STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

Arthur Faucher
Town of Madawaska
328 St. Thomas Street, Suite 101
Madawaska, Maine 04756

November 13, 2003

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit # ME0102369
Maine Waste Discharge License (WDL) Application # W002602-5L-D-R
Final License

Dear Mr. Faucher:

Enclosed please find a copy of your **final** MEPDES permit/WDL (permit hereinafter) which was approved by the Department of Environmental Protection. Please read the permit and its attached conditions carefully. You must follow the conditions in the order 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.*"

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMR) may not reflect the revisions in this permitting action for several months however, you are required to report applicable test results for parameters required by this permitting action that do not appear on the DMR. Please see the attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding this matter, please feel free to call me at 287-7658.

Sincerely,

David Silver
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc. Sean Bernard, DEP/NMRO
Ted Lavery, USEPA

WDS:W002602

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
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) 764-1507

web site: www.state.me.us/dep

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DMR Lag
(reprinted from April 2003 O&M Newsletter)

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months. This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.
2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.
3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

TOWN OF MADAWASKA	)	MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	)	ELIMINATION SYSTEM PERMIT
MADAWASKA, AROOSTOOK COUNTY	)	AND
ME0101681	)	WASTE DISCHARGE LICENSE
W002602-5L-D-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq. and Maine Law 38 M.R.S.A., Section 414-A et seq., and applicable regulations, the Department of Environmental Protection (the Department) has considered the application of the TOWN OF MADAWASKA (TOWN), with its supportive data, agency review comments, and other related material on file and finds the following facts:

APPLICATION SUMMARY

The applicant has applied to the Department for renewal of Department Waste Discharge License (WDL) #W002602-46-C-R which was issued on July 10, 1997 and expired on July 10, 2001. The July 10, 1997 WDL authorized the discharge of up to a monthly average flow of 0.60 million gallons per day (MGD) of secondary treated sanitary waste water to the St. John River, Class C, in Madawaska, Maine. The July 10, 1997 WDL also authorized the discharge of untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the St. John River and its tributaries in Madawaska.

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From this point forward, the program will be referenced as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and permit #ME0101681 (same as NPDES permit number) will utilized as the primary reference number.

PERMIT SUMMARY

This permit is similar to the July 10, 1997 WDL in that it is:

1. Carrying forward the monthly average flow limit of 0.60 MGD.

2. Carrying forward the monthly average, weekly average, and daily maximum technology based mass and concentration limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS).

3. Carrying forward the monthly average and daily maximum water quality based seasonal concentration limits for *E. coli* bacteria.

4. Carrying forward the daily maximum technology based concentration limit for total residual chlorine.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated October 20, 2003 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 national 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 discharges (including the 2 CSO's) will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the application of the TOWN OF MADAWASKA, to discharge up to a monthly average flow of 0.6 million gallons per day (MGD) of secondary treated sanitary waste waters and an unspecified quantity of excess untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the St. John River, Class C, in Madawaska. The discharges shall be subject to the attached conditions and all applicable standards and regulations:

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 14TH DAY OF November, 2003.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: _____ for
DAWN GALLAGHER, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application July 6, 2001.

Date of application acceptance July 12, 2001.

FILED
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

Date filed with Board of Environmental Protection _____

This Order prepared by David Silver, BUREAU OF LAND & WATER QUALITY
W26025L 11/13/03

SPECIAL COONDITIONS
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning the effective date of the permit and lasting through permit expiration, the permittee is authorized to discharge secondary treated waste waters to the St. John River. Such treated waste water discharges shall be limited and monitored by the permittee as specified below.

SECONDARY TREATED WASTE WATERS - OUTFALL #001

Effluent Characteristic	Discharge Limitations						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	Minimum Measurement Frequency as specified	Sample Type as specified
Flow [50050]	0.6 MGD[03]	---	Report (MGD)	---	---	---	Continuous [99/99]	Recorder [RC]
Biochemical Oxygen Demand (BOD_5) [00310]	150 lbs/Day [26]	225 lbs/Day [26]	250 lbs/Day[26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Week [02/07]	Composite [24]
BOD Percent Removal (1) [81010]	85 % [23]	---	---	---	---	---	1/Month [01/30]	Calculate [24]
Total Suspended Solids (TSS) [00530]	150 lbs/Day [26]	225 lbs/Day [26]	250 lbs/Day[26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	2/Week [02/07]	Composite [24]
TSS Percent Removal (1) [81011]	85 % [23]	---	---	---	---	---	1/Month [01/30]	Calculate [24]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	1/Day [01/01]	Grab [GR]
E. coli Bacteria (2) (May 15- September 30) [31633]	---	---	---	142/100 ml(3) [13]	---	949/100 ml [13]	3/Week [03/07]	Grab [GR]
Total Residual Chlorine(2) (May 15- September 30) [50060]	---	---	---	---	---	1.0 mg/L [19]	1/Day [01/01]	Grab [GR]
pH (Standard Units) [00400]	---	---	---	---	---	6.0-9.0 [12]	1/Day [01/01]	Grab [GR]

