

**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),

**The City of Gloucester**

is authorized to discharge from the facility located at

**Gloucester Water Pollution Control Facility  
and four (4) Combined Sewer Overflows (CSOs)**

to receiving waters named

**Massachusetts Bay and Gloucester Harbor**

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

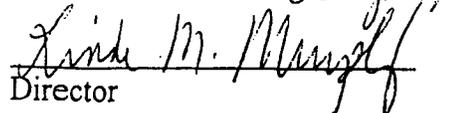
This permit shall become effective sixty (60) days after the date of signature.

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

This permit supersedes the permit issued on June 26, 1985.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, Attachments A through F, and 35 pages in Part II including General Conditions and Definitions.

Signed this 28 day of August, 2001

  
Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Boston, MA

  
Acting Assistant Commissioner  
Bureau of Resource Protection  
Department of Environmental Protection  
Commonwealth of Massachusetts  
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

<u>Effluent Characteristic</u>	<u>Units</u>	<u>Discharge Limitation</u>			<u>Monitoring Requirement</u>	
		<u>Average Monthly</u>	<u>Average Weekly</u>	<u>Maximum Daily</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow	MGD	5.15 <sup>1</sup>	----	----	Continuous <sup>2</sup>	Recorder
BOD <sub>5</sub>	mg/l lbs/day	245 10520	----	367	3/Week <sup>3</sup> What days?	24-Hour Composite <sup>4</sup>
TSS	mg/l lbs/day	140 6010	----	210	3/Week <sup>3</sup>	24-Hour Composite <sup>4</sup>
Settleable Solids	ml/l	---	---	0.8	1/Day	Grab
pH	S.U.	(See Condition I.A.1.b. on Page 4)	6.0 - 8.5		1/Day	Grab
Oil & grease <sup>5</sup>	mg/l	25	----	----	1/Week	Grab
Fecal Coliform Bacteria <sup>6</sup>	cfu/100 ml	200	----	400	3/Week	Grab
Total Residual Chlorine <sup>7</sup>	mg/l	0.49	----	0.77	3/Day	Grab
LC <sub>50</sub> <sup>8</sup>	%	----	----	100	4/year <sup>9</sup>	Grab
Priority Pollutant Scan	-----	----	----	Report	1/year <sup>10</sup>	24-Hour Composite <sup>4</sup>
Total Petroleum Hydrocarbons	mg/l	5.0	----	----	1/Month <sup>11</sup>	24-Hour Composite <sup>4</sup> Grab

## Footnotes:

1. This is an annual average limit, 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. (e.g. If the permit is effective on 5/15/00, the first reported annual average will be taken from the June 2001 DMR and the previous eleven monthly average flows.) Each subsequent month's DMR will report the average flow for that month and the previous 11 months.
2. For flow, report maximum and minimum daily rates and total flow for each operating date.
3. Sampling required for influent and effluent.
4. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during one working day.
5. US EPA Test Method 1664 shall be used for oil & grease analysis. After at least one year of monitoring under this permit, the permittee may submit a written request to reduce the monitoring frequency if there is sufficient data to indicate that the levels of oil & grease in the discharge will not cause or contribute to any water quality standards violations. The permittee shall continue testing for this parameter until the EPA modifies this permit to reduce the monitoring frequency.
6. Fecal coliform monitoring will be conducted year round. This is a State certification requirement. The monthly average limit is expressed as a geometric mean. The effluent samples to be analyzed for fecal coliform and total residual chlorine may first be held in a dark environment for a period not to exceed 2 hours in order to simulate the effluent's path through the outfall pipe. The permittee has shown that the residence time through this pipe tends to lower the effluent levels of these two parameters and this time period corresponds to a typical wet weather flow condition.
7. The total residual chlorine shall be analyzed by EPA approved methods found in Standard Methods for the Examination of Water and Wastewater, 20th Edition, 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. Sample results of 50 ug/l or less or non-detect shall be reported as zero on the discharge monitoring report.
8. 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.
9. The permittee shall conduct acute toxicity tests four times per year. The permittee shall test the Mysid shrimp, Mysidopsis bahia and the Inland silverside, Menidia beryllina. Toxicity test samples shall be collected during the months of March, June, September, and December. Results are to be submitted by the 30th day of the month following the sample i.e. April, July, October, and January. See Permit Attachment A, Toxicity Test Protocol.
10. The annual priority pollutant scan shall be taken during dry weather conditions and conducted as specified in Attachment D of the permit.
11. For TPH, US EPA Test Method 1664 may be used. The TPH portion of the total oil & grease number can be derived with this method.

