

NPDES Permit No. MA0100633
2005 Reissuance, Page 1 of 17

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),

Lowell Regional Wastewater Utilities, (the Permittee)

is authorized to discharge from the facility located at

**First Street Boulevard (Route 110)
Lowell, Massachusetts 01850 and nine Combined Sewer Overflows (CSO's)**

to receiving waters named

Merrimack River, Concord River, and Beaver Brook

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

The Massachusetts Municipalities of Chelmsford, Dracut, Tewksbury and, Tyngsboro (the Co-permittees) are co-permittees for specific activities required in Part I.C. Unauthorized Discharges, Part I.D. Operation Maintenance of the Sewer System and, Part I.E. Alternate Power Source. The responsible Municipal Departments are:

**Town of Chelmsford
Sewer Commission
50 Billerica Road
Chelmsford, MA 01824**

**Town of Dracut
Sewer Commission
1196 Lakeview Avenue
Dracut, MA 01826**

**Town of Tewksbury
Department of Public Works
999 Whipple Road
Tewksbury, MA 01876**

**and, Town of Tyngsborough
Town Hall
25 Bryants Lane
Tyngsborough, MA 01879**

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 August 14, 1997.

This permit consists of 16 pages in Part I including effluent limitations, monitoring requirements, Attachments A through E, and 35 pages in Part II including General Conditions and Definitions.

Signed this 1st day of September, 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

NPDES Permit No. MA0100633
2005 Reissuance, Page 2 of 17

PART I

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 035 , treated effluent. Such discharges shall be limited and monitored as specified below.									
EFFLUENT CHARACTERISTIC					EFFLUENT LIMITS			MONITORING REQUIREMENTS	
PARAMETER	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE ³ TYPE		
FLOW ²	*****	*****	32 MGD	*****	Report MGD	CONTINUOUS	RECORDER		
CBOD ₅	6672 lbs/Day	*****	25 mg/l	40 mg/l	50 mg/l	5/WEEK	24-HOUR COMPOSITE ^{4,5}		
TSS	6672 lbs/Day	*****	30 mg/l	45 mg/l	50 mg/l	5/WEEK	24-HOUR COMPOSITE ^{4,5}		
pH RANGE ¹	6.0 - 8.3 SU SEE PERMIT PAGE 6 OF 16, PARAGRAPH I.A.1.b.					1/DAY	GRAB		
TOTAL CHLORINE RESIDUAL ^{6,7}	*****	*****	0.21 mg/l	*****	0.37 mg/l	1/Day	GRAB		
TOTAL CHLORINE RESIDUAL ^{6,7}	*****	*****	REPORT mg/l	*****	REPORT mg/l	CONTINUOUS	RECORDER		
FECAL COLIFORM ^{1,6,8}	*****	*****	200/100 ml	*****	400/100 ml	5/WEEK	GRAB		
DISSOLVED OXYGEN (APRIL 1 - OCTOBER 31)	REPORT					1/DAY	GRAB		

A.1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge from outfall serial number 035, treated effluent. Such discharges shall be limited and monitored as specified below.									
<u>EFFLUENT CHARACTERISTIC</u>				<u>EFFLUENT LIMITS</u>				<u>MONITORING REQUIREMENTS</u>	
PARAMETER	AVERAGE MONTHLY	AVERAGE WEEKLY	AVERAGE MONTHLY	AVERAGE WEEKLY	MAXIMUM DAILY	MEASUREMENT FREQUENCY	SAMPLE ³ TYPE		
AMMONIA NITROGEN ⁹	*****	*****	*****	*****	REPORT	1/QUARTER	24-HOUR COMPOSITE ^{4,5}		
TOTAL KJELDAHL NITROGEN ⁹	*****	*****	*****	*****	REPORT	1/QUARTER	24-HOUR COMPOSITE ^{4,5}		
NITRITE & NITRATE NITROGEN ⁹	*****	*****	*****	*****	REPORT	1/QUARTER	24-HOUR COMPOSITE ^{4,5}		
TOTAL PHOSPHORUS ⁹	*****	*****	*****	*****	REPORT	1/MONTH	24-HOUR COMPOSITE ^{4,5}		
WHOLE EFFLUENT TOXICITY ^{10,11,12,12}	Acute LC ₅₀ ≥ 100% Chronic C-NOEC ≥ Report %					4/YEAR	24-HOUR COMPOSITE ⁵		

All sampling shall be representative of the effluent that is discharged through outfall 035 to the Merrimack River. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of every month. Any deviations from the routine sampling program shall be documented in correspondence appended to the applicable discharge monitoring report that is submitted to EPA.

