STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

Mr. Jacques Marquis
Environmental Supervisor
Fraser Papers Limited
82 Bridge Avenue
Madawaska, Maine 04756

August 17, 2004

RE: Maine Waste Discharge License (WDL) Application #W002727-5N-H-R
Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0000159
Final Permit/License

Dear Mr. Marquis:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license 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 the matter, please feel free to call me at 287-7693.

Sincerely,

Gregg Wood
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc.
cc: William Sheehan, DEP/NMRO
Ted Lavery, USEPA

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

printed on recycled paper

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

FRASER PAPERS LIMITED	)	MAINE POLLUTANT DISCHARGE
MADAWASKA, AROOSTOOK COUNTY, ME.	)	ELIMINATION SYSTEM PERMIT
INDUSTRIAL PROCESS WASTE WATER	)	AND
ME0000159	)	WASTE DISCHARGE LICENSE
W002727-5N-H-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 hereinafter) has considered the application of FRASER PAPERS LIMITED (Fraser hereinafter), with its supportive data, agency review comments, and other related material on file and finds the following facts:

APPLICATION SUMMARY

Fraser has applied to the Department for renewal of Department Waste Discharge License (WDL) #W002727-5N-F-R which was issued on April 22, 1999, and expired on April 22, 2004. It is noted the 4/22/99 WDL was modified on a number of occasions during its term. The 4/22/99 WDL authorized the discharge of up to a monthly average flow of 25 million gallons per day (MGD) of primary treated paper production process waste waters, treated landfill leachate, non-contact cooling waters, filter backwash waters and storm water runoff from a paper manufacturing facility to the St. John River, Class C, in Madawaska, Maine.

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 referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and permit #ME0000159 (same as NPDES permit number) will be utilized as the primary reference number.

MODIFICATIONS REQUESTED

The permittee has requested the Department reduce the monthly average flow limitation from 25.0 MGD in the previous licensing action to 15.0 MGD in this permitting action. The reduced flow limitation more accurately reflects the design capacity of the new secondary treatment component of the waste water treatment facility that commenced operation in December of calendar year 2002.

PERMIT SUMMARY

This permitting action is similar to the 4/22/99 WDL action in that it is;

1. Carrying forward the monthly average and daily maximum water quality based mass limits for biochemical oxygen demand (BOD_5).

2. Carrying forward the seasonal monthly average and daily maximum water quality based mass limits for total suspended solids (TSS).

3. Carrying forward whole effluent toxicity (WET) and chemical specific (priority pollutant) testing requirements with a modified testing regime.

4. Carrying forward the pH range limitation of 5.0 –9.0 standard units.

This permitting action is different than the 4/22/99 WDL action in that it is;

5. Establishing a monthly average flow limitation of 15.0 MGD.

6. Establishing a reporting requirement for BOD and TSS concentrations.

7. Eliminating the monthly average water quality based limits for total aluminum.

8. Eliminating the water quality based acute and chronic no observed effect level (A-NOEL and C-NOEL) limits for the water flea (*Ceriodaphnia dubia*) and the C-NOEL for the brook trout (*Salvelinus fontinalis*).

9. Establishing surveillance level WET testing and chemical specific (priority pollutant) testing at a frequency of 1/Year and screening level WET and chemical specific testing at a frequency of 1/Quarter.

10. Revising the dilution factors associated with the discharge from the facility.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated July 16, 2004, (revised August 12, 2004) 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 discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the application of FRASER PAPERS LIMITED, to discharge up to a monthly average flow of 15 million gallons per day (MGD) of secondary treated paper production process waste waters, treated landfill leachate, non-contact cooling waters, filter backwash waters and storm water runoff from a paper manufacturing facility to the St. John River, Class C, in Madawaska, 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 2, 2001, 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 17TH DAY OF AUGUST, 2004.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: _____ FOR
Dawn Gallagher, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application January 20, 2004.

Date of application acceptance January 20, 2004.

FILED
AUG 18 2004
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

Date filed with Board of Environmental Protection _____

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

W27275NH 8/12/04

SPECIAL CONDITIONS

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.

