

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),

**Town of Spencer
Sewer Commission**

is authorized to discharge from a facility located at

**Spencer Wastewater Treatment Plant
Route 9
Spencer, MA**

to receiving waters named

Cranberry Brook

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

This permit will become effective on the first day of the month following 60 days after signature.

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

This permit supersedes the permit issued on February 4, 2003 and expired on April 5, 2006.

This permit consists of 12 pages in Part I including effluent limitations, monitoring requirements, and state permit conditions; 25 pages in Part II, Standard Conditions; Attachment A - Freshwater Chronic Toxicity Test Procedure and Protocol, and Attachment B - Sludge Compliance Guidance.

Signed this 27th day of September, 2007.

/S/ SIGNATURE ON FILE

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

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Influent Flow – Annual Average ¹	MGD	1.08	----	-----	Continuous	Recorder
Influent Flow ¹	MGD	Report	----	Report	Continuous	Recorder
Effluent Flow – Annual Average ¹	MGD	Report	----	-----	Continuous	Recorder
Effluent Flow ¹	MGD	Report	----	Report	Continuous	Recorder
BOD (<i>May 1- October 31</i>) (<i>November 1 - April 30</i>)	mg/l lbs/day mg/l lbs/day	5.6 50 30 270	7.5 68 45 405	Report Report Report Report	1/Week ²	24-Hour Composite ³
TSS (<i>May 1- October 31</i>) (<i>November 1 - April 30</i>)	mg/l lbs/day mg/l lbs/day	5.6 50 30 270	7.5 68 45 405	Report Report Report Report	1/Week ²	24-Hour Composite ³
PH	S.U.	(See Condition I.A.1.a on page 6)			1/Day	Grab
Fecal Coliform Bacteria ^{4,5}	cfu/100 ml	200	----	400	1/Week	Grab
Escherichia Coli Bacteria ^{4,5}	cfu/100ml	126	----	669	1/Week ⁵	Grab

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type
Ammonia-Nitrogen (May 1- October 31)	mg/l	0.56	0.84	Report	1/week	24-Hour Composite ³
(December 1- April 30)	lbs/day	5.0	7.5	Report	2/Month	
(November 1-30)	mg/l	15.2	----	----	1/week	
	lbs/day	136	----	----		
	mg/l	8.5	----	----		
	lbs/day	76	----	----		
Total Nitrogen ⁶	mg/l	Report	----	----	4/year	24-Hour Composite ³
	lbs/day	Report				
Total Phosphorus (May 1-October 31) ⁷	mg/l	0.2	-----	Report	3/week	24-Hour Composite ³
	lbs/day	Report	-----	Report	1/year	
	lbs/day	0.79 ⁷	-----	-----		
(November 1- April 30) ⁸	mg/l	0.3	1.0	Report	1/week	24-Hour Composite ³
	lbs/day	Report	-----	Report	1/year	
	lbs/day	1.19 ⁸	-----	-----		
Copper ⁹	µg/l	10.3	----	15.3	1/Month	24-Hour Composite ³
LC ₅₀ ^{10, 11, 13}	%	100%			2/year	24-Hour Composite ³
Chronic NOEC ^{10, 12, 13}	%	92%			2/Year	24-Hour Composite ³
Dissolved Oxygen (May 1- October 31)	mg/l	>6.0	>6.0	----	1/week	Grab

Footnotes:

1. Report annual average, monthly average, and the maximum daily influent and effluent flow. The 1.08 MGD flow limit is an annual average of the influent flow, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average influent flow for the reporting month and the monthly average flows of the previous eleven months. For the purpose of calculating the mass of pollutants in the discharge, effluent flow shall be used.
2. Sampling required for influent and effluent.
3. 24-hour composite samples will consist of at least twenty four (24) grab samples taken during one consecutive 24 hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportionally to flow.
4. This is a state certification requirement.
5. The fecal coliform monitoring and limits will be in effect for the period April 1 - October 31. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units (cfu) per 100 ml, nor shall exceed 400 cfu per 100 ml as a daily maximum. The fecal coliform limits and monitoring requirement will end one year from the effective date of the permit.

The Escherichia Coli (E. coli) limits will become effective one year from the effective date of the permit and will be in effect for the period from April 1 - October 31. E. coli discharges shall not exceed a monthly geometric mean of 126 cfu/100 ml, nor shall exceed 669 cfu as a daily maximum. E.coli monitoring frequency will increase to 1/week when the limits become effective. During the first year of the permit, when both fecal coliform and E.coli sampling are required, E. coli samples shall be taken at the same time as a fecal coliform sample.