Footnotes

NPDES Permit No. MA0100633
2005 Reissuance, Page 5 of 17

1. Required for State Certification.
2. For flow, report maximum and minimum daily rates and total flow for each operating date. 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. Each subsequent month's DMR will report the annual average flow that is calculated from that month and the previous 11 months.
3. All samples shall be taken at the outfall structure after the chlorine contact chamber. Any change in sampling location must be reviewed and approved in writing by EPA and MADEP. 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.
4. Sampling required for influent and effluent.
5. A 24-hour flow proportional composite sample will consist of at least twenty four (24) grab samples taken during one working day. A working day is defined as a 24-hour period, i.e, 12:00 midnight to 12:00 midnight the following day.
6. Fecal coliform and total residual chlorine monitoring will be conducted year round. Fecal coliform is a State certification requirement. Fecal coliform discharges shall not exceed an average monthly geometric mean of 200 colony forming units per 100 ml (cfu) nor shall they exceed 400 cfu per 100 ml as a daily maximum. Fecal coliform samples shall be taken 5 times per week and be conducted concurrently with the TRC sampling described below.

The chlorination system shall include an alarm for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time that the reduced levels of chlorination occurred.
7. The permittee shall collect one TRC grab sample per day 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 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 United States Environmental Protection Agency 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 discharge monitoring report.

The permittee shall also report the average monthly and daily maximum 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. One grab sample can be used for both compliance and calibration.

NPDES Permit No. MA0100633
2005 Reissuance, Page 6 of 17

Four continuous recording charts, (1/week), showing weekly data shall be submitted with the monthly DMRs. The permittee shall report the average of three TRC grab sample per day, if the continuous analyzer is not working properly.

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. This requirement applies during regular operating hours at the LRWU. Regular operating working hours are Monday through Friday, 7:00 am to 3:00 pm. 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 CSO/bypass reports submitted with the monthly DMRs.
9. The permittee shall report two additional samples collected during days when secondary treatment is bypassed. A high flow event is defined as flow that exceeds 19 MGD.
10. 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_{50} 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 January, April, July, and October. 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 acute toxicity test shall be completed on these additional samples during days when secondary treatment is bypassed. 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 Second Week in	Submit Results By:	Test Species	Acute Limit LC_{50}	Chronic NOEC
January April July October	February 28 th May 31 th August 31 th November 30 th	<u>Ceriodaphnia dubia</u> (daphnid) See Attachment A	$\geq 100 \%$	$\geq$ Report %

11. 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.
12. 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.
13. 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

NPDES Permit No. MA0100633
2005 Reissuance, Page 7 of 17

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 of the receiving waters.
- b. The pH of the effluent shall not be less than 6.0 nor greater than 8.3 at any time.
- c. The discharge shall not cause objectionable discoloration, odor or turbidity of the receiving waters.
- d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
- e. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.
- 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 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:

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.

NPDES Permit No. MA0100633
2005 Reissuance, Page 8 of 17

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. INDUSTRIAL PRETREATMENT PROGRAM

1. 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 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 180 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).
- a. The permittee shall implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, 40 CFR 403. At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
 1. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users shall be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
 2. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.

NPDES Permit No. MA0100633
2005 Reissuance, Page 9 of 17

3. Obtain appropriate remedies for noncompliance by any industrial user with any pretreatment standard and/or requirement.
 4. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
- b. The permittee shall provide the EPA and 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.
 - c. The permittee must obtain approval from EPA prior to making any significant changes to the industrial pretreatment program in accordance with 40 CFR 403.18(c).
 - d. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the Federal Regulations at 40 CFR 405 et. seq.
 - e. The permittee must modify its pretreatment program to conform to all changes in the Federal Regulations that pertain to the implementation and enforcement of the industrial pretreatment program. The permittee must provide EPA, in writing, within 180 days of this permit's effective date proposed changes, **if applicable**, to the permittee's pretreatment program deemed necessary to assure conformity with current Federal Regulations. At a minimum, the permittee must address in its written submission the following areas: (1) development of an enforcement response plan; (2) revise the local sewer-use ordinance or regulation, as appropriate, to be consistent with Federal Regulations; (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.B.1. If the permittee has already submitted the above documents to EPA for approval and is awaiting an EPA decision, this section shall not apply.