OUTFALL #001A

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
Flow [50050]	15.0 MGD[03]	---	---	---	---	---	Continuous [99/99]	Recorder [RC]
Biochemical Oxygen Demand (BOD_5) [00310]	12,360 lbs/Day [26]	---	19,425 lbs/Day[26]	Report mg/L [19]	---	Report mg/L [19]	1/Day [01/01]	24 Hr. Composite [24]
Total Suspended Solids (TSS) [00530]								
June 1 – October 31	9,893	---	12,200	Report mg/L	---	Report mg/L	1/Day [01/01]	24 Hr. Comp e
November 1 – May 31	9,893 lbs/Day [26]	---	19,284 lbs/Day[26]	Report mg/L [19]	---	Report mg/L [19]	1/Day [01/01]	24 Hr. Composite [24]
pH (Std. Units) [00400]	---	---	---	---	---	5.0-9.0 [12]	1/Day [01/01]	Grab [GR]

SPECIAL CONDITIONS
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd) – OUTFALL #001

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

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) (1)								
A-NOEL								
Ceriodaphnia dubia [TDA3B]	---	---	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
Salvelinus fontinalis [TDA6F]	---	---	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
C-NOEL								
Ceriodaphnia dubia [TBP3B]	---	---	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
Salvelinus fontinalis [TBQ6F]	---	---	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
Chemical Specific (2) [50008]	---	---	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite/ Grab [24/GR]

SCREENING LEVEL TESTING – Beginning twelve months prior to permit expiration.

	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) (1)								
A-NOEL								
Ceriodaphnia dubia [TDA3B]	---	---	---	---	---	Report % [23]	4/Year [02/YR]	Composite [24]
Salvelinus fontinalis [TDA6F]	---	---	---	---	---	Report % [23]	2/Year [02/YR]	Composite [24]
Pimephales promelas [TDA6C]	---	---	---	---	---	Report % [23]	2/Year [02/YR]	Composite [24]
C-NOEL								
Ceriodaphnia dubia [TBP3B]	---	---	---	---	---	Report % [23]	4/Year [04/YR]	Composite [24]
Salvelinus fontinalis [TBQ6F]	---	---	---	---	---	Report % [23]	2/Year [02/YR]	Composite [24]
Pimephales promelas [TBP6C]	---	---	---	---	---	Report % [23]	2/Year [02/YR]	Composite [24]
Chemical Specific (2) [50008]	---	---	---	---	---	Report ug/L [28]	1/Quarter [01/90]	Composite/ Grab [24/GR]

SPECIAL CONDITIONS

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

Footnotes:

Sampling Location - Samples for all parameters shall be collected after the last treatment process 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 in 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. **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 dilution of 2.0% and 2.0% respectively), 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.

   Beginning upon issuance of the permit and lasting through twelve months prior to the expiration date of the permit, the permittee shall conduct surveillance level WET testing at a frequency of 1/Year. Testing shall be performed on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). Testing shall be altered from year to year such that each species is tested in all four calendar quarters over the term of the permit. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing.

   Beginning twelve months prior to the expiration date of the permit, the permittee shall initiate screening level WET tests at a frequency of 1/Quarter for four consecutive calendar quarters. Testing shall be conducted on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*) in two of the four calendar quarters and conducted on the water flea (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*) in the other two of the four calendar quarters. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing.

SPECIAL CONDITIONS

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

Footnotes:

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 analytic chemistry on the form in Attachment A of this permit each time a WET test is performed.

2. **Priority pollutant** - (chemical specific testing pursuant to Department rule Chapter 530.5) testing are those parameters listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published at 40 CFR Part 122, Appendix D, Tables II and III.

Beginning upon issuance of the permit and lasting through 12-month prior to the expiration date of the permit, surveillance level chemical specific testing shall be conducted at a frequency of once per year. **Beginning 12 months prior to the expiration date of the permit, screening level chemical specific test shall be conductd at a frequency of 1/Quarter for four consecutive calendar quarters**. Chemical specific testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, where applicable. Chemical specific 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. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing. **For the purposes of DMR reporting, enter a "NODI-9" for *no testing done this monitoring period* or "1" for *yes, testing done this monitoring period.***

All mercury sampling 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. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade V** 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.

D. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions 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.

E. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following of any substantial change in the volume or character of pollutants being discharged.

F. 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.

SPECIAL CONDITIONS

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

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.

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.