## Part I.A. (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 6.0 nor greater than 8.5 at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
- 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 30 percent removal of both total suspended solids and biochemical oxygen demand on a semi-annual basis. This is a condition of the Section 301(h) waiver extension. For purposes of this permit, the semi-annual periods shall be January through June and July through December.
- f. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the designed flow, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
- g. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control. 5.792 (80% of 7.24)
- h. **Chlorination System Report** - Within 12 months of the effective date of the permit, the permittee will submit a report documenting the effectiveness of the chlorination and dechlorination systems. The report will specifically address how flow variability and chlorine demand variability affect compliance with the TRC and fecal coliform limits at all times. Sampling data shall be provided to support conclusions on how hourly and daily flow and chlorine demand variability affects permit compliance. The report will include a description of the chlorination and dechlorination systems and the methods for dosage control. The report will identify all changes necessary to ensure compliance with the TRC and fecal coliform limits at all times, including equipment modifications and upgrades, operational procedures (including calibration procedures and alarm/response procedures), and sampling protocols. The report will include a schedule for implementing all of the necessary changes. An annual report shall be submitted on March 1 of each year summarizing all exceedances of the TRC and fecal coliform effluent limits during the previous year, the estimated or measured fecal coliform and chlorine discharge levels during the exceedance, and measures taken to remedy the problem(s) and to prevent future occurrences.

2. All POTWs must provide adequate notice to the Director of the following:

- a. Any new introduction of pollutants into that POTW from an indirect discharger in a primary industry category discharging process water; 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.
- b. If, within 30 days after notice of an interference or pass through violation has been sent by EPA to the POTW, and to persons or groups who have requested such notice, the POTW fails to commence appropriate enforcement action to correct the violation, EPA may take appropriate enforcement action.

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.

## B. UNAUTHORIZED DISCHARGES

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

## C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

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

### 1. Maintenance Staff

The permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit.

### 2. Infiltration/Inflow

The permittee shall eliminate excessive infiltration/inflow to the sewer system. EPA defines excessive I/I as "the quantities of I/I which can be economically eliminated from a sewer system as determined by a cost-effectiveness analysis that compares the costs for correcting the I/I conditions to the total costs for transportation and treatment of the I/I." As a quantitative measure, according to the MA DEP's guide for the Design of Wastewater Treatment Works (Publication TR-16), a normal range of infiltration to a POTW is 250 - 500 gpd/inch diam/mile of sewer (0.24 - 0.48 cubic meters /cm of pipe diam/km/day). In designing a POTW, infiltration rates above these levels could be allowed with proper documentation. Therefore, these figures could be used as guidance. Determinations of excessive I/I should consider impacts related to groundwater and stream flow depletion and the elimination of all sanitary sewer overflows.

A summary report of all actions taken to minimize infiltration/inflow during the previous calendar year shall be submitted to EPA and the MA DEP by March 1 of each year. This report shall also include a graph of flows to the treatment plant during the year and an analysis of I/I trends (i.e. is I/I being reduced). If there have been any unauthorized discharges from the collection system during the previous calendar year which were caused by inadequate sewer system capacity, the permittee shall also include in this report an evaluation of actions necessary to restore adequate capacity.

### 3. Alternate Power Source

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

## D. DEVELOPMENT OF LIMITATIONS FOR INDUSTRIAL USERS:

The permittee shall develop and enforce specific effluent limits (local limits) for Industrial User(s), and all other users as appropriate, which together with appropriate changes in the POTW Treatment Plant's Facilities or operation, are necessary to ensure continued compliance with the POTW's NPDES permit or sludge use or disposal practices. Specific local limits shall not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond. Within 120 days of the effective date of this permit, the permittee shall prepare and submit a written technical evaluation to the EPA analyzing the need to revise local limits. As part of this evaluation, the permittee shall assess how the POTW performs with respect to influent 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 analysis in accordance with EPA Guidance Manual for the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program (December, 1987).

## E. 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 120 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; and
  - 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 over 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.

## F. BIOLOGICAL MONITORING PROGRAM (BMP)

The permittee is required to continue its ongoing monitoring program, which is required by the 301(h) regulations. Based upon a review of the annual biological monitoring reports to date, it has been determined that this program should be modified to include some different sampling locations and to eliminate certain aspects for which sufficient data has been collected. See the BMP in **Attachment D**. These reports shall be due annually on March 1. The submission of semi-annual reports is no longer required.