SPECIAL CONDITIONS

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

Footnotes:

Sampling Locations:

Influent sampling for BOD_5 and TSS shall be sampled at the headworks building influent channel. For the purposes of this permitting action, BOD_5 and TSS samples taken will serve as the influent values for calculating percent removals for secondary treated waste waters.

Effluent receiving secondary treatment (Outfall #001) shall be sampled for BOD_5, TSS, total residual chlorine, pH, settleable solids, *E. coli* bacteria at the end of the chlorine contact chamber but prior to the discharge pipe on a year-round basis.

Any change in sampling location 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.

1. **Percent removal** - The treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 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 and total residual chlorine (TRC)** - Limits are seasonal and apply between May 15 and September 30 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.

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"*, above.

D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade III**, certificate 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. 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 (13th) 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 (15th) 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 following address:

Department of Environmental Protection
Northern Maine Regional Office
Bureau of Land and Water Quality
Division of Compliance, Engineering & Technical Assistance
1235 Central Drive—Skyway Park
Presque Isle, Maine 04769

Additional monthly reporting requires submitting (in electronic version preferably) *a "DEP-49-CSO Form For Use With Dedicated CSO Primary Clarifiers or DEP-49-CSO Form For Use With Non-Dedicated CSO Primary Clarifiers"* to:

CSO Coordinator
Department of Environmental Protection
Bureau of Land & Water Quality
Division of Engineering, Compliance and Technical Assistance
17 State House Station
Augusta, Maine 04333
e-mail: CSOCoordinator@state.me.us

G. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall 001 and two (2) combined sewer overflow outfalls listed in Special Condition L, *Combined Sewer Overflows*, of this permit. Discharges of waste water from any other point source are not authorized under this permit, but shall be reported in accordance with Standard Condition B(5) (Bypass) of this permit.

SPECIAL CONDITIONS

H. 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.

I. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall maintain a 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 permittee shall review their plan annually and record any necessary changes to keep the plan up to date.

J. OPERATION & MAINTENANCE (O&M) PLAN

This facility shall have a current written comprehensive Operation & Maintenance (O&M) Plan. 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, 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 and EPA personnel upon request.

SPECIAL CONDITIONS

J. OPERATION & MAINTENANCE (O&M) PLAN (cont'd)

Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

K. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

During the effective period of this permit, the permittee is authorized to receive and introduce into the treatment process or solids handling stream up to **a maximum of 4,000 gallons per day** of septage, subject to treatment process following the required method to be employed in accordance with the Septage Management Plan, submitted to the Department and the following terms and conditions:

1. This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.

2. At no time shall the addition of septage cause or contribute to effluent quality violations. If such conditions do exist, the introduction of septage into the treatment process or solids handling stream shall be suspended until effluent quality can be maintained.

3. The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste water treatment influent and test results.

4. The addition of septage into the treatment process or solids handling stream shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of septage into the treatment process or solids handling stream shall be reduced or terminated in order to eliminate the overload condition.

5. Septage known to be harmful to the treatment processes shall not be accepted. Wastes which contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.

6. Holding tank waste water shall not be recorded as septage but should be reported in the treatment facility's influent flow.

7. During wet weather flows, no septage shall be added to the treatment process or solids handling facilities.

L. COMBINED SEWER OVERFLOWS (CSO's)

1. Pursuant to Chapter 570 of Department Rules, *Combined Sewer Overflow Abatement,* the permittee is authorized to discharge from the following locations of combined sewer overflows (CSO's) (stormwater and sanitary wastewater) subject to the conditions and requirements herein.