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 (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 addresses:

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

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

ATTACHMENT A

FRESHWATER WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

Facility _____ DEP License No _____ NPDES permit No _____

Contact person _____ Telephone No _____

Date initially sampled _____ (mm/dd/yy) Date tested _____ (mm/dd/yy) Chlorinated? _____

Test type screening _____ surveillance _____ Dechlorinated? _____

Results % effluent Test required by: DEP/EPA _____

	Water flea	Trout	Fathead
LC50			
A-NOEL			
C-NOEL			

Receiving Water Concentration

A-NOEL	
C-NOEL	

Data summary

	water flea			trout			fat head		
	% survival		no. young	% survival		final wt (mg)	% survival		final wt (mg)
QC standard	A>90	C>80	>15/female	A>90	C>80	>2% increase	A>89	C>79	>0.25
lab control									
river 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		fat head	
	LC50/A-NOEL	C-NOEL	LC50/A-NOEL	C-NOEL	LC50/A-NOEL	C-NOEL
toxicant / date						
limits (mg/l)						
results (mg/l)						

Comments _____

Laboratory Conducting Test. To the best of my knowledge this information is true, accurate, and complete

signature _____ company _____

printed name _____ address _____

tel. no. _____

Report analytical chemistry on reverse side.

ANALYTICAL CHEMISTRY RESULTS
FRESHWATER TESTS

Date collected _____ mm/dd/yy

Date analyzed _____ mm/dd/yy

Lab ID No. _____

Analyte	Report Units	Results receiving water	Results effluent	Detection level	Method
Alkalinity	mg/L			mg/L	
Ammonia nitrogen	µg/L			µg/L	
Specific conductance	µmhos			µmhos	
Total residual chlorine	mg/L			mg/L	
Total organic carbon	mg/L			mg/L	
Total solids	mg/L			mg/L	
Total suspended solids	mg/L			mg/L	
Total aluminum	µg/L			µg/L	
Total cadmium	µg/L			µg/L	
Total calcium	mg/L			mg/L	
Total chromium	µg/L			µg/L	
Total copper	µg/L			µg/L	
Total hardness	mg/L			mg/L	
Total lead	µg/L			µg/L	
Total magnesium	µg/L			µg/L	
Total nickel	µg/L			µg/L	
Total zinc	µg/L			µg/L	
other (pH)	S.U.			S.U.	
other ( )					

Comments _____

Laboratory conducting test. To the best of my knowledge this information is true, accurate, and complete

signature _____ lab name _____

printed name _____ address _____

tel. no. _____

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **July 16, 2004**
Revised: **August 12, 2004**

PERMIT NUMBER: **ME0000159**
LICENSE NUMBER: **W002727-5N-H-R**

NAME AND ADDRESS OF APPLICANT:

FRASER PAPER LIMITED
82 Bridge Avenue
Madawaska, Maine 04756

COUNTY: **Aroostook County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

Madawaska Mill
82 Bridge Avenue
Madawaska, Maine 04756

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

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Jacques Marquis**
Environmental Supervisor
(207) 728-8688

1. APPLICATION SUMMARY

Fraser has applied to the Department for renewal of Department Waste Discharge License (WDL) #W002727-5N-F-R which was issued on April 22, 1999, and expired on April 22, 2004. It is noted the 4/22/99 WDL was modified on a number of occasions during its term. The 4/22/99 WDL authorized the discharge of up to a monthly average flow of 25 million gallons per day (MGD) of primary treated paper production process waste waters, treated landfill leachate, non-contact cooling waters, filter backwash waters and storm water runoff from a paper manufacturing facility to the St. John River, Class C, in Madawaska, Maine.

2. MODIFICATIONS REQUESTED

The permittee has requested the Department reduce the monthly average flow limitation from 25.0 MGD in the previous licensing action to 15.0 MGD in this permitting action. The reduced flow limitation more accurately reflects the design capacity of the new secondary treatment component of the waste water treatment facility that commenced operation in December of calendar year 2002.

3. 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) permitting program in Maine. From this point forward, the program will be referred to as the MEPDES permit program. NPDES permit #ME0000159 last issued by the EPA on September 7, 1999, and due to expired on September 7, 2004, will be superseded by the final MEPDES permit upon issuance. Once superseded, all terms and conditions of the NPDES become null and void.

b. Terms & Conditions - **This permitting action is similar to the 4/22/99 WDL action in that it is;**

1. Carrying forward the monthly average and daily maximum water quality based mass limits for biochemical oxygen demand (BOD_5).