C. UNAUTHORIZED DISCHARGES

The permit only authorizes discharges in accordance with its terms and conditions and only from outfalls listed in Part 1.A.1. of this permit and the combined sewer overflow outfalls identified in Attachment D of the permit. 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 Part II. 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 in Part II, and the following terms and conditions. The permittee and each co-permittee are required to complete the following activities for the collection system which it owns.

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.

NPDES Permit No. MA0100633
2005 Reissuance, Page 10 of 17

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:

Develop and implement a plan to control infiltration and inflow (I/I) to the separate sewer systems. The plan shall be submitted to EPA, MA DEP and, the Lowell Regional Water and Wastewater Utilities 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' 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. In addition, the plan shall also prioritize the I/I removal program in areas tributary to combined sewer areas so that the frequency, duration and volume of discharges from combined sewer overflows is minimized or reduced during the effective period of this permit.

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.

Reporting Requirements:

A summary report of all actions taken to minimize I/I during the previous calendar year shall be submitted to EPA and the MADEP 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.

NPDES Permit No. MA0100633
2005 Reissuance, Page 11 of 17

- A calculation of the annual average I/I, the maximum monthly 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 Section 1.C., Unauthorized Discharges section of this permit.

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 an alternative power source with which to sufficiently operate the Publically Owned Treatment Works as defined at 40 CFR §403.3.

F. COMBINED SEWER OVERFLOWS (CSO's)

1. EFFLUENT LIMITATIONS

- a. During wet weather, the permittee is authorized to discharge storm water/wastewater from combined sewer outfalls listed in Attachment D, 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 combined sewer overflow (CSO) control include the implementation of Nine Minimum Controls (NMC) specified below and detailed further in Part I.E.2. "Nine Minimum Controls, Minimum Implementation Levels" of this permit:
 - 1. Proper operation and regular maintenance programs for the sewer system and the combined sewer overflows.
 - 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 occurrences and CSO impacts.
 - 9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls. Implementation of these controls is required by the effective date of the permit.

NPDES Permit No. MA0100633
2005 Reissuance, Page 12 of 17

Documentation of the implementation of these controls has been submitted and is currently under review by EPA and the State. EPA and the State consider that approvable

documentation must include the minimum requirements set forth in Part I.F.2 of this Permit and additional activities the permittee can reasonably undertake.

- ii. The discharges shall not cause **or contribute to** violations of Federal or State Water Quality Standards.

2. Nine Minimum Controls, Minimum Implementation Levels

- a. The permittee must implement the nine minimum controls in accordance with the documentation provided to EPA and MADEP or as subsequently modified to enhance the effectiveness of the controls. This implementation must include the following controls plus other controls the Permittee can reasonably implement as set forth in the documentation.
- b. Each CSO structure/regulator, pumping station and/or tidegate 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 and tidal surcharging. (NMC # 1, 2 and 4). 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. The State and EPA have the right to inspect any CSO related structure or outfall at any time without prior notification to the permittee.
- c. 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. (NMC# 3,6, and 7).
- d. Dry weather overflows (DWOs) are prohibited (NMC# 5). All dry weather sanitary and/or industrial discharges from CSOs must be reported to EPA and the State within 24 hours and provide a written report within 5 days in accordance with the reporting requirements for plant bypass (Paragraph D.1.e(1) of Part II of this permit).
- e. The permittee shall quantify and record all discharges from combined sewer outfalls (NMC# 9). Quantification may be through direct measurement or estimation. When estimating, the permittee shall make reasonable efforts, i.e. gaging, measurements, to verify the validity of the estimation technique. The following information must be recorded for each combined sewer outfall 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.

