



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI

GOVERNOR

DAVID P. LITTELL

COMMISSIONER

November 5, 2006

Mr. Paul Morin  
Sabattus Sanitary District  
P.O. Box 310  
22 Lisbon Road  
Sabattus, ME. 04280

RE: Maine Pollutant Discharge Elimination System Permit #ME0101842  
Maine Waste Discharge License Application #W002624-5L-E-R  
**Final Permit/License**

Dear Mr. Morin:

Enclosed please find a copy of your **final** MEPDES permit/WDL (permit hereinafter) which was approved by the Department of Environmental Protection. You must follow the conditions in the permit to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action."

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

If you have any questions regarding the matter, please feel free to call me at 287-7693.

Sincerely,

Gregg Wood  
Division of Water Quality Management  
Bureau of Land and Water Quality

Enc.

cc: Denise Behr, DEP/CMRO  
Sandy Lao, USEPA

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
RAY BLDG., HOSPITAL ST.

BANGOR  
106 HOGAN ROAD  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 760-3143



**PERMIT SUMMARY (cont'd)**

7. Carrying forward the technology based pH range limitation of 6.0-9.0 standard units.
8. Carrying forward the monthly average reporting requirement for total phosphorus.
9. Carrying forward whole effluent toxicity (WET) and chemical specific (analytical chemistry and priority pollutant) testing but modifying the terms and conditions of the testing requirements based on new rules for said testing that were promulgated by the Department in October of calendar year 2005.
10. Carrying forward the monthly average water quality based mass and concentration limits for copper and lead.

This permitting action is different than the 11/21/01 permitting action in that it is;

11. Establishing a monthly average and daily maximum mass and concentration reporting requirement for orthophosphate.
12. Eliminating the monthly average water quality based limitations for ammonia and arsenic.
13. Establishing monthly average water quality based mass and concentration limits for cadmium.
14. Establishing a requirement to maintain an up-to-date Wet Weather Flow Management Plan and Operations & Maintenance Plan (O&M) for the facility.
15. Establishing a requirement for the submission of an annual certification statement to the Department to qualify for a reduction in surveillance level WET and chemical specific testing.

## CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated October 3, 2006, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 MRSA Section 464(4)(F), will be met, in that:
  - a. Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
  - b. Where high quality waters of the State constitute an outstanding natural resource, that water quality will be maintained and protected;
  - c. The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
  - d. Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and
  - e. Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment (BPT).

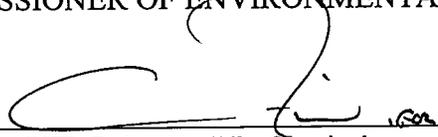
**ACTION**

THEREFORE, the Department APPROVES the application of the SABATTUS SANITARY DISTRICT to discharge up to a monthly average flow of 0.120 million gallons per day (MGD) of secondary treated waste waters to the Sabattus River, Class C, in Sabattus, Maine. The discharges shall be subject to the attached conditions and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. This permit expires five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 7<sup>TH</sup> DAY OF NOVEMBER 2006.

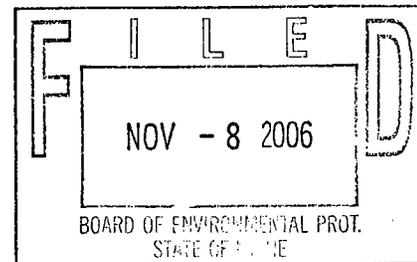
COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY:   
DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application August 9, 2006

Date of application acceptance August 9, 2006



Date filed with Board of Environmental Protection \_\_\_\_\_

This Order prepared by GREGG WOOD, BUREAU OF LAND & WATER QUALITY

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

The permittee is authorized to discharge secondary treated waste waters to the Sabattus River. Such treated waste water discharges shall be limited and monitored by the permittee as specified below.

**SECONDARY TREATED WASTE WATERS - OUTFALL #001A**

Effluent Characteristic	Discharge Limitations						Minimum Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	0.120 MGD [03]	---	Report (MGD)	---	---	---	Continuous [99/99]	Recorder [RC]
Biochemical Oxygen Demand (BOD <sub>5</sub> ) [00310] (June 1 - Sept 30) (October 1 - May 31)	17 lbs/Day 30 lbs/Day [26]	45 lbs/Day 45 lbs/Day [26]	50 lbs/Day 50 lbs/Day [26]	17 mg/L 30 mg/L [19]	45 mg/L 45 mg/L [19]	50 mg/L 50 mg/L [19]	1/Week 1/Week [01/07]	Composite Composite [24]
BOD <sub>5</sub> % Removal [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Total Suspended Solids (TSS) [00530]	30 lbs/Day [26]	45 lbs/Day [26]	50 lbs/Day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Week [01/07]	Composite [24]
TSS % Removal [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	5/Week [05/07]	Grab [GR]
<i>E. coli</i> Bacteria [31633] (May 15 - September 30)	---	---	---	142/100 ml [13]	---	949/100 ml [13]	1/Week [01/07]	Grab [GR]
Total Residual Chlorine [50607]	---	---	---	0.1 mg/L [19]	---	0.28 mg/L [19]	1/Day [01/01]	Grab [GR]

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
pH (Std. Units) [00400]	---	---	---	---	---	6.0-9.0 [12]	1/Day [01/01]	Grab [GR]
Total Phosphorus <sup>(5)</sup> [00665] (June 1 – September 30)	Report lbs/Day [26]	---	Report lbs/Day [26]	Report mg/L [19]	---	Report mg/L [19]	2/Month [02/30]	Composite [24]
Orthophosphate <sup>(6)</sup> [04175] (June 1 – September 30) (calendar year 2007 only)	Report lbs/Day [26]	---	Report lbs/Day [26]	Report mg/L [19]	---	Report mg/L [19]	2/Month [02/30]	Composite [24]
Cadmium (Total) [01027]	0.00089 lbs/Day [26]	---	---	1.3 ug/L [28]	---	---	1/Quarter [01/90]	Composite [24]
Copper (Total) [01042]	0.026 lbs/Day [26]	---	---	39 ug/L [28]	---	---	1/Quarter [01/90]	Composite [24]
Lead (Total) [01051]	0.0046 lbs/Day [26]	---	---	6.9 ug/L [28]	---	---	1/Quarter [01/90]	Composite [24]

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**SURVEILLANCE LEVEL TESTING – Beginning upon permit issuance and lasting through twelve months prior to permit expiration.**

Effluent Characteristic	Discharge Limitations					Monitoring Requirements		
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) <sup>(7)</sup> A-NOEL Ceriodaphnia dubia [TDA3B] Salvelinus fontinalis [TDA6F]	---	---	---	---	---	Report % [23] Report % [23]	1/Year [01/YR] 1/Year [01/YR]	Composite [24] Composite [24]
	---	---	---	---	---	Report % [23] Report % [23]	1/Year [01/YR] 1/Year [01/YR]	Composite [24] Composite [24]
	---	---	---	---	---	Report ug/L [28]	1/Year [01/90]	Composite/Grab [24/GR]
Analytical Chemistry <sup>(8,9)</sup> [51168]	---	---	---	---	---	Report ug/L [28]	1/Year [01/90]	Composite/Grab [24/GR]

**SCREENING LEVEL TESTING – Beginning twelve months prior to permit expiration and every five years thereafter.**

Effluent Characteristic	Discharge Limitations					Monitoring Requirements		
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) <sup>(7)</sup> A-NOEL Ceriodaphnia dubia [TDA3B] Salvelinus fontinalis [TDA6F]	---	---	---	---	---	Report % [23] Report % [23]	1/Quarter [01/90] 1/Quarter [01/90]	Composite [24] Composite [24]
	---	---	---	---	---	Report % [23] Report % [23]	1/Quarter [01/90] 1/Quarter [01/90]	Composite [24] Composite [24]
	---	---	---	---	---	Report ug/L [28]	1/Quarter [01/90]	Composite/Grab [24/GR]
Analytical Chemistry <sup>(8,9)</sup> [51168]	---	---	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite/Grab [24/GR]
Priority pollutant <sup>(9)</sup> [50008]	---	---	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite/Grab [24/GR]

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes:

**Sampling Locations:**

**Influent sampling** for BOD<sub>5</sub> and TSS shall be sampled at a point after the headworks.

**Effluent sampling** for all parameters shall be sampled for all parameters at the end of the chlorine contact chamber on a year-round basis.

Any change in sampling location(s) must be reviewed and approved by the Department in writing.

**Sampling** – Sampling and analysis must be conducted in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

**Reporting** - All detectable analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. See Attachment C of this permit for a Department list of RLs. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit.

1. **Percent removal** - The treatment facility shall maintain a minimum of 85 percent removal of both BOD<sub>5</sub> and TSS. The percent removal shall be based on a monthly average calculation using influent and effluent concentrations. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "NODI-9" on the monthly Discharge Monitoring Report.
2. ***E. coli* bacteria** - Limits are seasonal and apply between May 15<sup>th</sup> and September 30<sup>th</sup> of each calendar year. The Department reserves the right to require disinfection on a year-round basis to protect the health and welfare of the public.
3. ***E. coli* bacteria** – The monthly average limitation is a geometric mean limitation and shall be calculated and reported as such.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes:

4. **Total Residual Chlorine** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. TRC shall be tested using Amperometric Titration or the DPD Spectrophotometric Method. The EPA approved methods are found in Standard Methods for the Examination of Water and Waste Water, (most current approved edition), Method 4500-CL-E and Method 4500-CL-G or U.S.E.P.A. Manual of Methods of Analysis of Water and Wastes.
5. **Total Phosphorus** – See Attachment A of this permit for the Department's sampling and analysis protocol.
6. **Orthophosphate** – Sampling is limited to the summer of calendar year 2007. See Attachment B of this permit for the Department's sampling and analysis protocol.
7. **Whole effluent toxicity (WET) testing** - Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical acute and chronic threshold of 6.9%), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factor of 14.5:1. It is noted the permittee has been granted authorization by the Department to utilize an alternate ambient water source as the diluent when conducted WET testing.
  - a. **Surveillance level testing** - Beginning upon permit issuance and last until 12 months prior to permit expiration, the permittee shall conduct surveillance level WET testing. Acute and chronic tests shall be conducted on the the water flea (Ceriodaphnia dubia) and the brook trout (Salvelinus fontinalis) at a frequency of 1/Year and tests shall be conducted in a different calendar quarter each year such that a test is conducted in all four calendar quarters in the first four years of the term of the permit.
  - b. **Screening level testing** - Beginning 12 months prior to permit expiration and every five years thereafter, the permittee shall conduct screening level WET testing at a minimum frequency of once per calendar quarter (1/Quarter) for four consecutive calendar quarters. Acute and chronic tests shall be conducted on the the water flea (Ceriodaphnia dubia) and the brook trout (Salvelinus fontinalis).

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes:

WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality threshold of 6.9%.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following U.S.E.P.A. methods manuals.