CSO Outfall Locations	Location	Receiving Water & Class
#002	Main Pump Station	St. John River, Class C
#003	Fraser Mill Pump Station	St. John River, Class C

2. Prohibited Discharges

   a) The discharge of dry weather flows is prohibited. All such discharges shall be reported to the Department in accordance with Standard Condition D (1) of this permit.
   b) No discharge shall occur as a result of mechanical failure, improper design or inadequate operation or maintenance.
   c) No discharges shall occur at flow rates below the applicable design capacities of the wastewater treatment facility, pumping stations or sewerage system.

3. Narrative Effluent Limitations

   a) The effluent shall not contain a visible oil sheen, settled substances, foam, or floating solids at any time that impair the characteristics and designated uses ascribed to the classification of the receiving waters.

   b) The effluent shall not contain materials in concentrations or combinations that are hazardous or toxic to aquatic life; or which would impair the usage designated by the classification of the receiving waters.

   c) The discharge shall not impart color, turbidity, toxicity, radioactivity or other properties that cause the receiving waters to be unsuitable for the designated uses and other characteristics ascribed to their class.

   d) Notwithstanding specific conditions of this permit, the effluent by itself or in combination with other discharges shall 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.

SPECIAL CONDITIONS

4. CSO Master Plan (see Sections 2 & 3 of Chapter 570 Department Rules)
The permittee shall implement CSO control projects in accordance with an approved the CSO Master Plan entitled *Combined Sewer Overflow Master Plan, Submitted to the Town of Madawaska,* dated February 1997. Portions of the abatement/implementation schedule may be amended from time to time based on mutual agreements between the permittee and the Department. The permittee must notify the Department in writing prior to any proposed changes to the abatement/implementation schedule.

   On or before December 31, 2005 ***(PCS Code 06699)*** **the permittee shall submit to the Department for approval an updated CSO Master Plan and abatement schedule. Revisions to this date will require formal modification (submission of an application) of this permit.**

5. Nine Minimum Controls (NMC) (see Section 5 Chapter 570 of Department Rules)
The permittee shall implement and follow the Nine Minimum Control documentation as approved by EPA on May 29, 1997. Work preformed on the Nine Minimum Controls during the year shall be included in the annual CSO Progress Report (see below).

6. CSO Compliance Monitoring Program (see Section 6 Chapter 570 of Department Rules)

   The permittee shall conduct block testing or flow monitoring according to an approved *Compliance Monitoring Program* on all CSO points, as part of the CSO Master Plan. Annual flow volumes for all CSO locations shall be determined by actual flow monitoring, by estimation using a model such as EPA's Storm Water Management Model (SWMM) or by some other estimation technique approved by the Department.

   Results shall be submitted annually as part of the annual *CSO Progress Report* (see below), and shall include annual precipitation, CSO volumes (actual or estimated) and any block test data required. Any abnormalities during CSO monitoring shall also be reported. The results shall be reported on the Department form *"CSO Activity and Volumes"* (Attachment C of this permit) or similar format and submitted to the Department on diskette.

   CSO control projects that have been completed shall be monitored for volume and frequency of overflow to determine the effectiveness of the project toward CSO abatement. This requirement shall not apply to those areas where complete separation has been completed and CSO outfalls have been eliminated.

7. Additions of New Wastewater (see Section 8 Chapter 570 of Department Rules)
Chapter 570 Section 8 lists requirements relating to any proposed addition of wastewater to the combined sewer system. Documentation of the new wastewater additions to the system and associated mitigating measures shall be included in the annual *CSO Progress Report* (see below). Reports must contain the volumes and characteristics of the wastewater added or authorized for addition and descriptions of the sewer system improvements and estimated effectiveness.

SPECIAL CONDITIONS

L. COMBINED SEWER OVERFLOWS (CSO's)(cont'd)

8. Annual CSO Progress Reports (see Section 7 of Chapter 570 of Department Rules) **By March 1** ***(PCS Code 33101),*** of each year the permittee shall submit *CSO Progress Reports* covering the previous calendar year (January 1 to December 31). The CSO Progress Report shall include, but is not necessarily limited to, the following topics as further described in Chapter 570: CSO abatement projects, schedule comparison, progress on inflow sources, costs, flow monitoring results, CSO activity and volumes, nine minimum controls update, sewer extensions, and new commercial or industrial flows.