2. Carrying forward the seasonal monthly average and daily maximum water quality based mass limits for total suspended solids (TSS).

3. Carrying forward whole effluent toxicity (WET) and chemical specific (priority pollutant) testing requirements with a modified testing regime.

4. Carrying forward the pH range limitation of 5.0 –9.0 standard units.

This permitting action is different than the 4/22/99 WDL action in that it is;

5. Establishing a monthly average flow limitation of 15.0 MGD.

6. Establishing a reporting requirement for BOD and TSS concentrations.

7. Eliminating the monthly average water quality based limits for total aluminum.

8. Eliminating the water quality based acute and chronic no observed effect level (A-NOEL and C-NOEL) limits for the water flea (*Ceriodaphnia dubia*)) and the C-NOEL for the brook trout (*Salvelinus fontinalis*).

3. PERMIT SUMMARY (cont'd)

9. Establishing surveillance level WET testing and chemical specific (priority pollutant) testing at a frequency of 1/Year and screening level WET and chemical specific testing at a frequency of 1/Quarter.

10. Revising the dilution factors associated with the discharge from the facility.

c. History – The most current relevant licensing/permitting actions include:

April 22, 1999 – The Department issued WDL #W002727-5N-F-R for a five-year term.

September 7, 1999 – The EPA issued NPDES permit #ME0000159 for a five-year term.

May 22, 2000 – The Department issued WDL modification #W002727-5N-G-M that gave the permittee a one year extension on the dates in the schedule of compliance established in Special Condition F, *Schedule of Compliance,* in the 4/22/99 WDL.

May 23, 2000 – The Department administratively modified the 4/22/99 WDL by establishing interim mean and maximum technology based concentration limitations of 5.7 ng/L and 8.6 ng/L, respectively for mercury. It is noted the limitations are not found in this specific permitting document as limitations and monitoring requirements have been subject to numerous modifications in recent years. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

June 12, 2002 – The Department administratively modified the 4/22/99 WDL to incorporate applicable limitations and monitoring requirements for whole effluent toxicity (WET) test species and chemical specific parameters based on a statistical evaluation of test results for the period June 1999 – December 2001.

March 21, 2003 – The Department administratively modified the 5/22/00 WDL modification by eliminating the schedule and implementation of projects specified in Attachment A entitled, *Effluent And Toxicity Reduction Timeline*, of the WDL.

January 20, 2004 – Nexfor Fraser Papers (former name of Fraser Papers Limited) submitted a timely application to the Department to renew the 4/22/99 WDL.

June 24, 2004 – The Department issued a License Tranfer Order transferring the WDL for Nexfor Fraser Papers Madawaska mill to Fraser Paper Limited.

3. PERMIT SUMMARY (cont'd)

d. Source Description: Fraser operates a non-integrated paper mill which consists of two large mills with eight paper machines, two off-machine blade coaters for the manufacturing of coated groundwood and publication papers, two supercalendars and two on-machine bill-blade coater for the manufacturing of coated fine paper specialties. Of the eight paper machines, four produce fine papers, three produce groundwood papers and one produces either fine or groundwood papers.

Most of the pulp utilized in paper production at the facility is supplied via a multiple pipeline system that connects Fraser Paper Limited's Madawaska mill with Fraser Inc.'s Edmunston pulp mills on the Canadian side of the St. John River. Additional kraft sulfite and groundwood pulp is purchased to meet Fraser's paper making needs. The average daily production for the mill for calendar years 2001, 2002 and 2003 was 1,609 tons of paper per day.

e. Waste Water Treatment: The waste water from the mills eight paper machines, two off-machines coaters, two on-machine coater, the associated coating preparation areas and other facilities is collected in one common sewer and directed to the mills existing waste water treatment facility. The waste stream enters a flow distribution building where samples are taken to determine pH levels. Addition of alum or caustic are utilized to either lower or raise the pH. Prior to entering the two circular clarifiers, each measuring 110 feet diameter, a flocculation polymer is added to the waste water stream to enhance settling of suspended solids. The effluent exits the clarifiers and passes through a three-foot Parshall flume where the waste water pH is sampled again and neutralized. Prior to October of calendar year 2002, this was the extent of treatment of the waste water prior to discharge to the St. John River.