- a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.
- b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

**The permittee is also required to analyze the effluent for the parameters specified in the analytical chemistry on the form in Attachment C of this permit each time a WET test is performed.**

8. **Analytical chemistry** – Refers to a suite of chemical tests that include ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, total cyanide, total lead, total nickel, total silver, total zinc and total residual chlorine.
  - a. **Surveillance level testing** – Beginning upon permit issuance and lasting until 12 months prior to permit expiration, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per year (1/Year). Tests are to be conducted in a different calendar quarter of each year such that a test is conducted in all four calendar quarters in the first four years of the term of the permit.
  - b. **Screening level testing** – Beginning 12 months prior to permit expiration and every five years thereafter, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per calendar quarter (1/Quarter) for four consecutive calendar quarters.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes:

9. **Priority pollutant testing** – Priority pollutants are those parameters listed by Department rule, Chapter 525, Section 4(IV).
  - a. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year). Chapter 530 does not establish routine surveillance level testing priority pollutant testing.

Priority pollutant testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Priority pollutant and analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. See Attachment A of this permit for a list of the Department's reporting levels of detection. All test results, even those detected below the Department's reporting limit shall be reported to the Department. Test results must be submitted to the Department not later than the next DMR required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health AWQC as established in Department rule Chapter 584. For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

All mercury sampling required by this permit or required to determine compliance with interim limitations established pursuant to Department rule Chapter 519, shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

## **SPECIAL CONDITIONS**

### **B. NARRATIVE EFFLUENT LIMITATIONS**

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.
2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.
3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.
4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

### **C. DISINFECTION**

If chlorination is used as a means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized, followed by a dechlorination system if the total residual chlorine (TRC) cannot be met by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall be sufficient to leave a TRC concentration that will effectively reduce bacteria to levels below those specified in Special Condition A, "*Effluent Limitations and Monitoring Requirements*", of this permit.

### **D. TREATMENT PLANT OPERATOR**

The treatment facility must be operated by a person holding a minimum of a **Grade II** certificate [or Registered Maine Professional Engineer] pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

### **E. LIMITATIONS FOR INDUSTRIAL USERS**

Pollutants introduced into the waste water collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

## SPECIAL CONDITIONS

### F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the waste water collection and treatment system from an indirect discharger in a primary industrial category discharging process waste water; and
2. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:
  - (a) the quality and quantity of waste water introduced to the waste water collection and treatment system; and
  - (b) any anticipated impact caused by the change in the quantity or quality of the waste water to be discharged from the treatment system.

### G. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13<sup>th</sup>) day of the month or hand-delivered to a Department Regional Office such that the DMR's are received by the Department on or before the fifteenth (15<sup>th</sup>) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned compliance inspector (unless otherwise specified) to the following address:

Department of Environmental Protection  
Central Maine Regional Office  
Bureau of Land and Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, Maine 04333

## SPECIAL CONDITIONS

### H. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

The permittee is prohibited from introducing septage in the waste water treatment facility for treatment.

### I. WET WEATHER FLOW MANAGEMENT PLAN

The permittee shall maintain an up-to-date Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events. **The permittee shall review their plan annually and record any necessary changes to keep the plan up to date.**

### J. OPERATION & MAINTENANCE (O&M) PLAN

**Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility**, the permittee shall submit an updated O&M Plan to their Department inspector for review and comment. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. **By December 31 of each year (beginning December 31, 2006), or within 90 days of any process changes or minor equipment upgrades**, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department personnel upon request.

### K. TOXICITY REDUCTION EVALUATION (TRE)

**On or before December 1, 2006**, [PCS code 02199] the permittee shall submit to the Department for review and approval, a TRE plan which outlines a strategy to identify the source(s) and action items to be implemented to mitigate or eliminate exceedences of ambient water quality criteria associated with cadmium and lead.

## **SPECIAL CONDITIONS**

### **L. CHAPTER 530(2)(D)(4) CERTIFICATION**

**On or before December 31 of each year [PCS code 95799]** the permittee is required to file a statement with the Department describing the following.

1. Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;
2. Changes in the operation of the treatment works that may increase the toxicity of the discharge; and
3. Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Further, the Department may require that annual testing be re-instituted if it determines that there have been changes in the character of the discharge or if annual certifications described above are not submitted.

### **M. REOPENING OF PERMIT FOR MODIFICATIONS**

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time, and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

### **N. SEVERABILITY**

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.



## Attachment A

### Protocol for Total P Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits

Approved Analytical Methods: EPA 365.2, SM 4500-P B.5 E

**Sample Collection:** The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples, unless a facility's Permit specifically designates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

**Sample Preservation:** During compositing the sample must be at 0-4 degrees C. If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved by the addition of 2 mls of concentrated  $H_2SO_4$  per liter and refrigerated at 0-4 degrees C. The holding time for a preserved sample is 28 days.

**Note:** Ideally, Total P samples are preserved as described above. However, if a facility is using a commercial laboratory then that laboratory may choose to add acid to the sample once it arrives at the laboratory. The Maine DEP will accept results that use either of these preservation methods.

**QA/QC:** Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

Finalized May 2006

## **Attachment B**

### **Protocol for Orthophosphate Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits**

Approved Analytical Methods: EPA 365.2, SM 4500-P.E

**Sample Collection:** The Maine DEP is requesting that orthophosphate analysis be conducted on composite effluent samples unless a facility's Permit specifically indicates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

**Sample Preservation:** During compositing the sample must be at 0-4 degrees C. The sample must be filtered immediately (within 15 minutes) after collection using a pre-washed 0.45-um membrane filter. Be sure to follow one of the pre-washing procedures described in the approved methods. Also, be aware that you will likely want to use a designated suction hose and collection container for the orthophosphate filtering process. If the sample is being sent to a commercial laboratory or analysis cannot be performed within 2 hours after collection then the sample must be kept at 0-4 degrees C. There is a 48-hour holding time for this sample although analysis should be done sooner, if possible.

**QA/QC:** Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

Finalized May 2006

# ATTACHMENT C

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WHOLE EFFLUENT TOXICITY REPORT  
FRESH WATERS**

Facility Name \_\_\_\_\_ MEPDES Permit # \_\_\_\_\_

Facility Representative \_\_\_\_\_ Signature \_\_\_\_\_

By signing this form, I attest that to the best of my knowledge that the information provided is true, accurate, and complete.

Facility Telephone # \_\_\_\_\_ Date Collected \_\_\_\_\_ Date Tested \_\_\_\_\_

mm/dd/yy mm/dd/yy

Chlorinated? \_\_\_\_\_ Dechlorinated? \_\_\_\_\_

Results	% effluent		Effluent Limitations	
	water flea	trout	A-NOEL	C-NOEL
A-NOEL				
C-NOEL				

Data summary	water flea			trout		
	% survival		no. young	% survival		final weight (mg)
	A>90	C>80	>15/female	A>90	C>80	> 2% increase
QC standard						
lab control						
receiving water control						
conc. 1 ( %)						
conc. 2 ( %)						
conc. 3 ( %)						
conc. 4 ( %)						
conc. 5 ( %)						
conc. 6 ( %)						
stat test used						

place \* next to values statistically different from controls for trout show final wt and % incr for both controls

Reference toxicant	water flea		trout	
	A-NOEL	C-NOEL	A-NOEL	C-NOEL
toxicant / date				
limits (mg/L)				
results (mg/L)				

Comments \_\_\_\_\_

**Laboratory conducting test**

Company Name \_\_\_\_\_ Company Rep. Name (Printed) \_\_\_\_\_

Mailing Address \_\_\_\_\_ Company Rep. Signature \_\_\_\_\_

City, State, ZIP \_\_\_\_\_ Company Telephone # \_\_\_\_\_

Report WET chemistry on DEP Form "WET and Analytical Chemistry Results - Fresh Waters, December 2005."

# MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION WET AND ANALYTICAL CHEMISTRY RESULTS FRESH WATERS

Facility Name \_\_\_\_\_ MEPDES Permit # \_\_\_\_\_

Facility Representative \_\_\_\_\_ Signature \_\_\_\_\_

By signing this form, I attest that to the best of my knowledge that the information provided is true, accurate and complete.

Date Collected \_\_\_\_\_  
mm/dd/yy

Date Analyzed \_\_\_\_\_  
mm/dd/yy

Lab ID No. \_\_\_\_\_

Actual Daily Flow \_\_\_\_\_ Actual Monthly Average Flow \_\_\_\_\_ MGD MGD

Analyte	Report Units	Receiving Water Results	Effluent Results	Reporting Level	Method
<b>Analytes Required for Analytical Chemistry</b>					
Ammonia nitrogen	µg/L	*		µg/L	
Total aluminum	µg/L	*		µg/L	
Total arsenic	µg/L	*		µg/L	
Total cadmium	µg/L	*		µg/L	
Total chromium	µg/L	*		µg/L	
Total copper	µg/L	*		µg/L	
Total cyanide	µg/L	*		µg/L	
Total lead	µg/L	*		µg/L	
Total nickel	µg/L	*		µg/L	
Total silver	µg/L	*		µg/L	
Total zinc	µg/L	*		µg/L	
Total hardness	mg/L	*		mg/L	
Total residual chlorine **	mg/L			mg/L	
<b>Additional Analytes Required For WET Chemistry</b>					
Alkalinity	mg/L	*		mg/L	
Total magnesium	mg/L	*		mg/L	
Total Calcium	mg/L	*		mg/L	
Total organic carbon	mg/L	*		mg/L	
Total solids	mg/L			mg/L	
Total suspended solids	mg/L			mg/L	
Specific conductivity	µmhos			µmhos	
pH **	S.U.	*		S.U.	

\* Except for Total Suspended Solids, Total Solids and Conductivity, the receiving water chemistry tests are optional. However, samples of the receiving water should be preserved and saved for the duration of the WET test. In the event of questions about the receiving water's possible effect on the WET results, chemistry tests should then be conducted.  
\*\* WET laboratories may conduct these tests on composite samples as part of their procedures.

Comments \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Laboratory conducting test**

Company Name \_\_\_\_\_ Company Rep. Name (Printed) \_\_\_\_\_

Mailing Address \_\_\_\_\_ Company Rep. Signature \_\_\_\_\_

City, State, ZIP \_\_\_\_\_ Company Telephone # \_\_\_\_\_

Maine Department of Environmental Protection  
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

Facility Name \_\_\_\_\_ MEPDES # \_\_\_\_\_ Pipe # \_\_\_\_\_  
 Facility Representative Signature \_\_\_\_\_  
 To the best of my knowledge this information is true, accurate and complete.  
 Licensed Flow (MGD) \_\_\_\_\_ Flow Avg. for Month (MGD)<sup>(2)</sup> \_\_\_\_\_  
 Acute dilution factor \_\_\_\_\_ Date Sample Collected \_\_\_\_\_  
 Chronic dilution factor \_\_\_\_\_ Date Sample Analyzed \_\_\_\_\_  
 Human health dilution factor \_\_\_\_\_  
 Criteria type: M(marine) or F(fresh) \_\_\_\_\_  
 Laboratory Address \_\_\_\_\_ Telephone \_\_\_\_\_  
 Lab Contact \_\_\_\_\_ Lab ID # \_\_\_\_\_

ERROR WARNING ! Essential facility information is missing. Please check required entries in bold above.