   The CSO Progress Reports shall be completed on a standard form entitled *"Annual CSO Progress Report"*, furnished by the Department, and submitted in electronic form, if possible, to the following address:

   CSO Coordinator
   Department of Environmental Protection
   Bureau of Land and Water Quality
   Division of Engineering, Compliance and Technical Assistance
   17 State House Station
   Augusta, Maine 04333
   e-mail: CSOCoordinator@state.me.us

9. Signs

   If not already installed, the permittee shall install and maintain an identification sign at each CSO location as notification to the public that intermittent discharges of untreated sanitary wastewater occur. The sign must be located at or near the outfall and be easily readable by the public. The sign shall be a minimum of 12" x 18" in size with white lettering against a green background and shall contain the following information:

   TOWN OF MADAWASKA
   WET WEATHER
   SEWAGE DISCHARGE
   CSO # AND NAME

SPECIAL CONDITIONS

L. COMBINED SEWER OVERFLOWS (CSO's)(cont'd)

10. Definitions

For the purposes of this permitting action, the following terms are defined as follows:

a. Combined Sewer Overflow - a discharge of excess waste water from a municipal or quasi-municipal sewerage system that conveys both sanitary wastes and storm water in a single pipe system and that is in direct response to a storm event or snowmelt.

b. Dry Weather Flows - flow in a sewerage system that occurs as a result of non-storm events or are caused solely by ground water infiltration.

c. Wet Weather Flows - flow in a sewerage system that occurs as a direct result of a storm event, or snowmelt in combination with dry weather flows.

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 anytime 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 and/or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **October 20, 2003**

PERMIT NUMBER: **ME0101681**
LICENSE NUMBER: **W002602-5L-D-R**

NAME AND ADDRESS OF APPLICANT:

Town of Madawaska
328 St. Thomas Street, Suite 101
Madawaska, Maine 04756

COUNTY: **Aroostook County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

7 Public Works Avenue
Madawaska, Maine 04756

RECEIVING WATER/CLASSIFICATION: **St. John River/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Arthur Faucher**
(207) 728-3608

1. APPLICATION SUMMARY

The applicant has applied to the Department for renewal of Department Waste Discharge License (WDL) #W002602-46-C-R which was issued on July 10, 1997 and expired on July 10, 2001. The July 10, 1997 WDL authorized the discharge of up to a monthly average flow of 0.60 million gallons per day (MGD) of secondary treated sanitary waste waters from a municipal waste water treatment facility to the St John River, Class C, in Madawaska, Maine. The July 10, 1997 WDL also authorized the discharge of untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the St. John River and its tributaries in Madawaska.

2. PERMIT SUMMARY

a. Regulatory: On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From this point forward, the program will be referenced as the Maine Pollutant Discharge Elimination System (MEPDES) permit program that will utilize a permit number of #ME0101681 (same as NPDES permit) as the primary reference number for the MEPDES permit.

b. History: The most current relevant licensing permitting and other actions include the following:

July 8, 1993 – The EPA issued NPDES permit #ME0101681 for a five (5) year term.

May 8, 1997 – The EPA authorized a waiver from additional Whole Effluent Toxicity testing.

July 10, 1997 – The DEP issued WDL # W002602-46-C-R for a four (4) year term.

July 6, 2001 – The Town of Madawaska submitted an application for renewal of #W002602-46-C-R.

August 18, 2003 – The DEP staff conducted an inspection of the Town of Madawaska's wastewater treatment facilities.

c. Source Description: The Town of Madawaska's Pollution Control Facility was constructed in 1975. The waste water treatment facility receives sanitary waste water flows from approximately 4,600 residential and commercial users in the Town of Madawaska.

The City's sewer collection system is approximately 22 miles in length, has 2 pump stations and has been upgraded to provide for complete separate sewer collection lines from the stormwater system.

d. Waste Water Treatment: The Town of Madawaska completed a major upgrade of the waste water treatment facility in 1998-99. The primary purpose of the upgrade was to abate discharges bypassing the waste water treatment facility by improving preliminary and primary treatment along with maximizing flow receiving secondary treatment and improving sludge handling and dewatering processes. The major additions and or improvements of the upgrade include new influent pumps, mechanical screen, new grit removal, rehabilitation of aeration basins, new blowers, new secondary circular clarifiers, new pump gallery, new grinder pumps for sludge, rehabilitation of the `disinfection system, new flow split devices, new sludge dewatering centrifuge, polymer system, lime addition and mixing equipment, new instrument and controls, and more. Existing equipment retained includes sewage ejector station, plunger pump SP-2, and aeration basin drain pump.