Due to persistent exceedences of critical ambient water quality thresholds for whole effluent toxicity (WET) testing of the *Ceriodaphnia dubia* (water flea) and other factors, Fraser upgraded the waste water treatment facility to include biological treatment and secondary clarification via dissolved air floatation (DAF) devices. Fraser installed two moving bed biofilm reactors (MBBR) to provide the aerobic biological treatment. The MBBR process is based on the use of plastic biofilm carrier elements which are kept in suspension and continuous movement by means of air introduced at the bottom of a reactor vessel. The MBBR vessels are operated in series. Waste waters from the second reactor vessel are further treated via two DAF units for removal of solids. Wasted primary and secondary sludge is co-mingled in a sludge tank where they are processed further by de-watering and landfilled. Filtrate from the de-watering process is routed back to the MBBR. See Attachment B of this Fact Sheet for a schematic of the waste water treatment process.

3. PERMIT SUMMARY (cont'd)

After exiting the flume, the waste water is discharged to the river via two manholes and a stainless steel pipe measuring 24 inches in diameter with a 60 feet long diffuser with four (4) inch and six (6) inch perforations spaced at five (5) feet on-center. The outfall pipe extends out into the receiving approximately 115 feet. A valve has been placed in the second manhole to maintain a water level in the first manhole within three or four feet from the bottom of the Parshall flume to minimize aeration of the effluent which in turn mitigates foaming in the river. The outfall diffuser is located approximately 1,800 feet downstream of the international bridge between Madawaska, Maine and Edmunston, New Brunswick. The Department has made the determination that as a result of the diffuser, the discharge from mill receives rapid and complete mixing with the St. John River.

4. 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.

5. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., Article 4-A §467(15)(A)(4) classifies the St. John River from the international bridge in Madawaska to where the international border leaves the river in Hamlin as a Class C waterway. Maine law, 38 M.R.S.A., Article 4-A, §465(4) describes the classification standards for Class C waters.

6. RECEIVING WATER CONDITIONS

The main stem of the St. John River from Madawaska to Van Buren (25.7 miles) is listed in a table entitled, *Rivers And Streams Attaining Some Designated Uses, Insufficient Information For Other Uses*, in a document entitled, The State of Maine, Department of Environmental Protection, 2002 Integrated Water Quality Monitoring and Assessment Report, published by the Department. The "insufficient information" in this context refers to not having current ambient dissolved oxygen data or bio-monitoring (macro-invertebrate) data. The Department is scheduled to conduct macro-inveterbrate sampling in August of this year (2004.)

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The Fraser mill in Madawaska is subject to federal regulations established in National Effluent Guidelines and Standards (NEGs) found at 40 CFR, Sub-Chapter N, Part 430, Sub-Part K, *Fine and Lightweight Papers From Purchased Pulp Subcategory.*

a. Flow: The pevious licensing action established a monthly average flow limitation of 25 MGD and a daily maximum flow limitation of 30 MGD. The permittee has requested the Department reduce the monthly average flow limitation from 25 MGD to 15 MGD to more accurately reflect flows being discharged and recognize the design capacity of the relatively new MBBR process. The reduction in the monthly average flow limitation is acceptable to the Department. The permittee has reported in their application for permit renewal that the maximum 30-day value for the period calendar years 2000-2003 was 9.4 MGD and the mean value for the same period was 7.4 MGD and the maximum value during the period as 12.3 MGD. The Department has reconsidered its position on establishing daily maximum flow limitations for pulp and paper manufacturers as said limit provides no environmental protection and is therefore eliminating the daily maximum flow limitation of 30 MGD.

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 permitted flow limit of 12.0 MGD, the dilution factors are as follows:

Acute: 1Q10 = 1,117 cfs $\Rightarrow \frac{(1{,}117\text{ cfs})(0.6464) + (15.0\text{ MGD})}{(15.0\text{ MGD})} = 49{:}1$

Chronic: 7Q10 =1,151 cfs $\Rightarrow \frac{(1{,}151\text{ cfs})(0.6464) + (15.0\text{ MGD})}{(15.0\text{ MGD})} = 51{:}1$

Harmonic Mean: = 4,596 cfs $\Rightarrow \frac{(4{,}596\text{ cfs})(0.6464) + (15.0\text{ MGD})}{(15.0\text{ MGD})} = 199{:}1$

Footnotes

The 1Q10, 7Q10 and harmonic mean river flows utilized in the calculations above are different than the previous licensing action as the Department has updated these flows based on a recent statistical evaluation of the river flows as measured at the Ft. Kent and Grand Falls river gauges.