Parameter	Effluent Limits, %		Reporting Limit	Effluent Limits, ug/L		Health <sup>(6)</sup>	Possible Exceedence <sup>(7)</sup>
	Acute	Chronic		Acute <sup>(6)</sup>	Chronic <sup>(6)</sup>		
<b>WHOLE EFFLUENT TOXICITY</b>							
Trout - Acute							
Trout - Chronic							
Water Flea - Acute							
Water Flea - Chronic							
<b>WET CHEMISTRY</b>							
pH (S.U.)							
Specific Conductance (umhos)							
Total Organic Carbon (mg/L)							
Total Solids (mg/L)							
Total Suspended Solids (mg/L)							
Alkalinity (mg/L)							
Total Hardness (mg/L)							
Total Magnesium (mg/L)							
Total Calcium (mg/L)							
<b>ANALYTICAL CHEMISTRY<sup>(8)</sup></b>							
TOTAL RESIDUAL CHLORINE (mg/L)			0.05				
AMMONIA			NA				
ALUMINUM			NA				
ARSENIC			5				
CADMIUM			1				
CHROMIUM			10				
COPPER			3				
CYANIDE			5				
LEAD			3				
NICKEL			5				
SILVER			1				
ZINC			5				

Maine Department of Environmental Protection  
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

PRIORITY POLLUTANTS (4)	Reporting Limit	Effluent Limits		Health (6)	Reporting Limit Check	Possible Exceedence (7)	
		Acute (6)	Chronic (6)			Acute	Chronic
M ANTIMONY	5						
M BERYLLIUM	2						
M MERCURY(4)	0.2						
M SELENIUM	5						
M THALLIUM	4						
A 2,4,6-TRICHLOROPHENOL	3						
A 2,4-DICHLOROPHENOL	5						
A 2,4-DIMETHYLPHENOL	5						
A 2,4-DINITROPHENOL	45						
A 2-CHLOROPHENOL	5						
A 2-NITROPHENOL	5						
A 4,6-DINITRO-O-CRESOL (2-Methyl-4,6-dinitrophenol)	25						
A 4-NITROPHENOL	20						
A P-CHLORO-M-CRESOL (3-methyl-4-chlorophenol)+B80	5						
A PENTACHLOROPHENOL	20						
A PHENOL	5						
BN 1,2,4-TRICHLOROBENZENE	5						
BN 1,2-(O)DICHLOBENZENE	5						
BN 1,2-DIPHENYLHYDRAZINE	10						
BN 1,3-(M)DICHLOBENZENE	5						
BN 1,4-(P)DICHLOBENZENE	5						
BN 2,4-DINITROTOLUENE	6						
BN 2,6-DINITROTOLUENE	5						
BN 2-CHLORONAPHTHALENE	5						
BN 3,3'-DICHLOBENZIDINE	16.5						
BN 3,4-BENZO(B)FLUORANTHENE	5						
BN 4-BROMOPHENYLPHENYL ETHER	2						
BN 4-CHLOROPHENYL PHENYL ETHER	5						
BN ACENAPHTHENE	5						
BN ACENAPHTHYLENE	5						
BN ANTHRACENE	5						
BN BENZIDINE	45						
BN BENZO(A)ANTHRACENE	8						
BN BENZO(A)PYRENE	3						
BN BENZO(G,H)PERYLENE	5						
BN BENZO(K)FLUORANTHENE	3						
BN BIS(2-CHLOROETHOXYMETHANE	5						
BN BIS(2-CHLOROETHYL)ETHER	6						
BN BIS(2-CHLOROISOPROPYL)ETHER	6						
BN BIS(2-ETHYLHEXYL)PHTHALATE	3						
BN BUTYLBENZYL PHTHALATE	5						
BN CHRYSENE	3						
BN DI-N-BUTYL PHTHALATE	5						
BN DI-N-OCTYL PHTHALATE	5						
BN DIBENZO(A,H)ANTHRACENE	5						
BN DIETHYL PHTHALATE	5						
BN DIMETHYL PHTHALATE	5						







**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT**

**AND**

**MAINE WASTE DISCHARGE LICENSE**

**FACT SHEET**

Date: **October 3, 2006**

PERMIT NUMBER: **ME0101842**  
LICENSE NUMBER: **W002624-5L-E-R**

NAME AND ADDRESS OF APPLICANT:

**SABATTUS SANITARY DISTRICT  
P.O. Box 310  
22 Lisbon Road  
Sabattus, ME. 04280**

COUNTY: **Androscoggin County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**22 Lisbon Street  
Sabattus, Maine 04280**

RECEIVING WATER/CLASSIFICATION: **Sabattus/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Paul Morin  
Superintendent, WWTF  
(207) 375 - 8008  
E-mail: [ssdp@adelphia.net](mailto:ssdp@adelphia.net)**

**1. APPLICATION SUMMARY**

- a. Application - The District has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0101842/Waste Discharge License (WDL) #W002624-5L-D-R (permit hereinafter) which was issued on November 12, 2001 and is due to expire on November 12, 2006. The 11/12/01 permit authorized the discharge of up to a monthly average flow of 0.12 million gallons per day (MGD) of secondary treated sanitary waste waters to the Sabattus River, Class C, in Sabattus, Maine.

## 1. APPLICATION SUMMARY (cont'd)

- b. Source Description: The waste water treatment facility receives sanitary waste water flows generated by approximately 1,500 residential users within the District's boundaries. The collection system is a separated system approximately 10 miles in length with forty (40) pump stations and no combined sewer overflow (CSO) points. Two (2) of the pump stations have on-site generators to provide back-up power in the event of a power failure and the remaining thirty eight (38) stations have emergency generator receptacles and manual transfer switches such that back-up power via a portable generator can be supplied to the stations in the event of a power failure. None of the pump stations have constructed emergency overflow/bypasses. The treatment facility is not authorized by this permit to accept septage from local septage haulers.
- c. Waste Water Treatment: Waste water generated in the Town of Sabattus is conveyed to the facility via a sewer collection system containing eight (8) major pump stations and thirty two (32) smaller lift stations. At the facility headworks building, waste water passes through a bar rack for screening, then is pumped (without treatment) through the 0.1 million gallon (MG) former primary (Imhoff) tank. Waste water flow is split between two package treatment units, each of which contain a 75,000 gallon aeration tank for extended diffused aeration, a 37,000 gallon secondary clarifier, and a 48,119 gallon aerobic sludge digester, which also utilizes diffused aeration. Treated effluent is then conveyed to four sand filter units, each measuring 135 feet by 77 feet, for polishing. Seasonally, waste water is then disinfected with sodium hypochlorite in a 187 gallon chlorination mix chamber and an 8,000 gallon chlorine contact tank. Detention time in the contact tank is 19 minutes under peak flow and 95 minutes under average flow conditions. Effluent is then dechlorinated with sodium metabisulfite in a 160 gallon dechlorination chamber. Detention time in the dechlorination chamber is 23 seconds under peak flow and 115 seconds under average flow conditions. Final treated effluent is discharged to the Sabattus River through a 12-inch diameter outfall pipe, which splits into three diffuser pipes positioned six feet apart.

Sludge is pumped from the aerobic sludge digester to a 24,235 gallon sludge storage tank, then to a 7,480 gallon sludge stabilization tank. Sludge is then either conveyed to two on site reed beds (50% of sludge volume) or trucked off site for disposal at a Department approved land spreading site (50% of sludge volume).

See Attachment A of this Fact Sheet for location map and aerial photograph showing the layout of the facility and Attachment B for a schematic of the waste water treatment facility.

## 2. PERMIT SUMMARY

- a. Terms and conditions: This permitting action is similar to the 11/12/01 permitting action in that it is;
1. Carrying forward the monthly average flow limit of 0.12 MGD.

**2. PERMIT SUMMARY (cont'd)**

2. Carrying forward the seasonal monthly average, weekly average and daily maximum technology based mass and concentration limits for biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS).
  3. Carrying forward the monthly average technology based requirement of 85% removal for BOD and TSS.
  4. Carrying forward the daily maximum technology based concentration limit for settleable solids.
  5. Carrying forward the monthly average (geometric mean) and daily maximum water quality based limits for *E. coli* bacteria.
  6. Carrying forward the monthly average technology based and daily maximum water quality based concentration limits for total residual chlorine.
  7. Carrying forward the technology based pH range limitation of 6.0-9.0 standard units.
  8. Carrying forward the monthly average reporting requirement for total phosphorus.
  9. Carrying forward whole effluent toxicity (WET) and chemical specific (analytical chemistry and priority pollutant) testing but modifying the terms and conditions of the testing requirements based on new rules for said testing that were promulgated by the Department in October of calendar year 2005.
  10. Carrying forward the monthly average water quality based mass and concentration limits for copper and lead.
- b. This permitting action is different than the 11/21/01 permitting action in that it is;
1. Establishing a monthly average and daily maximum mass and concentration reporting requirement for orthophosphate.
  2. Eliminating the monthly average water quality based limitations for ammonia and arsenic.
  3. Establishing monthly average water quality based mass and concentration limits for cadmium.
  4. Establishing a requirement to maintain an up-to-date Wet Weather Flow Management Plan and Operations & Maintenance Plan (O&M) for the facility.

## 2. PERMIT SUMMARY (cont'd)

5. Establishing a requirement for the submission of an annual certification statement to the Department to qualify for a reduction in surveillance level WET and chemical specific testing.
- c. History – The most relevant regulatory actions regarding the waste water treatment facility include, but are not limited to, the following:

*August 1, 1990* - The Department issued WDL #W002624-59-C-R for the Sabattus facility which superseded WDL #W002624-45-A-R issued on March 23, 1984.

*August 5, 1994* - The U.S. Environmental Protection Agency (EPA) issued National Pollutant Discharge Elimination system (NPDES) permit #ME0101842 for the Sabattus facility, superseding an earlier NPDES permit issued on March 28, 1986.

*December 11, 1995* – The Department issued a letter to Sabattus stating that 1994 ambient water quality sampling revealed that the Sabattus River was not meeting Class C water standards for dissolved oxygen. The Department noted that at the time of sampling, Sabattus was discharging below licensed BOD limits while river flow was above the 7Q10 flow. The Department anticipated that nutrient loading to the River from Sabattus Pond was significant enough that it was unlikely that additional loading would be allowed in Sabattus' discharge during warmer months. The Department advised Sabattus to investigate alternate waste water disposal methods.

*December 19, 1995* – The Department issued a letter to Sabattus stating that insufficient river water quality data existed to allow reissuance of Sabattus' WDL. Based on existing data, the Department was unable to determine the relationship between Sabattus' discharge and the discharge of algae from Sabattus Pond in the river's failure to attain Class C water standards. The Department noted that additional river monitoring was planned for the future.