NPDES Permit No. MA0100633
2005 Reissuance, Page 13 of 17

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

- f. The permittee shall install and maintain identification signs for all combined sewer outfall structures (NMC# 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 LOWELL
WET WEATHER
SEWAGE DISCHARGE
OUTFALL (discharge serial number)

3. Annual Report

By April 30, 2005 and April 30 of each year thereafter the permittee shall submit a report which includes the following information;

- a. Activation frequency and discharge volume for each CSO during the previous calendar year. The report shall include this information for each of the authorized CSO discharges listed on Attachment D.
- b. Precipitation during the previous year for each day, including total rainfall, peak intensity, and average intensity.
- c. A certification which states that the previous calendar year's monthly inspections were conducted, results recorded, and records maintained.
- d. A summary of modifications to the approved NMC program which have been evaluated, and a description of those which will be implemented during the upcoming year.

In the first annual report submitted in accordance with this permit, the permittee shall submit a public notification plan to describe the measures actively being taken to meet NMC #8 (see NMC #8), and an evaluation of further measures to enhance the public notification program, including the following;

- i. Outfall signs visible from both water and land.
- ii. Signs/Notices at areas where people may be using CSO-impacted waters for recreation such as swimming, boating or fishing. The notice would include information on the health risks posed by CSOs and links for additional information on CSOs and water quality.
- iii. Review of the sewer system model to determine the threshold rain events which normally will cause overflows.
- iv. Quarterly postings on the permittee's website which would give the locations of the CSOs, and associated health risks and estimates of CSO activations and volumes.
- v. Annual press release and notification to interested individuals and groups on the progress of the CSO abatement work, also noting contacts for additional information on CSOs and water quality.

NPDES Permit No. MA0100633
2005 Reissuance, Page 14 of 17

- vi. Notice to local health agents and other downstream public officials, including drinking water treatment plants, shellfish wardens, and harbormasters within 24 hours of activation of CSOs. The public notification plan shall include a schedule for implementation of enhanced public notice measures.

G. 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 40 CFR 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 e.g. lagoons, reed beds, or are otherwise excluded under 40 CFR 503.6. See Sludge Guidance Attachment.
5. The permittee shall use and comply with the attached sludge 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.

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

less than 290
290 to less than 1500

1/ year
1 /quarter

NPDES Permit No. MA0100633
2005 Reissuance, Page 15 of 17

1500 to less than 15000
15000 +

6 /year
1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.
8. The permittee shall submit an annual report containing the information specified in the guidance by February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:
 - Name and address of contractor responsible for sludge disposal
 - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

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 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
Northeast Regional Office
Bureau of Resource Protection
1 Winter Street
Boston, MA 02108

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

NPDES Permit No. MA0100633
2005 Reissuance, Page 16 of 17

Signed and dated Industrial Pretreatment reports and Industrial User reports 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

2. The permittee shall notify all downstream water supply communities listed below of any emergency condition, plant upset, bypass, CSO discharge or other system failure which has the potential to violate permit limits and affect harvesting of shellfish or the quality of water to be withdrawn for drinking water purposes. This notification should be made as soon as possible, and in anticipation of such an event, if feasible, without taking away from any response time necessary to attempt to alleviate the situation. The permittee shall follow up with written notification within 10 days to the contacts below. This notification shall include the reason for the emergency, any sampling information, any visual data recorded, a description of how the situation was handled, and when it would be considered to no longer be an emergency situation. Below are the contacts and phone numbers of the drinking water suppliers which will be contacted:

Andover Water Department: Treatment Facility (508) 623-8350

- 1) DPW Superintendent, Robert McQuade
- 2) Treatment Facility Operator, John Polano

Lawrence Water Department: Treatment Facility (508) 794-5779, Pumping Station/Office (508) 794-5781

- 1) Head Chemist, Bill McCarthy
- 2) Head Operator/Water Manager, Dante Savastano

Methuen Water Division: Treatment Facility (508) 794-3286

- 1) Water Superintendent, Harold Johnson
- 2) Water Treatment Plant Supervisor, Mark Riopelle

Tewksbury Water Division: Treatment Facility (508) 858-0345

- 1) Treatment Facility Supervisor, Leon Garratt
- 2) Head Chemist, Lou Zediana

3. The permittee shall notify the Massachusetts Division of Marine Fisheries, within twenty-four hours when a permit excursion for fecal coliform or plant failure occurs. A twenty four hour notification of a permit excursion or plant failure should be sent to the following address and telephone number:

Division of Marine Fisheries
Shellfish Management Program
30 Emerson Avenue
Gloucester, MA 01930
(978)282-0308

NPDES Permit No. MA0100633
2005 Reissuance, Page 17 of 17

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. 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.