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

c. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS) – The year-round monthly average and daily maximum mass limits for BOD and the year-round monthly average and seasonal daily maximum mass limits for TSS in the previous licensing action are being carried forward in this permitting action. For a detailed history on the derivation of the limits, see Attachment C of this Fact Sheet. The text and figures presented in Attachment C are taken directly from EPA's 1993 NPDES permit Fact Sheet. The 1/20/04 application indicates the long term (3 year) average BOD discharged is 1,783 lbs/day and 2,913 lbs/day for TSS. The maximum 30-day mass of BOD discharged was 2,922 lbs/day and for TSS, 4,382 lbs/day.

d. pH Range- The previous licensing action established a pH range limitation of 5.0 – 9.0 standard units that is being carried forward in this permitting action. The limits were based on the NEGs found at 40 CFR, Part 430, SubPart K §430.112.

e. Whole Effluent Toxicity (WET) and Chemical Specific Testing Maine Law, 38 M.R.S.A., Sections 414-A and 420, prohibits the discharge of effluents containing substances in amounts which 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 EPA. Department Rules, 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program*, set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET and chemical specific (priority pollutant) testing, as required by Chapter 530.5, is included 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 waste water, 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. Chemical specific, or "priority pollutant (PP)," 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.

The Chapter 530.5 regulation places the Fraser facility in the high frequency category for WET testing and chemical specific testing (priority pollutant) as the facility discharges industrial process waste waters.

A recent review of the Fraser's data indicates that they have fulfilled the Chapter 530.5 testing requirements to date. See Attachment D of this Fact Sheet for a summary of the WET test results and Attachment E of this Fact Sheet for a summary of the chemical specific test dates.

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

Department Rule Chapter 530.5 and Protocol E(1) of a document entitled *Maine Department of Environmental Protection, Toxicity Program Implementation Protocols*, dated July 1998, states that statistical evaluations shall be periodically performed on the most recent 60 months of WET and chemical specific data for a given facility to determine if water quality based limitations must be included in the permit. However, given that Fraser significantly changed their waste water treatment process by installing a biological treatment component in October of 20002 as a result of historic WET failures, the Department is only including WET and chemical specific test results in the statistical evaluation after that date. Therefore, the evaluation is based on the most current 20 months of test results.

Chapter 530.5 §C(2) states when a discharge *"...contains pollutants at levels that have a reasonable potential [RP] to cause or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion, appropriate water quality based limits must be established in the permit upon issuance."*

Chapter 530.5 §C(3) also states that if data indicates that a discharge is causing an exceedence of applicable AWQC, then:*"(1) the Department must notify the licensee of the exceedence; (2) the licensee must submit a toxicity reduction evaluation (TRE) plan for review and approval within 30 days of receipt of notice and implement the TRE after Department approval; (3) the Department must modify the waste discharge license to specify effluent limits and monitoring requirements necessary to control the level of pollutant and meet receiving water classification standards within 180 days of the Department's approval of the TRE."*

On June 25, 2004, the Department conducted a statistical evaluation on the aforementioned tests results in accordance with the statistical approach outlined in EPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and Maine Department of Environmental Protection Guidance, July 1998, entitled *Toxicity Program Implementation Protocols*. The results of the 6/25/04 WET and chemical specific evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed the critical acute or chronic WET NOEL thresholds (2.0% and 2.0% respectively – mathematical inverse of the applicable dilution factors) for any of the WET species tested to date or any of the AWQC for the chemical specific elements/compounds tested to date.

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

The Department establishes the testing frequency for WET or chemical specific parameters that exceed or have a reasonable potential to exceed ambient water quality thresholds/criteria taking into consideration the frequency, timing and severity of the tests results that are at issue. In the absence of exceedences or reasonable potential to exceed critical WET thresholds or chemical specific AWQC, Chapter 530.5 authorizes the Department to maintain a surveillance level of testing, 1/Year for WET testing and chemical specific testing for the first four years of the term of the permit. Beginning 12 months prior to the expiration date of the permit, Chapter 530.5 requires the permittee shall revert to a screening level of testing of 4/Year (four consecutive calendar quarters) for WET and chemical specific testing.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class C classification.