*February 5, 1996* – The EPA issued a modification of NPDES permit #ME0101842 to the Sabattus Sanitary District, reducing federal surveillance level WET testing requirements from the four acute and chronic tests per year specified in a NPDES permit issued August 5, 1994, to one chronic test per year.

*April 6, 1999* – The EPA issued a letter to Sabattus stating that beginning with the 1996 NPDES modification, Sabattus' federal testing requirements for Priority Pollutants consist of one test per year.

*September 2, 1999* – The Board of Environmental Protection (BEP) issued #L-19911-36-A-N, approving a new water level and minimum flow regime for Sabattus Pond. This Order carried forward the previously established minimum flow of 2.5 cubic feet per second (CFS) from the Sabattus Pond dam.

## 2. PERMIT SUMMARY (cont'd)

*March 2, 2000* – The Department notified Sabattus that statistical evaluations of WET and chemical specific test results conducted on June 14, 1999, indicated several “reasonable potentials to exceed” ambient water quality standards and licensed mass limits. Pursuant to Department Rule Chapter 530.5, *Surface Water Toxics Control Program*, the Department required Sabattus to submit a Toxic Reduction Evaluation for arsenic to the Department. Sabattus subsequently agreed to monitor for arsenic in its effluent on a quarterly basis.

*May 23, 2000* – The Department administratively modified the 8/1/90 WDL by establishing interim mean and maximum technology based concentration limitations of 4.5 ng/L and 6.8 ng/L, respectively for mercury.

*September 1, 2000* – The Department issued #S-022065-SC-A-N, granting the Sabattus Sanitary District Program Approval for sludge application. The Program Approval establishes sewage sludge monitoring requirements and management protocols, and provides standards for determining when site-specific licenses are necessary for utilization or storage of sewage sludge.

*January 12, 2001* - The Department received authorization from the EPA to administer the NPDES program in Maine. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program.

*March 29, 2001* – The inter-local Sabattus Lake Dam Commission issued a new water level and minimum flow Order for Sabattus Pond. This Order supersedes BEP Order #L-19911-36-A-N, dated September 2, 1999, and carries forward the 2.5 CFS minimum flow requirement.

*November 12, 2001* – The Department issued combination MEPDES permit ME0101842/Waste Discharge License (WDL) #W002624-5L-D-R for a five-year term.

*April 10, 2006* – The Department administratively modified the 11/12/01 permit by establishing applicable monitoring requirement pursuant to a revised Department rule found at Chapter 530, *Surface Water Toxics Control Program*, promulgated on October 12, 2005.

*August 9, 2006* – The District submitted a timely and complete application to the Department to renew the MEPDES permit.

### 3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

### 4. RECEIVING WATER STANDARDS

Maine law, 38 M.R.S.A., Section 467(1)(D)(3) classifies the Sabattus River at the point of discharge as a Class C waterway. Maine law, 38 M.R.S.A., Section 465(4) describes the standards for Class C waters.

### 5. RECEIVING WATER CONDITIONS

A 22.5-mile segment of Sabbattus River is listed in a table entitled, *Category 2: Rivers And Streams Attaining Some Designated Uses, Insufficient Information For Other Uses* in a document entitled The 2002 Integrated Water Quality Monitoring and Assessment Report, published by the Department. In addition, a 12.0-mile segment is listed in the table entitled, *Category 5-A: Rivers And Streams Impaired By Pollutants Other Than Those Listed In 5-B Through 5-D (TMDL Required)*. The Category 5-A table states that 2001 macro-invertebrate data collected by the Department indicates aquatic life standards are impaired. The table states that the impairment is due to insufficient dissolved oxygen and excessive nutrient loading due to Sabattus Lake's eutrophic state and point and non-point source loadings from the municipal waste water treatment facility and agricultural runoff. The Department collected additional ambient water quality data during the summer of calendar year 2002 to supplement a data set collected in August of calendar year 2000. To address the aforementioned water quality issues, the Department is required to prepare a Total Maximum Daily Load (TMDL) report for the Sabattus River for review and approval by the EPA. It is noted a TMDL for Sabattus Pond was completed by the Department on July 16, 2004 and subsequently approved by the EPA on August 12, 2004.

## 5. RECEIVING WATER CONDITIONS (cont'd)

In April 2003, the Department prepared a final document entitled, Sabattus River Data Report, August 2002 Survey, April 2003, DEPLW0591. In May of 2006, the Department prepared a draft document entitled, Revised Sabattus River Assessment and Modeling Report, May 2006, DEPLWxxxx. The Executive Summary of the draft assessment and modeling report contains the following text:

*The Sabattus River is included on Maine's list (section 303d, clean water act, category 5-A) for non-attainment of aquatic life standards, requiring a TMDL (total maximum daily load assessment). This is a revised version of a previous draft (November 2004) and supersedes that draft. Subsequent to the 2004 draft, sediment oxygen demand (SOD) sampling was performed. Also, an updated water quality model became available (QUAL2, version 5), requiring re-calibration and re-assessment. The model focuses on the segment between Sabattus Pond (actually the first bridge below the outlet dam) and Lisbon Center (dam at Mill Street), a distance of approximately 9 miles. The Sabattus Sanitary District (SSD) discharges treated wastewater (0.12 MGD) to the Sabattus River approximately 0.9 mile below Sabattus Pond. During August 2000 and August 2002, water quality surveys were performed to collect data for a water quality model. A water quality model was developed for the Sabattus River.*

*During 2000 and 2002, actual data indicated attainment of dissolved oxygen (DO) standards. 2002 data represent drought conditions. The Lisbon impoundment (Upper Lisbon Dam) stratified during 2002. Standards now include a legislative exemption for DO in stratified impoundments.*

*Modeling indicates non-attainment of Class C daily minimum DO standard of 5 mg/l at critical low streamflow conditions and permit loading. The cause of the non-attainment is chiefly SOD in combination with hydraulic alteration caused by dams on the river. Model simulation indicates that the monthly average DO standard of 6.5 mg/l can only be achieved with a reduction in SOD. Elimination of the point sources alone would not result in attainment of average monthly DO standards although algae growth would be significantly reduced. The model was set up under the assumption that the goals of the Sabattus Pond TMDL were achieved (15 ug/l TP). It can be reasonably expected that with a reduction in nutrients and algae from the lake the SOD would naturally decline over time.*

## 5. RECEIVING WATER CONDITIONS (cont'd)

*Dam removal results in little improvement in daily average DO because any gain in DO from increased reaeration and reduced travel time is offset by a significant reduction in algal growth/concentration (along with associated oxygen input). No dam related reduction in SOD was assumed for the dam removal modeling scenarios but would be expected due to increased flushing. Depending upon the SOD reduction attributable to dam removal, the dam removal scenario may significantly increase DO within the associated impoundments.*

*A major source of existing SOD is likely legacy loading from the pond. Historically, Sabattus Pond has experienced significant algae blooms, ultimately resulting in high organic loading to the river which settles as SOD. The outlet dam has been operated in a manner to flush as much algae/nutrients from the pond into the river. As recently as 2002 the dam has been reconfigured to provide a top release. This release of water from the upper portion of the lake contains the greater concentration of algae. In addition this warmer upper water adversely impacts the river.*

*There are currently no numeric algae bloom standards for rivers. An algae concentration of 12 ug/l (as chl-a) was used to represent the maximum concentration of algae that would maintain the designated use of recreation on and in the water. Criteria of from 8 – 15 ug/l have been suggested for this standard. The 8 ug/l represents the definition of algae blooms for lakes. The 2000 and 2002 data showed chl-a concentrations greater than 12 ug/l. Model simulations indicated a required 85-93% phosphorous removal from the SSD discharge or removal of the Lisbon dam to attain this concentration level under low flow conditions.*

*The minimum required flow at the pond outlet dam is less than 1/2 the flow measured during 2002 under drought conditions. It is recommended that the minimum flow be increased to 6 cfs and/or monitoring be required to better assess the actual low flow. A flow of 2.5 cfs will not attain class C minimum DO standards in the river even without the SSD discharge, the major impact being SOD.*

*The major impact of the SSD discharge is the nutrient load and its impact upon algae growth in the Lisbon impoundment. Any direct (DO uptake) or indirect (SOD) impact from BOD/TSS at current performance loading is small. It is problematic that a reduction in phosphorous to address algae growth at Lisbon may result in lower DO in a natural impoundment above Crowley Rd. due to reduction in algal oxygen input.*

The section entitled "Discussion" in the back of the modeling report has the following text;

*Based upon actual data collection during 2002, the Sabattus River is attaining daily minimum DO standards under low flow, performance loading conditions. This assumes that the river flow during this period is representative of actual low flow (7Q10) and*

## 5. RECEIVING WATER CONDITIONS (cont'd)

*takes into consideration the legislative exemption for DO in stratified impoundments. Modeling for performance loading supports the data in this conclusion if the low DO result for the naturally impounded segment (4.83 mg/l) is evaluated in the context of the low model calibration at this location.*

*Algal standards can only be addressed through nutrient (phosphorous) reductions and/or dam removal. Model simulations indicate a required 85-93% P removal from SSD or removal of the Lisbon dam to attain a maximum algal concentration of 12 ug/l (as chl-a).*

*Model simulation indicates that the monthly average DO standard of 6.5 mg/l can only be achieved with a reduction in SOD. Elimination of the point sources alone would not result in attainment of average monthly DO standards although algae growth would be significantly reduced. The model was set up under the assumption that the goals of the Sabattus Pond TMDL were achieved (15 ug/l TP). It can be reasonably expected that with a reduction in nutrients and algae from the lake the SOD would naturally decline over time.*

*The major impact of the Sabattus Sanitary District discharge is the nutrient discharge and its impact upon algae growth in the Lisbon impoundment. Any direct (DO uptake) or indirect (SOD) impact from BOD/TSS at current performance loading is small. It is problematic that a reduction in P to address algae growth at Lisbon may result in lower DO in the natural impoundment above the falls due to reduction in algal oxygen input. Algae growth in the Lisbon impoundment could be addressed through dam removal.*

It is noted that all fresh water bodies in Maine carry a fish advisory for mercury due to atmospheric transport and deposition. Maine law 38 M.R.S.A., §420 and Department Rule, Chapter 519, *Interim Effluent Limitations and Controls For the Discharge of Mercury*, establishes controls of mercury to surface waters of the State and United States through interim effluent limitations and implementation of pollution prevention plans. On July 10, 2000, the Department administratively modified the permittee's WDL by establishing an average concentration limit of 4.5 ng/L and a daily maximum concentration limit of 6.8 ng/L with a monitoring frequency of 1/Quarter based on a past demonstrated performance evaluation of four mercury test results submitted between August of 1998 and June of 2000.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- a. Flow: The monthly average flow limitation of 0.120 MGD in the previous permitting action is being carried forward in this permitting action and is considered to be representative of the monthly average dry weather design flow of the waste water treatment facility. A review of the Discharge Monitoring Report data for the period January 2004 through June 2006 indicates the monthly average flow discharged has ranged from 0.072 MGD to 0.159 MGD with an arithmetic mean of 0.104 MGD.

