators."
- d. When sludge sampling is used for demonstration of compliance with NESHAPS, the following equation shall be used:

$$E = \frac{(M) \times (Q) \times (PS)}{1000}$$

Where:

E = Emission rate in grams/day  
M = Pollutant concentration in sewage sludge in ug/gram  
Q = Sludge feed rate to incinerator  
PS = Percent solids

When determining emissions for beryllium, multiply the above equation by (1-CE). CE is the control efficiency for beryllium.

7. Record Keeping

The permittee shall develop and retain the following information for five years:

- a. The concentration of pollutants in Paragraph F.2.c. Report the maximum value of each pollutant.
- b. The THC concentration in the exit gas from each sewage sludge incinerator stack. Report the average monthly concentration as defined in Paragraph F.3.a.
- c. The information that demonstrates that the requirements in the National Emission Standard for beryllium are met. The results of either the emission testing or sludge sampling shall be reported. If sludge sampling is reported, include calculation in Paragraph F.6.d. for compliance demonstration.
- d. The information that demonstrates that the requirements in the National Emissions Standard for mercury are met. The results of either the emission testing or sludge sampling shall be reported. If sludge sampling is reported, include calculation in Paragraph F.6.d. for compliance demonstration.
- e. The combustion temperatures, including the maximum combustion temperature for each sewage sludge incinerator. Report the average temperature range within the combustion zone and the maximum



combustion temperature described in Paragraph F.4.h.

- f. The values for the air pollution control device(s) operating parameters. Report the monthly average operating range.
- g. The oxygen concentration and 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 THC values reported in Paragraph F.7.b.
- h. The sewage sludge feed rate to the incinerator. Record the average daily and average monthly feed rate.
- i. The stack height of the sewage sludge incinerator.
- j. The dispersion factor for the site where the sewage sludge incinerator is located.
- k. The control efficiency for lead, arsenic, cadmium, chromium and nickel for each incinerator.
- l. The risk specific concentration for chromium, if a site specific risk specific concentration is determined.
- m. A calibration and maintenance log for the instruments used to measure the THC concentration and oxygen concentration in the exit gas from the sewage sludge incinerator stack, the information needed to determine moisture content in the exit gas, and the combustion temperatures.

8. Reporting

The information in paragraph F.7., a through g, shall be reported annually by February 19. All reports shall be submitted to EPA and MADEP.

**G. MONITORING AND REPORTING**

1. Reporting

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 EPA 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  
Bureau of Waste Prevention  
Southeast Regional Office  
20 Riverside Drive  
Lakeville, MA 02347

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

Signed and dated Industrial Pretreatment reports and Industrial User report revising local limits required by this permit shall also be submitted to the State at:

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

#### **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 (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chapter 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.