Associated with the facility upgrades was the adoption of a Wet Weather High Flow Management Plan that was reviewed and approved by the Department in February 1997. The facility has also submitted to the Department a Combined Sewer Overflow Management Plan that has been reviewed and approved by the Department.

Secondary Treatment

With the improvements/additions described above, the Town of Madawaska facility is now designed to provide a secondary level of treatment of up to 0.60 MGD as a monthly average, 2.50 MGD as a peak hourly flow. Flows are conveyed into the waste water treatment facility via two pump stations.

During dry weather flows, a secondary level of treatment is provided via mechanical screens at the pump stations to remove rags and debris. A mechanical bar rack (with 15 mm bar spacing) is provided with a bypass bar screen (with one inch spacing) used during maintenance of the mechanical unit and in the event of equipment failure of the automatic filter screen. Wastewater is pumped via a force main from the Main Pump Station to the Grit Removal Building influent channel. The Main Pump Station pumps all flow to the facility with two main pumps (each with a pumping capacity of 1,750 gallons per minute).

Grit removal

Waste water pumped to the Grit Removal Building receives grit removal prior to flow to the aeration basins. Grit removal is provided to protect downgradient piping and equipment from damage and plugging and to reduce the quantity of grit collected in the aeration basins. Screening from the grit removal process are discharged to a hopper which is trucked off site for disposal. Under normal operations, the filter screen assembly operates on a repeat cycle timer to remove screenings and discharge them to a screening cart. The cycle timer allows intermittent operation of the filter screening and a high water flow switch has also been provided to override the cycle timer in the event of screen blinding. The screen may also be operated manually.

The Grit Removal Building houses the grit system paddle drive, grit pump, grit concentrator, and grit dewateing screw. The effluent channel to the grit system also contains the flow split weirs and stop gates to allow dividing the flow evenly to the two aeration baisns, or to allow isolation of one of the basins when desired. Automatic control of the system is facilitated from control panel CP-5 in the pump gallery.

Grit removal consists of a circular concrete chamber containing the grit separation / removal equipment, a grit pump located above the chamber, a grit concentrator, and dewatering screw. Grit is removed by forced vortex and gravity. The chamber contains rotating paddles the induce circular flow and drive solids to the center.

Aeration Flow Splitting

From grit removal, flow to a splitter box integral to the grit outlet channel. Splitter box contains two 3-foot wide 90 degree V-notched fixed weirs. Grit outlet channel contains return sludge pipe so RAS may be introduced prior to the split.

Aeration Tanks

The two original package treatment units (combination of aeration basin/clarifier structure) were converted to solely aeration basins by removing the original clarifier components and installing new aeration equipment. The aeration basins are aerated by three positive displacement rotary lobe blowers (located in the control building basement). The basins contain fine bubble membrane diffusers, return sludge boxes, adjustable outlet weir gates and cross connecting piping and gates. The cross connnection piping, gates and weir gates allow the aeration basins to be set up to run in a variety of mode, including plug flow, contact stabilization and extended aeration. In addition, one aeration tank could be used as a sludge holding tank in an emergency.

Flow Splitter

From aeration, the mixed liquor flows to two secondary clarifiers. A new splitter valve pit is located upstream of the clarifiers to split flow to each clarifier via the 18-inch plug valves.

Clarifiers

Two new 40-foot diameter clarifiers with 12-foot sidewater depth are center feed type with peripheral overflow to launders that project into the tanks. Sludge collection is a differential head type with sludge withdrawal lines mounted on the revolving scraper arms. Floating scum is collected by a full-length radial surface skimmer and trough and discharged to a scum well. Full length scum troughs were incorporated to enhance scum removal from the surface of the covered clarifiers. Scum troughs may (under high flows) be completely submerged (when this happens the scum pumps should not be run until the peak flow abates). Each new clarifier is covered by a fiberglass dome and has interior lighting. Return activated sludge (RAS) from the clarifiers is recycled back to the aeration basins with a screw impellter type RAS pump located in the pump gallery. Sludge may be returned to the grit system outlet channel prior to flow splitting or directly to the aeration tanks.

Pump Gallery

The pump gallery includes return sludge pumps (designed to return sludge from clarifiers to the aeration tanks, the waste sludge pump, which is designed to waste sludge from clarifiers to the sludge holding tank, and the scum pump (which pumps the scum from the secondary clarifiers to the sludge holding tank). Control panel (CP_4) controls pumps. Variable frequency drive is provided on three return sludge pumps.