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

- b. Dilution Factors – Based on a monthly average flow limit of 0.120 MGD and a receiving water flow of 2.5 cfs<sup>(1)</sup>, the acute, chronic and harmonic mean dilution factors associated with the discharge may be calculated as follows:

$$\text{Dilution Factor} \Rightarrow \frac{\text{River Flow (cfs)}(\text{Conv. Factor}) + \text{Plant Flow (MGD)}}{\text{Plant Flow (MGD)}}$$

$$\text{Acute: } 1\text{Q}10 = 2.5 \text{ cfs} \quad \Rightarrow \frac{(2.5 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 14.5:1$$

$$\text{Chronic: } 7\text{Q}10 = 2.5 \text{ cfs} \quad \Rightarrow \frac{(2.5 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 14.5:1$$

$$\text{Harmonic Mean: } = 7.5 \text{ cfs} \quad \Rightarrow \frac{(7.5 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 41.4:1$$

Footnotes:

- 1) The 7Q10 and 1Q10 critical low flow values for the Sabattus River take into consideration the minimum low flow requirements in the April 16, 2001 Water Level Order approved for Sabattus Lake by the Sabattus Lake Dam Commission and low flow data for the Sabattus River collected by the Department in calendar year 2002.
  - 2) The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the USEPA publication Technical Support Document for Water Quality-Based Toxics Control (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow.
- c. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS): - The previous permitting established year-round monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule Chapter 525(3)(III). The maximum daily BOD5 and TSS concentration limits of 50 mg/L were based on a Department best professional judgment of BPT. All three concentration limits are being carried forward in this permitting action and are applicable on a year-round basis.

As for mass limits, the previous permitting action established seasonal limitations. Technology based limits were derived based on the concentration limits cited above and the monthly average design flow of 0.12 MGD for the facility and were applicable

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

between October 1 and May 31, referred to as the non-summer months. The mass limits were calculated as follows:

Monthly average:  $(0.12 \text{ MGD})(8.34)(30 \text{ mg/L}) = 30 \text{ lbs/day}$   
 Weekly average:  $(0.12 \text{ MGD})(8.34)(45 \text{ mg/L}) = 45 \text{ lbs/day}$   
 Daily maximum:  $(0.12 \text{ MGD})(8.34)(50 \text{ mg/L}) = 50 \text{ lbs/day}$

For the summer months (June 1 – September 30) water quality limits were established as limitations necessary to comply with the 30-day rolling average Class C dissolved oxygen criteria of 6.5 mg/L at 22°C in the receiving water based on a Department best professional judgment given water quality data and modeling at the time of permit issuance. The mass limits were derived as follows:

Monthly average:  $(0.12 \text{ MGD})(8.34)(17 \text{ mg/L}) = 17 \text{ lbs/day}$   
 Weekly average:  $(0.12 \text{ MGD})(8.34)(45 \text{ mg/L}) = 45 \text{ lbs/day}$   
 Daily maximum:  $(0.12 \text{ MGD})(8.34)(50 \text{ mg/L}) = 50 \text{ lbs/day}$

A review of the DMR data for the period January 2002 – December 2005 indicates the facility has discharged as follows:

	<u>BOD Concentration (mg/L)</u>	
	<u>Month Avg.</u>	<u>Daily Max.</u>
<u>Range</u>		
<i>(summer)</i>	3-10 mg/L	5-22 mg/L
<i>(non-summer)</i>	5-20 mg/L	5-41 mg/L
 <u>Arithmetic mean</u>		
<i>(summer)</i>	7 mg/L	12 mg/L
<i>(non-summer)</i>	10 mg/L	16 mg/L
	<u>BOD Mass (lbs/day)</u>	
	<u>Month Avg.</u>	<u>Daily Max.</u>
<u>Range</u>		
<i>(summer)</i>	4-7 lbs/day	3-16 lbs/day
<i>(non-summer)</i>	4-22 lbs/day	6-49 lbs/day
 <u>Arithmetic mean</u>		
<i>(summer)</i>	5 lbs/day	9 lbs/day
<i>(non-summer)</i>	9 lbs/day	16 lbs/day

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

	<u>TSS Concentration (mg/L)</u>	
	<u>Month Avg.</u>	<u>Daily Max.</u>
<u>Range</u>		
<i>(summer)</i>	2-9 mg/L	3-15 mg/L
<i>(non-summer)</i>	3-19 mg/L	3-34 mg/L
<u>Arithmetic mean</u>		
<i>(summer)</i>	6 mg/L	9 mg/L
<i>(non-summer)</i>	6 mg/L	10 mg/L
	<u>TSS Mass (lbs/day)</u>	
	<u>Month Avg.</u>	<u>Daily Max.</u>
<u>Range</u>		
<i>(summer)</i>	3-6 lbs/day	2-11 lbs/day
<i>(non-summer)</i>	2-10 lbs/day	2-21 lbs/day
<u>Arithmetic mean</u>		
<i>(summer)</i>	4 lbs/day	7 lbs/day
<i>(non-summer)</i>	5 lbs/day	9 lbs/day

This permitting action is carrying forward a requirement of 85% removal for BOD and TSS pursuant to Department rule Chapter 525(3)(III)(a&b)(3) except in the circumstances where the monthly average influent concentration is less than 200 mg/L.

Monitoring frequencies for BOD and TSS of 1/Week are being carried forward from the previous permitting action and are based on Department policy for facilities with a monthly average flow limitation greater than 0.10 MGD but less than 0.50 MGD.

- d. Settleable Solids - The previous permit established a daily maximum concentration limit of 0.3 ml/L (considered by the Department to be representative of BPT) with a monitoring frequency of 1/Day. The limitation is being carried forward in this permitting action. A review of the DMR data for the period January 2004 through June 2006 indicates the permittee has reported 0.0 ml/L every month for said period. Given this data, the Department is making a best professional judgment that a monitoring frequency of 5/Week is sufficient to determine on-going compliance with the daily maximum limit.
  
- e. Escherichia coliform (*E. coli.*) bacteria: The previous permitting action established seasonal (May 15 – September 30) monthly average and daily maximum *E. coli* bacteria limits of 142 colonies/100 ml and 949 colonies/100 ml on a Department BPT for facilities that discharge to Class C waterbodies. This permitting action is carrying forward the water quality based limits. A review of the DMR data for the period May 2002 through June 2006 indicates the monthly average *E. coli* bacteria levels discharged have ranged from 0 colonies/100 ml to 47 colonies/100 ml with an arithmetic

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

mean of 6 colonies/100 ml and the daily maximum *E. coli* bacteria levels discharged have ranged from 0 colonies/100 ml to 100 colonies/100 ml with an arithmetic mean of 22 colonies/100 ml.

- f. Total Residual Chlorine - The previous permitting action established a technology based (BPT) limit of 0.1 mg/L and a daily maximum water quality based limit of 0.27 mg/L that are being carried forward in this permitting action. Limits on total residual chlorine (TRC) are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. The Department imposes the more stringent of the water quality or technology based limits in permitting actions. End-of-pipe water quality based concentration thresholds may be calculated as follows:

Parameter	Acute Criteria	Chronic Criteria	Acute Dilution	Chronic Dilution	Acute Limit	Chronic Limit
Chlorine	19 ug/L	11 ug/L	14.5:1	14.5:1	0.27 mg/L	0.16 mg/L

Example calculation: Acute –  $0.019 \text{ mg/L} (14.5) = 0.27 \text{ mg/L}$

To meet the new water quality based thresholds calculated above, the permittee must continue to dechlorinate the effluent prior to discharge. The Department has established daily maximum and monthly average best practicable treatment (BPT) limitations of 0.3 mg/L and 0.1 mg/L respectively, for facilities that need to dechlorinate their effluent unless calculated water quality based limits are lower than the BPT limits. In the case of the permittee's facility, the calculated acute water quality based limit is lower than 0.3 mg/l, thus the daily maximum water quality based limit of 0.27 mg/L is imposed. As for the monthly average, the calculated chronic water quality based limit is higher than the BPT limit of 0.1 mg/L, thus the monthly average BPT limit of 0.1 mg/L is imposed.

A review of the DMR data for the period May 2002 through June 2006 indicates the monthly average concentration has ranged from 0.03 mg/L to 0.07 mg/L with an arithmetic mean of 0.05 mg/L. As for daily maximum TRC concentrations have ranged from 0.06 mg/L to 0.27 mg/L with an arithmetic mean of 0.13 mg/L. The DMR data indicates TRC limitations have never been violated.

- g. pH Range- The previous permitting action established a pH range limitation of 6.0 – 9.0 standard units pursuant to a Department rule found at Chapter 525(3)(III)(c). The limits are considered BPT and are being carried forward in this permitting action. A review of the DMR data indicates the limitation range has never been violated.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

- h. Mercury: Pursuant to Maine law, 38 M.R.S.A. §420 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL # W002624-5L-D-R by establishing interim monthly average and daily maximum effluent concentration limits of 4.5 parts per trillion (ppt) and 6.8 ppt, respectively, and a minimum monitoring frequency requirement of four tests per year for mercury. The interim mercury limits were scheduled to expire on October 1, 2001. However, effective June 15, 2001, the Maine Legislature enacted Maine law, 38 M.R.S.A. §413, sub-§11 specifying that interim mercury limits and monitoring requirements remain in effect. It is noted that the mercury effluent limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as the limits and monitoring frequencies are regulated separately through Maine law, 38 M.R.S.A. §413 and Department rule Chapter 519. The interim mercury limits remain in effect and enforceable and modifications to the limits and/or monitoring frequencies will be formalized outside of this permitting document pursuant to Maine law, 38 M.R.S.A. §413 and Department rule Chapter 519.
- i. Whole Effluent Toxicity (WET) & Chemical-Specific Testing: Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants* set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET, priority pollutant and analytical chemistry testing, as required by Chapter 530, is included in this permit in order to fully characterize the effluent. This permit also provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment and receiving water characteristics.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Priority pollutant and analytical chemistry testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria as established in Chapter 584.

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

Chapter 530 establishes four categories of testing requirements based predominately on the chronic dilution factor. The categories are as follows:

Level I – chronic dilution factor of <20:1.

Level II – chronic dilution factor of  $\geq 20:1$  but <100:1.

Level III – chronic dilution factor  $\geq 100:1$  but <500:1 or >500:1 and  $Q \geq 1.0$  MGD

Level IV – chronic dilution >500:1 and  $Q \leq 1.0$  MGD

Department rule Chapter 530 (2)(D) specifies the criteria to be used in determining the minimum monitoring frequency requirements for WET, priority pollutant and analytical chemistry testing. Based on the Chapter 530 criteria, the permittee's facility falls into the Level I frequency category as the facility has a chronic dilution factor  $\leq 20:1$ .