6. Total Nitrogen shall be determined by performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/l of Total Nitrogen.
7. The 0.79 lbs/day total phosphorus limit is a seasonal average limit for the period *May 1 – October 31*. The seasonal mass total phosphorus load shall be calculated as the arithmetic mean of the six monthly average total phosphorus loads for the months of *May 1 – October 31*, and shall be reported in November of each year.
8. The 1.19 lbs/day total phosphorus limit is a seasonal average limit for the period *November 1 – April 30*. The seasonal mass total phosphorus load shall be calculated as the arithmetic mean of the six monthly average total phosphorus load for the months of *November 1 – April 30*, and shall be reported in May of each year.

9. The minimum level (ML) for copper is defined as 3.0 µg/l. This value is the minimum level for copper using the furnace atomic absorption analytical method. Sample results of 3 µg/l or less shall be reported as zero on the discharge monitoring report.

10. The permittee shall conduct chronic (and modified acute) toxicity tests two times per year. The chronic test may be used to calculate the acute LC₅₀ at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia, only. Toxicity test samples shall be collected during the second week of the months of February and August. The test results shall be submitted by the last day of the month following the completion of the test. The results are due March 31 and September 30, respectively. The tests must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit. If the results of any acute or chronic test fail to comply with the LC₅₀ and Chronic NOEC limits, the permittee must perform an additional test on an effluent sample collected within fourteen days of the date on which failed test sample was collected.

Test Dates	Submit Results By:	Test Species	Acute Limit LC ₅₀	Chronic Limit C-NOEC
February August	March 31 September 30	<u>Ceriodaphnia dubia</u> (daphnid) See Attachment A	≥ 100%	≥ 92%

11. The LC₅₀ is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limits means that a sample of 100 % effluent (no dilution) shall cause no more that 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. The “92% or greater” is defined as a sample which is composed of 92% (or greater) effluent, the remainder being dilution water.

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 an individual approval for use of an alternate dilution water. In lieu of an individual approval 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 of the receiving waters.
 - b. The pH of the effluent shall not be less than 6.5 or greater than 8.3 at any time.
 - c. The discharge shall not cause objectionable discoloration of the receiving waters.
 - d. The effluent shall not contain a visible oil sheen, foam, or floating solids at any time.
 - e. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand. The percent removal shall be based on monthly average values.
 - f. If the average annual influent flow in any calendar year exceeds 80% of the facilities design flow, **the permittee shall submit a report to MassDEP by March 31** of the following calendar year describing its plans for further flow increases and describing how it will maintain compliance with the flow limit and all other effluent limitations and conditions.
 - g. 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:

- a. Pollutants introduced into POTW's by a non-domestic source (user) shall not pass through the POTW or interfere with the operation or performance of the works.

4. Toxics Control

- a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
- b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

5. Numerical Effluent Limitations for Toxicants

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

B. UNAUTHORIZED DISCHARGES

The permittee 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. 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). [Note: SSO Reporting Form (which includes MassDEP Regional Office telephone numbers) for submittal of written report to MassDEP is available on-line at <http://www/mass.gov/dep/water/approvals/surffms.htm#sso>.]

Flow in excess of the plant's treatment capacity which does not receive full secondary treatment is not a permissible bypass under 40 CFR §122.41(m) and is not authorized by this permit.

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. Preventative Maintenance Program

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

3. Infiltration/Inflow Control Plan:

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

The plan shall include:

- An ongoing program to identify and remove sources of infiltration and inflow. 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 infiltration and inflow 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 MassDEP annually, **by March 31**. The summary report shall, at a minimum, include:

- A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year.
- Expenditures for any infiltration/inflow related maintenance activities and corrective actions taken during the previous year
- A map with areas identified for I/I-related investigation/action in the coming year.
- A calculation of the annual average I/I and the maximum month I/I for the reporting year.
- A report of any infiltration/inflow related corrective actions taken as a result of unauthorized discharges reported pursuant to 314 CMR 3.19(20) and reported pursuant to the Unauthorized Discharges section of this permit.

4. Alternate Power Source

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

D. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices 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 (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.

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

E. 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
Central Regional Office - Bureau of Resource Protection
627 Main Street
Worcester, MA 01608

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

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

G. STATE PERMIT CONDITIONS

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

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