Disinfection

The old disinfection system used gaseous chlorine, but was replaced with a liquid (hypochlorite) chlorination disinfection system during the 1998-99 facility upgrade. The disinfection system uses two 560 gallon hypochlorite tanks, three automatically flow paced pumps, and two manually adjusted pumps. The flow paced chemical feed system is controlled by a signal from the effluent flow meter or can be manually controlled. The RAS chlorine feed system acts as backup to the automatic effluent chlorination system. Chlorine applications are also provided at the septage tank for odor control, at each return sludge pipe line in the pump gallery to control sludge bulking (caused by filamentous bacteria). These applications are independent of the automatic effluent disinfection system. Modifications made to original tank provide for additional detention time at higher design flows. Tanks are also divided to two parallel flow paths, to facilitate cleaning during low flow periods. A flash mixer is located in the chlorine contact tank inlet to ensure solution is throroughly mixed.

Control Building

Basement houses the centrifuge feed and septage pump room , blower room, boiler room and ground floor houses the dewatering room, truck bay, office/ laboratory, disinfection room, maintenance room and the MCC room. The blower room contains three aeration tank blowers, the sludge holding tank blower, and the septage tank blower. Control panel CP2 is located in basement and houses the indicators and controls for the blowers and septage tank level and pump status control panels.

The first floor houses the dewatering room (including centrifuge, polymer system, lime system, and the motor control center), an operators office/laboratory, a sludge disposal truck loading bay, the disinfection system room and a new break room. The dewaering room contains the centrifuge, the polymer feed system, the lime feed system, a sludge screw conveyor, and the VFD drives for the centrifuge feed pump. Control panels CP3 and 3a which control the centrifuge are located in the dewatering room. Control panel CP3 controls the automatic starting and stopping of all the equipment related to the dewatering system including the sludge feed rates, centrifuge, polymer and lime feed rates. Control panel CP-3a powers the dewatering equipment, including centrifuge, lime system, polymer system and sludge screw conveyor.

Dewatering sludge is conveyed from the centrifuge to the truck bay, where it is deposted into a waiting truck. The laboratory contains the lab testing equipment required for the day to day operations of the treatment plant. The office includes Control Panel CP-1 which contains the automatic teledialer, and the lab/operator's supervisory control and data acquisition (SCADA) system interface personal computer.

See Attachment A of this Fact Sheet for a schematic of the facility.

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges require application of best practicable treatment, 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, Maine law, 38 M.R.S.A., Section 420, and Department Regulation Chapter 530.5, *Surface Water Toxics Control Program* requires the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Water Act.

4. RECEIVING WATER STANDARDS

Maine law, 38 M.R.S.A., Section 467(4)(A)(10) indicates the St. John River at the point of discharge is classified as a Class C waterway. Maine law, 38 M.R.S.A., Section 465(4) describes standards for classification of Class C waters.

5. RECEIVING WATER CONDITIONS

Table 4-B1, *Rivers and Streams Impaired By Pollutants, Pollution Control Requirements Reasonably Expected to Result in Attainment* of a document entitled, The State of Maine, Department of Environmental Protection, 2002 Integrated Water Quality Monitoring and Assessment Report, published by the Department, indicates a 15.5 mile segment of the St. John River (from Madawaska to La Grande Isle in the Town of Grand Isle) is attaining the standards of its assigned classification.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. Flow: The monthly average flow limitation of 0.6 MGD in the previous licensing action is being carried forward in this permitting action and is considered to be representative of the monthly average design flow for the waste water treatment facility.

b. Dilution Factors - The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in Department Rule Chapter 530.5, *Surface Water Toxics Control Program*, October 1994. With a WDL flow limit of 0.6 MGD the dilution factors are as follows:

Chronic: 7Q10 =1,250 cfs $\Rightarrow \frac{(1{,}250\text{ cfs})(0.6464) + (0.6\text{ MGD})}{(0.6\text{ MGD})} = 1{,}345:1$

Acute: 1Q10 = 1,199 cfs $\Rightarrow \frac{(1{,}199\text{ cfs})(0.6464) + (0.6\text{ MGD})}{(0.6\text{ MGD})} = 1{,}292:1$

Acute ¼ of 1Q10 = 300 cfs $\Rightarrow \frac{(300\text{ cfs})(0.6464) + (0.6\text{ MGD})}{(0.6\text{ MGD})} = 324:1$