Chapter 530(2)(D)(1) specifies that routine surveillance and screening level testing requirements are as follows:

Screening level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
I	4 per year	1 per year	4 per year

Surveillance level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
I	2 per year	Not required	4 per year

A review of the data on file with the Department for the permittee indicates that to date, they have fulfilled the WET and chemical-specific testing requirements of the former Chapter 530.5. See Attachment C of this Fact Sheet for a summary of the WET test results and Attachment D of this Fact Sheet for a summary of the chemical-specific test dates.

WET test evaluation

Chapter 530 §(3)(E) states *“For effluent monitoring data and the variability of the pollutant in the effluent, the Department shall apply the statistical approach in Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control" (USEPA Publication 505/2-90-001, March, 1991, EPA, Office of Water, Washington, D.C.) to data to determine whether water-quality based effluent limits must be included in a waste discharge license. Where it is determined through this approach that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.”*

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

On August 16, 2006, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department in accordance with the statistical approach cited above. The statistical evaluation for WET species specified in Chapter 530 indicates there are no exceedences or reasonable potential to exceed the critical acute or chronic water quality thresholds of 6.9% (mathematical inverse of the dilution factor of 14.5:1). Therefore, no WET limits are being established in this permitting action.

Monitoring frequencies for WET testing established in this permitting action are based on the Chapter 530 rule. Chapter 530(2)(D)(3)(d) states in part that for Level I facilities "... *may reduce surveillance testing to one WET or specific chemical series per year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E)*". Based on the results of the 8/16/06 statistical evaluation, the permittee qualifies for the testing reduction. Therefore, this permit action establishes a surveillance level WET testing requirements as follows:

Beginning upon permit issuance and lasting through 12 months prior to permit expiration

Level	WET Testing
I	1 per year for the brook trout 1 per year for the water flea

Department rule Chapter 530 (2)(D)(1) specifies that screening level testing is to be established as follows:

Beginning 12 months prior to permit expiration

Level	WET Testing
I	4 per year

Chapter 530 (2)(D) states:

(4) *All dischargers having waived or reduced testing must file statements with the Department on or before December 31 of each year describing the following.*

- (a) *Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;*
- (b) *Changes in the operation of the treatment works that may increase the toxicity of the discharge; and*
- (c) *Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.*

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

Special Condition L, *Chapter 530 (2)(D)(4) Certification*, of this permitting action requires the permittee to file an annual certification with the Department. It is noted that on September 26, 2006, the SSD submitted its first annual certification to the Department.

If future WET testing results indicate the discharge exceeds the critical acute and or chronic water quality threshold, this permit will be reopened pursuant to Special Condition M, *Reopening of Permit For Modification*, of this permit to establish applicable limitations and monitoring frequencies and require the permittee to submit a toxicity reduction evaluation (TRE) to the Department for review and approval.

Chemical specific testing evaluation

As with WET test results, on August 16, 2006, the Department conducted a statistical evaluation on the most recent 60 months of chemical specific test results on file with the Department in accordance with the statistical approach outlined in Chapter 530. The statistical evaluation indicates that the test results listed below have a reasonable potential to exceed the chronic ambient water quality criteria (AWQC). The evaluation also indicates that results for cadmium and lead exceed the chronic AWQC. It is noted all other parameters evaluated do not exceed or have a reasonable potential to exceed acute, chronic or human health AWQC.

<u>Date</u>	<u>Parameter</u>	<u>Test result</u>	<u>AWQC Criteria</u>	<u>RP threshold<sup>(1)</sup></u>
5/28/03	Cadmium	2.0 ug/L	Chronic-0.080 ug/L	0.45 ug/L
5/28/03	Copper	16.0 ug/L	Chronic-2.36 ug/L	13 ug/L
5/28/03	Lead	28 ug/L	Chronic - 0.41 ug/L	2.3 ug/L

Footnotes:

- (1) RP factor of 2.0 for cadmium was based on a n=7 test results.  
RP factor of 2.0 for copper based on a n=7 test results.  
RP factor of 2.0 for lead based on a n=7 test results.

Chapter 530 §3 states, *"In determining if effluent limits are required, the Department shall consider all information on file and effluent testing conducted during the preceding 60 months. However, testing done in the performance of a Toxicity Reduction Evaluation (TRE) approved by the Department may be excluded from such evaluations."*

Chapter 530 §4(C), states *"The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department*

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

*shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent*

*ambient water quality conditions.” The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations. The Department has limited information on the background levels of metals in the water column of the Sabattus River. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.*

Chapter 530 4(E), states “*In allocating assimilative capacity for toxic pollutants, the Department shall hold a portion of the total capacity in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The unallocated reserve must be reviewed and restored as necessary at intervals of not more than five years. The water quality reserve must be not less than 15% of the total assimilative quantity*”. Therefore, the Department is reserving 15% of the applicable water quality criteria in the calculations of this permitting action. It is noted the SSD is the only discharger to the Sabattus River. Statistical evaluations conducted by the Department based on a single source, with consideration of reserve and background, are adequate to meet the intent of Chapter 530 and protect water quality standards.

Chapter 530 §(3)(E) states “*... that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.*”

Chapter 530 §(3)(D) states “*Expression of effluent limits. Where the need for effluent limits has been determined, limits derived from acute water quality criteria must be expressed as daily maximum values. Limits derived from chronic or human health criteria must be expressed as monthly average values.*” Therefore, this permit establishes monthly average (chronic) end-of-pipe (EOP) mass and concentrations limits for cadmium, copper and lead. The derivation for these limits is as follows:

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**Cadmium:**

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]  
Chronic AWQC = 0.08 ug/L

Chronic EOP = [14.5 x 0.75 x 0.08 ug/L] + [0.25 x 0.08 ug/L] = 0.89 ug/L

Based on a permitted flow of 0.12 MGD, EOP mass limits are as follows:

<u>Parameter</u>	<u>Calculated EOP Concentrations</u>	<u>Month Avg. Mass Limit</u>
Cadmium (Chronic)	0.89 ug/L	0.00089 #/day

Example Calculation: Chronic-  $\frac{(0.89 \text{ ug/L})(8.34)(0.12 \text{ MGD})}{1000 \text{ ug/mg}} = 0.00089 \text{ #/day}$

**Copper:**

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]

Chronic AWQC = 2.36 ug/L

Chronic EOP = [14.5 x 0.75 x 2.36 ug/L] + [0.25 x 2.36 ug/L] = 26 ug/L

Based on a permitted flow of 0.12 MGD, EOP mass limits are as follows:

<u>Parameter</u>	<u>Calculated EOP Concentrations</u>	<u>Month Avg. Mass Limit</u>
Copper (Chronic)	26 ug/L	0.026 #/day

Example Calculation: Chronic-  $\frac{(26 \text{ ug/L})(8.34)(0.12 \text{ MGD})}{1000 \text{ ug/mg}} = 0.026 \text{ #/day}$

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**Lead**

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]

Chronic AWQC = 0.41 ug/L

Chronic EOP = [14.5 x 0.75 x 0.41 ug/L] + [0.25 x 0.41 ug/L] = 4.6 ug/L

Based on a permitted flow of 0.12 MGD, EOP mass limits are as follows:

<u>Parameter</u>	<u>Calculated EOP Concentrations</u>	<u>Month Avg. Mass Limit</u>
Lead(Chronic)	4.6 ug/L	0.0046 #/day

Example Calculation: Chronic-  $\frac{(4.6 \text{ ug/L})(8.34)(0.12 \text{ MGD})}{1000 \text{ ug/mg}} = 0.0046 \text{ \#/day}$

Chapter 530 §(3)(D)(1) states “For specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded. With regard to concentration limits, the Department may review past and projected flows and set limits to reflect proper operation of the treatment facilities that will keep the discharge of pollutants to the minimum level practicable.”

As not to penalize the permittee for operating at flows less than the permitted flow, the Department is establishing concentration limits based on a factor of 1.5. Therefore, concentration limits for the parameter of concern in this permit are as follows:

<u>Parameter</u>	<u>Calculated EOP Concentration</u>	<u>Monthly Avg. Conc. Limit</u>
Cadmium	0.89 ug/L	1.3 ug/L
Copper	26 ug/L	39 ug/L
Lead	4.6 ug/L	6.9 ug/L

Chapter 530 does not establish specific monitoring frequencies for parameters that exceed or have a reasonable potential to exceed AWQC. This permitting action is establishing the monitoring requirement frequencies for cadmium, copper and lead based

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

on a best professional judgment given the timing, frequency and severity of the exceedence or reasonable to exceed AWQC. To be consistent with the Department's 4/10/06 permit modification, the Department is carrying forward a monitoring frequency of 1/quarter for all three parameters.

Chapter 530 §(3)(C) states in part *"If these data indicate that the discharge is causing an exceedence of applicable water quality criteria, then: (1) the licensee must, within 45 days of becoming aware of an exceedence, submit a TRE plan for review and approval and implement the TRE after Department approval; and (2) the Department must, within 180 days of the Department's written approval of the TRE plan, modify the waste discharge license to specify effluent limits and monitoring requirements necessary to control the level of pollutants and meet receiving water classification standards."*

This permitting action serves as notification to the District that the Department has test results on file for cadmium and lead that exceed the chronic AWQC and a TRE is required to be submitted to the Department on or before October 1, 2006. See Special Condition K, *Toxicity Reduction Evaluation (TRE)* of this permitting action.

Monitoring frequencies for priority pollutant and analytical testing established in this permitting action are based on the Chapter 530 rule. Chapter 530(2)(D)(3)(d) states in part that for Level I facilities *"... may reduce surveillance testing to one WET or specific chemical series per year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E)"*. Based on the results of the 8/16/06 statistical evaluation, the permittee qualifies for the testing reduction. Therefore, this permit action establishes a surveillance level analytical testing (with the exception of cadmium, copper and lead) requirements as follows:

Beginning upon permit issuance and lasting through 12 months prior to permit expiration

Level	Priority pollutant testing	Analytical chemistry
I	Not required	1 per year

Department rule Chapter 530 (2)(D)(1) specifies that screening level testing is to be establishes for analytical and priority pollutant testing requirements as follows:

Beginning 12 months prior permit expiration

Level	Priority pollutant testing	Analytical chemistry
I	1 per year	4 per year

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Chapter 530 (2)(D) states:

*(4) All dischargers having waived or reduced testing must file statements with the Department on or before December 31 of each year describing the following.*

- (a) Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;*
- (b) Changes in the operation of the treatment works that may increase the toxicity of the discharge; and*
- (c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.*

As with WET testing, Special Condition L, *Chapter 530 (2)(D)(4) Certification*, of this permitting action requires the permittee to file an annual certification with the Department.