## G. COMBINED SEWER OVERFLOWS (CSOs)

### 1. EFFLUENT LIMITATIONS

- a. The permittee is authorized to discharge storm water/wastewater from combined sewer systems that overflow as a result of storm water flow, including snow melt runoff from combined sewer outfalls listed in **Attachment E**, subject to the following effluent limitations:
  - i. The discharges shall receive treatment at a level providing Best Practicable Control Technology Currently Available (BPT), Best Conventional Pollutant Control Technology (BCT) to control and abate conventional pollutants and Best Available Technology Economically Achievable (BAT) to control and abate non-conventional and toxic pollutants. The EPA has made a Best Professional Judgement (BPJ)

determination that BPT, BCT, and BAT for CSOs are implementation of Minimum Technology Based Limitations (MTBLs) specified below and detailed further in Part I.E.2. Minimum Technology Based Controls, Minimum Implementation Levels, of this permit:

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1. Proper operation and regular maintenance programs for the sewer system and the CSOs.
2. Maximum use of the collection system for storage.
3. Review and modification of the pretreatment program to assure CSO impacts are minimized.
4. Maximization of flow to the POTW for treatment.
5. Prohibition of dry weather overflows from CSOs.
6. Control of solid and floatable materials in CSO.
7. Pollution prevention programs that focus on contaminant reduction activities.
8. Public notification to ensure that the public receives adequate notification of CSO discharges and impacts.
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls.

The permittee shall continue to implement these Nine Minimum Controls as outlined in its latest NMC report on Nine Minimum Control Measures for CSOs which was submitted in October of 1999 and which is being revised based on EPA and MA DEP comments. The permittee's NMC program may be modified by the permittee to enhance its effectiveness but it must always include the minimum controls listed in Item 2 below. An annual status report due on March 31st of each year shall describe the permittee's activities in accordance with **Attachment F** of this permit "Nine Minimum Technology Based Controls Documentation and Implementation Guidance".

ii. The discharges shall not cause violations of Federal or State Water Quality Standards.

**2. MINIMUM TECHNOLOGY BASED CONTROLS, MINIMUM IMPLEMENTATION LEVELS**

- a. Each CSO structure/regulator, pumping station and/or tide-gate shall be routinely inspected, at a minimum of once per month, to insure that they are in good working condition and adjusted to minimize combined sewer discharges.

The following inspection results shall be recorded: the date and time of the inspection, the general condition of the facility, and whether the facility is operating satisfactorily. If maintenance is necessary, the permittee shall record: the description of the necessary maintenance, the date the necessary maintenance was performed, and whether the observed problem was corrected. The permittee shall maintain all records of inspections for at least three years.

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Annually, no later than March 31st, the permittee shall submit a certification to the State and EPA which states that the previous calendar year's inspections were conducted, the

results were recorded, and the records were maintained.

The State and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the permittee.

- b. Discharges to the combined system of septage, holding tank wastes or other material which may cause a visible oil sheen or containing floatable material are prohibited during wet weather when CSO discharges may be active. (MTBL# 3,6, & 7).
- c. Dry weather overflows (DWOs) are prohibited (MTBL # 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within 24 hours in accordance with the reporting requirements for plant bypass (Paragraph D.1.e. of Part II of this permit). For EPA, the Compliance Branch may be contacted at (617) 918-1760.
- d. The permittee shall record all discharges from CSOs (MTBL#9). The following information must be recorded for each CSO for each discharge event:
  - Estimated duration (hours) of discharge;
  - Estimated volume (gallons) of discharge; and
  - National Weather Service precipitation data from the nearest gage where precipitation is available at daily (24-hour) intervals and the nearest gage where precipitation is available at one-hour intervals. Cumulative precipitation per discharge event shall be calculated.

The permittee shall maintain all records of discharges for at least six years after the effective date of this permit.

Annually, no later than March 31st, the permittee shall submit a certification to the State and EPA which states that the all discharges from CSOs were recorded, and records maintained for the previous calendar year.

- e. The permittee shall install and maintain identification signs for all CSO structures (MTBL #8). The signs must be located at or near the combined sewer outfall structures and easily readable by the public. These signs shall be a minimum of 12 x 18 inches in size, with white lettering against a green background, and shall contain the following information:

**CITY OF GLOUCESTER  
WET WEATHER  
SEWAGE DISCHARGE  
OUTFALL (discharge serial number)**

### 3. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in **Attachment E** of this permit. Discharges of wastewater from any other point source are not authorized under this permit, unless in accordance with Part II.B.4.(Bypass) of this permit.

### H. 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 and with the CWA Section 405(d) technical standards.
2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.
3. The requirements and technical standards of 40CFR part 503 apply to facilities which perform one or more of the following 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 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.
5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements:
  - General requirements
  - Pollutant limitations
  - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
  - Management practices
  - Record keeping
  - Monitoring
  - Reporting

Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

- The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency, as required. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year:

less than 290	1/ year
290 to less than 1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

- The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
- The permittee shall submit an annual report containing the information specified in the guidance. Reports are due annually by February 19. Reports shall be submitted to the address contained in the reporting section of the permit.

## I. MONITORING AND REPORTING

### 1. Reporting

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit.

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  
Bureau of Resource Protection  
Northeast Regional Office  
205A Lowell Street  
Wilmington, MA 01887

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

#### J. 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. 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.