Harmonic Mean: $\Rightarrow \frac{(3{,}750\text{ cfs})(0.6464) + (0.6\text{ MGD})}{(0.6\text{ MGD})} = 4{,}041:1$

c. Biochemical Oxygen Demand (BOD) & Total Suspended Solids (TSS): The previous licensing action established monthly average and weekly average mass limits for BOD and TSS and monthly average, and weekly average concentration limits of 30, and 45 mg/L (respectively) for BOD and TSS that are being carried forward in this permitting action. The daily maximum BOD and TSS concentration limit of 50 mg/L are also being carried forward from the previous licensing action and is considered a Department best practicable treatment (BPT) limitation. Department Rule Chapter 525(3)(III) establishes secondary treatment requirements for BOD and TSS. BOD is the measure of the total oxygen demand from both nitrogenous and carbonaceous components in a waste water. As a rule, the Department establishes monthly average, weekly average and daily maximum BOD limitations for facilities that do not nitrify or complete the nitrification process through internal process control measures.

As for mass limitations, the previous licensing action established monthly average, weekly average and daily maximum limitations based on a monthly average limit of 0.6 MGD that are being carried forward in this permitting action. The limitations were calculated as follows:

Monthly average: (0.6 MGD)(8.34)(30 mg/L) = 150 lbs/day
Weekly average: (0.6 MGD)(8.34)(45 mg/L) = 225 lbs/day
Daily Maximum: (0.6 MGD)(8.34)(50 mg/L) = 250 lbs/day

d. Settleable Solids - The previous license established a report requirement on a weekly average basis. The Department has reconsidered its position on reporting requirements versus numeric limitations. This permitting action is establishing a daily maximum concentration limit of 0.3 mg/L for settleable solids and is considered by the Department as a best professional judgement of BPT for secondary treated waste waters. This permitting action is eliminating the weekly average reporting requirement.

e. Escherichia coliform bacteria: The monthly average and daily maximum *E. coli* bacteria limits of 142 colonies/100 ml and 949 colonies/100 ml in the previous licensing action are being carried forward in this permitting action and are based on the State of Maine Water Classification Program criteria for Class C waters.

f. Total Residual Chlorine - The previous licensing action established a daily maximum BPT limit of 1.0 mg/L for the discharge. 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. Chapter 530.5(D)(4)(a) states that analyses using numeric acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone. The regulation goes on to say that where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design, up to including all of it. The Department has investigated the mixing characteristics of the discharge and is utilizing the ¼ of 1Q10 in acute evaluations pursuant to Chapter 530.5. Licensing/permitting actions by the Department impose the more stringent of water quality or technology based limits. 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	324:1	1,345:1	6.2 mg/L	14.7 mg/L

Example calculations: Acute Limit ⇒ 0.019 mg/L (324) = 6.2 mg/L
Chronic Limit ⇒ 0.011 mg/L (1,345) = 14.7 mg/L

In the case of the Town of Madawaska's facility, the calculated acute and chronic water quality based thresholds are higher than 1.0 mg/L, thus the BPT limit of 1.0 mg/L is established as a daily maximum limit.

g. pH Range- The previous licensing action established a pH range limitation of 6.0 - 8.5 standard units. The limits were based on Maine Board of Environmental Protection Policy regarding the certification of NPDES permits and were considered best practicable treatment limitations. This permitting action is expanding the range limit from 6.0-8.5 to 6.0-9.0 standard units pursuant to a new Department rule found in Chapter 525(3)(III)(c). The new limits are considered BPT.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

The Department acknowledges that the elimination of the two (2) remaining CSO's in the collection system is a costly long term project. As the Town's sewer collection system is upgraded and maintained in according to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and in the waste water receiving primary treatment only at the treatment plant and over time, improvement in the quality of the waste water discharge to the receiving waters. As permitted, the Department of Environmental Protection has determined the existing water uses will be maintained and protected.

8. PUBLIC COMMENTS

Public notice of this application was made in the St John Valley Times on or about July 10, 2001. 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:

David Silver
Division of Water Resource Regulation
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7658

10. RESPONSE TO COMMENTS

During the period of July 12, 2001 through permit issuance, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the Town of Madawaska. . The Department did not receive comments from the licensee, state or federal agencies or interested parties that resulted in any substantive changes in the terms and conditions of the license. Therefore, the Department has not prepared a Response to Comments section.

ATTACHMENT A