In the event future statistical evaluations demonstrate that the reasonable potential to exceed AWQC is no longer applicable for copper or that the result(s) of concern for cadmium, copper and lead fall outside the 60 month evaluation period, this permit may be reopened pursuant to Special Condition M, *Reopening of Permit For Modifications*, of this permit to remove the limitation(s) and or reduce the monitoring requirement(s). It is noted however that if future priority or analytical test results indicates the discharge exceeds acute, chronic or human health AWQC, this permit will be reopened pursuant to Special Condition M, *Reopening of Permit For Modification*, of this permit to establish applicable limitations and monitoring frequencies and require the permittee to submit a toxicity reduction evaluation (TRE) to the Department for review and approval.

## 7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing and designated uses of the receiving water uses will be maintained and protected and the discharge will not cause or contribute to failure of the receiving water to meet assigned classification.

## 8. PUBLIC COMMENTS

Public notice of this application was made in the Lewiston Sun Journal newspaper on August 2, 2006. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

## 9. DEPARTMENT CONTACTS

Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood  
Division of Water Quality Management  
Bureau of Land and Water Quality  
Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333-0017  
E-mail: [gregg.wood@maine.gov](mailto:gregg.wood@maine.gov)

Telephone: (207) 287-7693

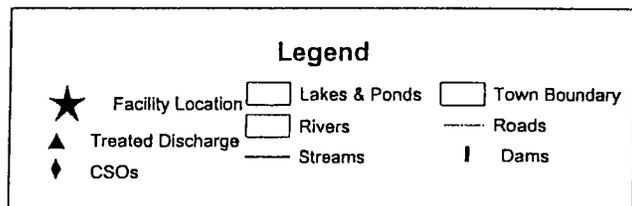
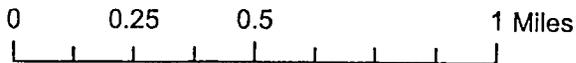
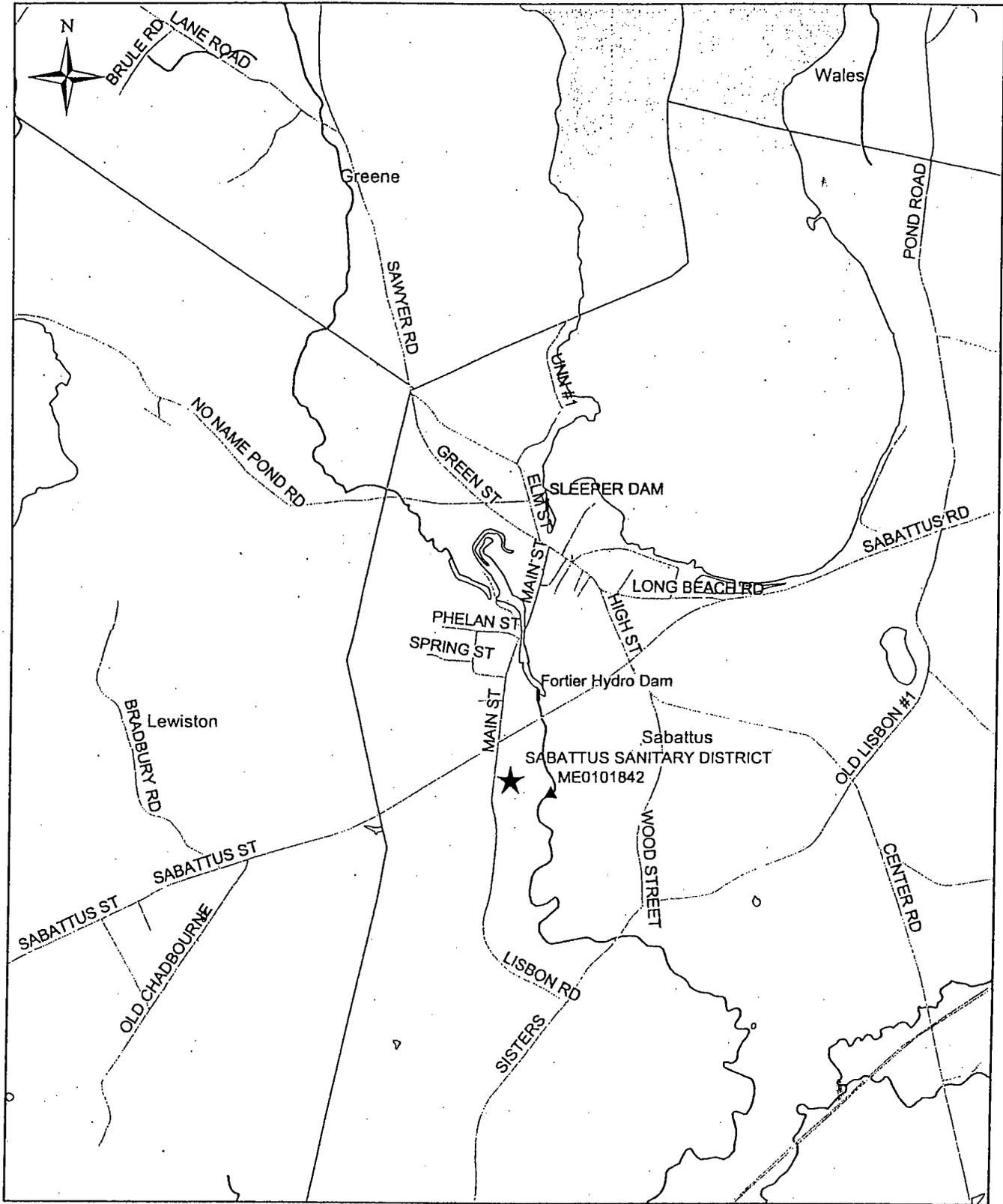
## 10. RESPONSE TO COMMENTS

During the period of October 3, 2006 through the date of issuance of this permit, the Department solicited comments on the proposed draft permit for the discharge from the permittee's facility. The Department did not receive comments from the permittee, state or federal agencies, or interested parties that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.



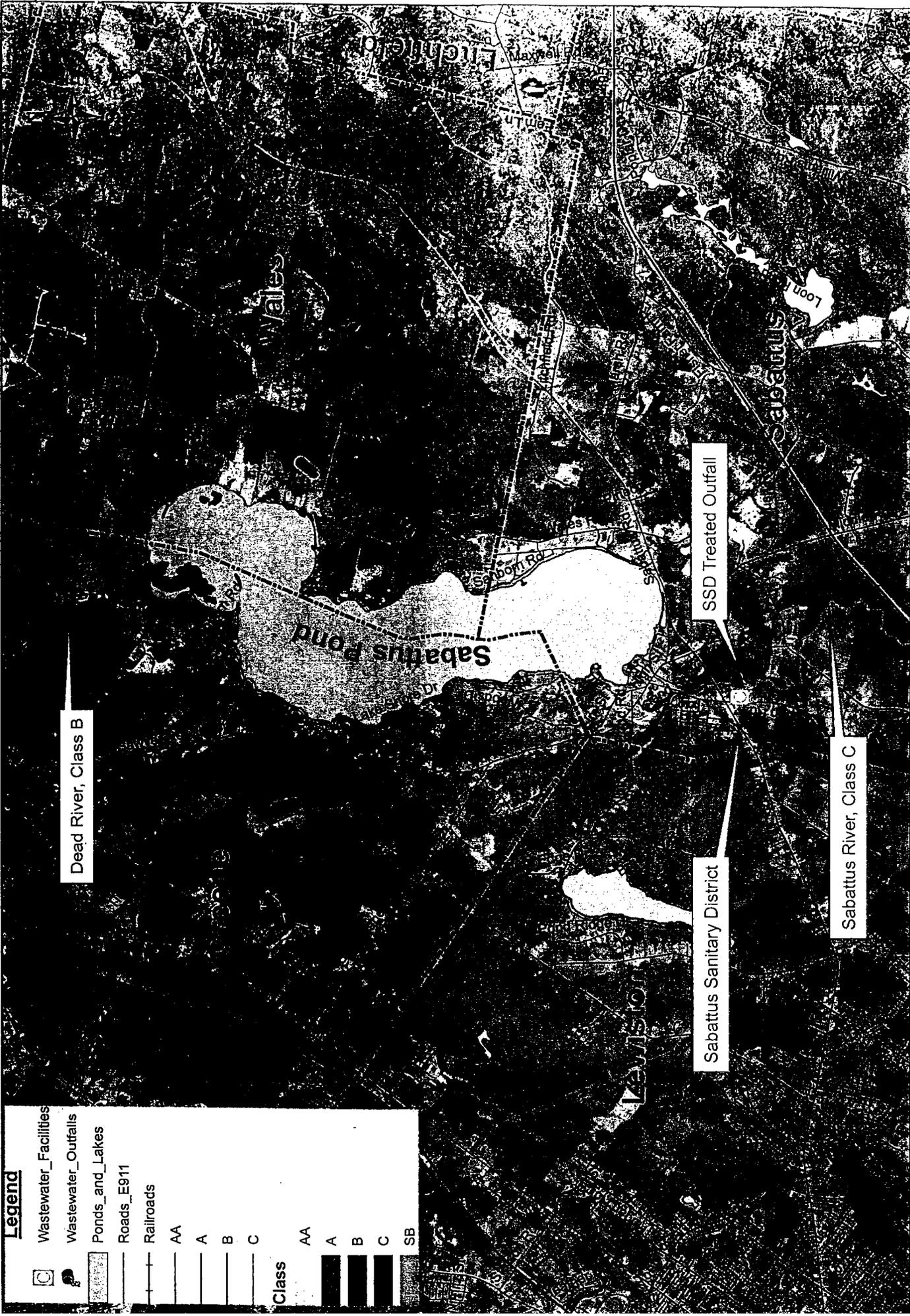
ATTACHMENT A

# Wastewater Licensing Information





Map created by Maine DEP  
August 21, 2006



**Legend**

- Wastewater\_Facilities
- Wastewater\_Outfalls
- Ponds\_and\_Lakes
- Roads\_E911
- Railroads
- AA
- A
- B
- C

**Class**

- AA
- A
- B
- C
- SB

Dead River, Class B

SSD Treated Outfall

Sabattus Sanitary District

Sabattus River, Class C

0 1.25 2.5 5 Miles

# Sabattus Sanitary District Area Map, Sabattus, Maine





**Legend**

-  Wastewater\_Facilities
-  Wastewater\_Outfalls
-  AA
-  A
-  B
-  C
-  Roads\_E911



**Sabattus Sanitary District Detail, Sabattus, Maine**

Map created by Maine DEP  
August 21, 2006



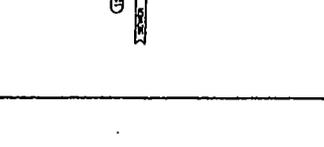
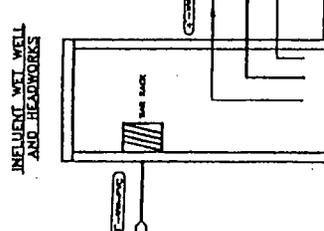
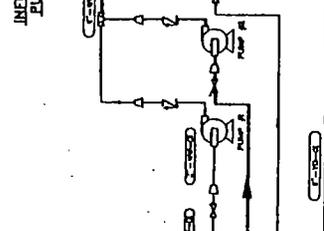
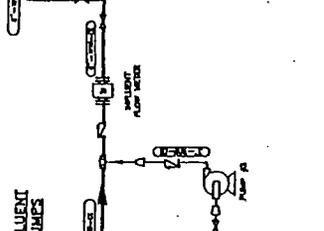
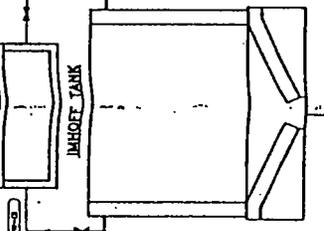
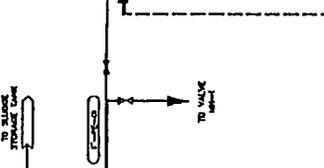
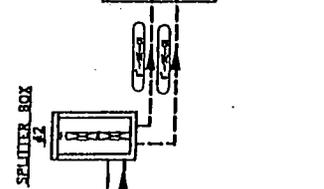
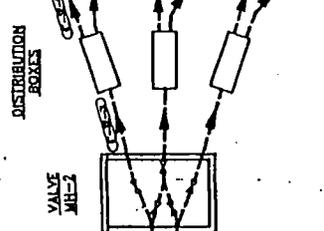
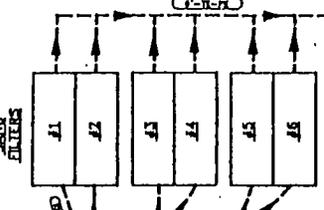


# **ATTACHMENT B**

PRELIMINARY TREATMENT

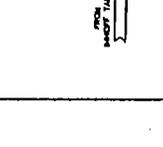
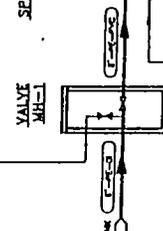
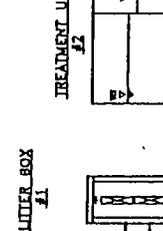
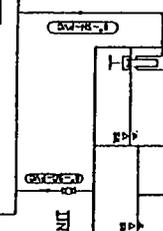
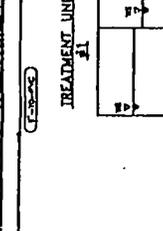
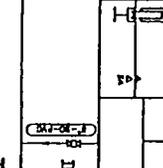
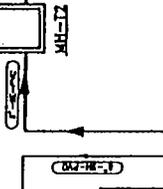
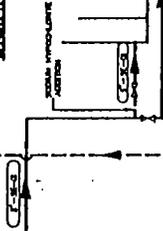
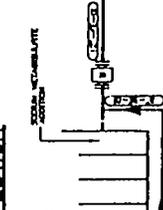
PRIMARY TREATMENT

EFFLUENT POLISHING



SECONDARY TREATMENT

DISINFECTION



PROCESS FLOW DIAGRAM  
SABATTUS WWTF

FIGURE I-1

WOODWARD & CURRAN INC.  
CONSULTING ENGINEERS

# ATTACHMENT C

Species	Test	Test Result %	Sample Date
FATHEAD	A_NOEL	100	09/01/1994
FATHEAD	C_NOEL	100	09/01/1994
FATHEAD	LC50	>100	09/01/1994
WATER FLEA	A_NOEL	100	09/01/1994
WATER FLEA	C_NOEL	100	09/01/1994
WATER FLEA	LC50	>100	09/01/1994
TROUT	A_NOEL	100	12/01/1994
TROUT	C_NOEL	100	12/01/1994
TROUT	LC50	>100	12/01/1994
WATER FLEA	A_NOEL	100	12/01/1994
WATER FLEA	C_NOEL	100	12/01/1994
WATER FLEA	LC50	>100	12/01/1994
FATHEAD	A_NOEL	100	03/22/1995
FATHEAD	C_NOEL	100	03/22/1995
FATHEAD	LC50	>100	03/22/1995
WATER FLEA	A_NOEL	100	03/22/1995
WATER FLEA	C_NOEL	50	03/22/1995
WATER FLEA	LC50	>100	03/22/1995
TROUT	A_NOEL	100	06/12/1995
TROUT	C_NOEL	100	06/12/1995
TROUT	LC50	>100	06/12/1995
WATER FLEA	A_NOEL	100	06/12/1995
WATER FLEA	C_NOEL	100	06/12/1995
WATER FLEA	LC50	>100	06/12/1995
TROUT	A_NOEL	100	05/13/1996
TROUT	C_NOEL	100	05/13/1996
TROUT	LC50	>100	05/13/1996
WATER FLEA	A_NOEL	100	05/13/1996
WATER FLEA	C_NOEL	100	05/13/1996
WATER FLEA	LC50	>100	05/13/1996
TROUT	A_NOEL	25.0	05/06/1997
TROUT	C_NOEL	25.0	05/06/1997
TROUT	LC50	36.8	05/06/1997
WATER FLEA	A_NOEL	100	05/06/1997
WATER FLEA	C_NOEL	25.0	05/06/1997
WATER FLEA	LC50	54.6	05/06/1997
TROUT	A_NOEL	100	07/08/1998
TROUT	C_NOEL	100	07/08/1998
TROUT	LC50	>100	07/08/1998
WATER FLEA	A_NOEL	100	07/08/1998
WATER FLEA	C_NOEL	100	07/08/1998
WATER FLEA	LC50	>100	07/08/1998

Species	Test	Test Result %	Sample Date
TROUT	A_NOEL	100	06/14/1999
TROUT	C_NOEL	100	06/14/1999
TROUT	LC50	>100	06/14/1999
WATER FLEA	A_NOEL	100	06/14/1999
WATER FLEA	C_NOEL	6.9	06/14/1999
WATER FLEA	LC50	>100	06/14/1999
TROUT	A_NOEL	100	06/12/2000
TROUT	C_NOEL	100	06/12/2000
TROUT	LC50	>100	06/12/2000
WATER FLEA	A_NOEL	100	06/12/2000
WATER FLEA	C_NOEL	100	06/12/2000
WATER FLEA	LC50	>100	06/12/2000
FATHEAD	A_NOEL	100	06/19/2002
FATHEAD	C_NOEL	100	06/19/2002
FATHEAD	LC50	>100	06/19/2002
WATER FLEA	A_NOEL	100	06/19/2002
WATER FLEA	C_NOEL	50	06/19/2002
WATER FLEA	LC50	>100	06/19/2002
FATHEAD	A_NOEL	>100	05/28/2003
FATHEAD	C_NOEL	100	05/28/2003
FATHEAD	LC50	>100	05/28/2003
WATER FLEA	A_NOEL	>100	05/28/2003
WATER FLEA	C_NOEL	100	05/28/2003
WATER FLEA	LC50	>100	05/28/2003
FATHEAD	A_NOEL	100	05/03/2004
FATHEAD	C_NOEL	<6.91	05/03/2004
FATHEAD	LC50	>100	05/03/2004
TROUT	A_NOEL	>100	05/03/2004
TROUT	C_NOEL	100	05/03/2004
TROUT	LC50	>100	05/03/2004
WATER FLEA	A_NOEL	>100	05/03/2004
WATER FLEA	C_NOEL	100	05/03/2004
WATER FLEA	LC50	>100	05/03/2004
TROUT	A_NOEL	>100	11/02/2005
TROUT	C_NOEL	100	11/02/2005
TROUT	LC50	>100	11/02/2005
WATER FLEA	A_NOEL	>100	11/02/2005
WATER FLEA	C_NOEL	100	11/02/2005
WATER FLEA	LC50	>100	11/02/2005

# **ATTACHMENT D**

**Sample Date: 06/08/2001**

Plant flows provided

Total Tests:	117	mon. (MGD) = 0.075
Missing Compounds:	7	day (MGD) = 0.083
Tests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

---

**Sample Date: 06/19/2002**

Plant flows provided

Total Tests:	140	mon. (MGD) = 0.087
Missing Compounds:	1	day (MGD) = 0.089
Tests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

---

**Sample Date: 05/28/2003**

Plant flows provided

Total Tests:	142	mon. (MGD) = 0.092
Missing Compounds:	1	day (MGD) = 0.106
Tests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

---

**Sample Date: 05/03/2004**

Plant flows provided

Total Tests:	123	mon. (MGD) = 0.108
Missing Compounds:	1	day (MGD) = 0.055
Tests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

---

**Sample Date: 06/13/2005**

Plant flows provided

Total Tests:	123	mon. (MGD) = 0.111
Missing Compounds:	1	day (MGD) = 0.094
Tests With High DL:	0	
M = 0	V = 0	A = 0
BN = 0	P = 0	other = 0

---

PP Data for "Hits" Only

**ABATTUS**

ABATTUS RIVER

---

**RSENIC**  
DL = 5 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
2.600000	OK	05/28/2003	08/06/2003
2.600000	OK	06/13/2005	09/12/2005
2.600000	OK	06/08/2001	07/25/2001
2.800000	OK	05/03/2004	06/28/2004
3.000000	OK	06/19/2002	09/23/2002

---

**ADMIUM**  
DL = 1 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
2.000000	OK	05/28/2003	01/15/2004
2.000000	OK	06/12/2001	10/19/2001
< 0.500000	OK	05/03/2004	06/28/2004
< 0.500000	OK	05/28/2003	08/06/2003
< 0.500000	OK	06/19/2002	09/23/2002
< 0.500000	OK	06/13/2005	09/12/2005
< 0.500000	OK	06/08/2001	07/25/2001
< 1.000000	OK	06/19/2002	06/22/2005
< 1.000000	OK	11/02/2005	02/21/2006

---

**HLORINE**  
o MDL

Conc, ug/l	MDL	Sample Date	Date Entered
500.000000	NS	06/19/2002	08/05/2002
< 50.000000	NS	06/12/2001	10/19/2001
< 50.000000	NS	11/02/2005	02/21/2006
< 50.000000	NS	05/28/2003	01/15/2004

---

**OPPER**  
DL = 3 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
6.100000	OK	05/28/2003	08/06/2003
8.400000	OK	06/19/2002	08/05/2002
11.500000	OK	06/19/2002	09/23/2002
13.000000	OK	06/12/2001	10/19/2001
13.100000	OK	05/03/2004	06/28/2004
13.300000	OK	06/13/2005	09/12/2005
16.000000	OK	05/28/2003	01/15/2004
17.000000	OK	11/02/2005	02/21/2006
17.400000	OK	06/08/2001	07/25/2001

---

**EAD**  
DL = 3 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
0.800000	OK	06/08/2001	07/25/2001
1.000000	OK	06/13/2005	09/12/2005
1.000000	OK	06/19/2002	09/23/2002
5.000000	OK	06/12/2001	10/19/2001
10.000000	OK	11/02/2005	02/21/2006
28.000000	OK	05/28/2003	01/15/2004
< 1.000000	OK	05/03/2004	06/28/2004
< 1.000000	OK	05/28/2003	08/06/2003
< 2.600000	OK	06/19/2002	08/05/2002

---