9. PUBLIC COMMENTS

Public notice of this application was made in the St. John Valley Times newspaper on or about January 21, 2004. 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.

10. DEPARTMENT CONTACTS

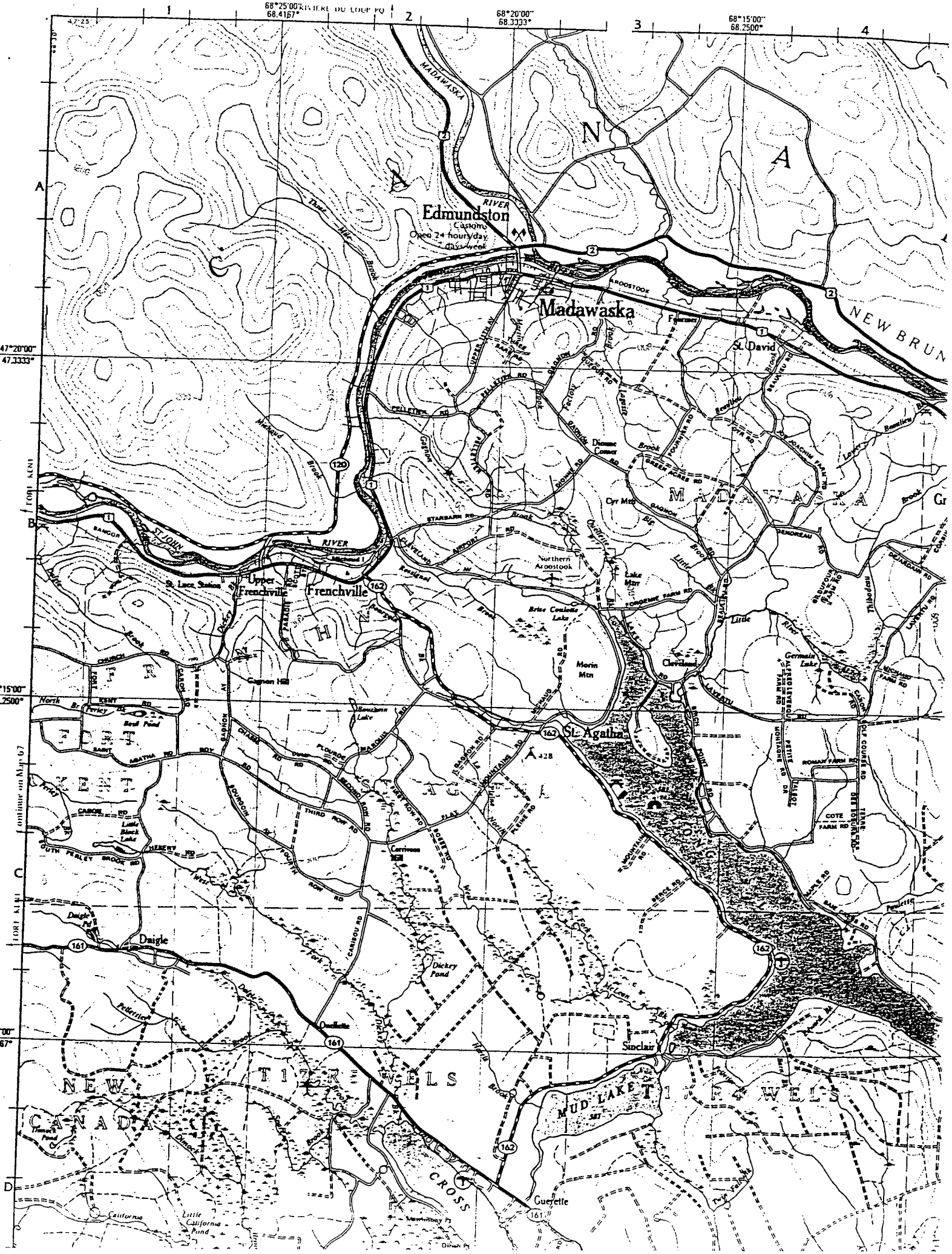
Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood
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) 287-7693
E-mail: gregg.wood@maine.gov

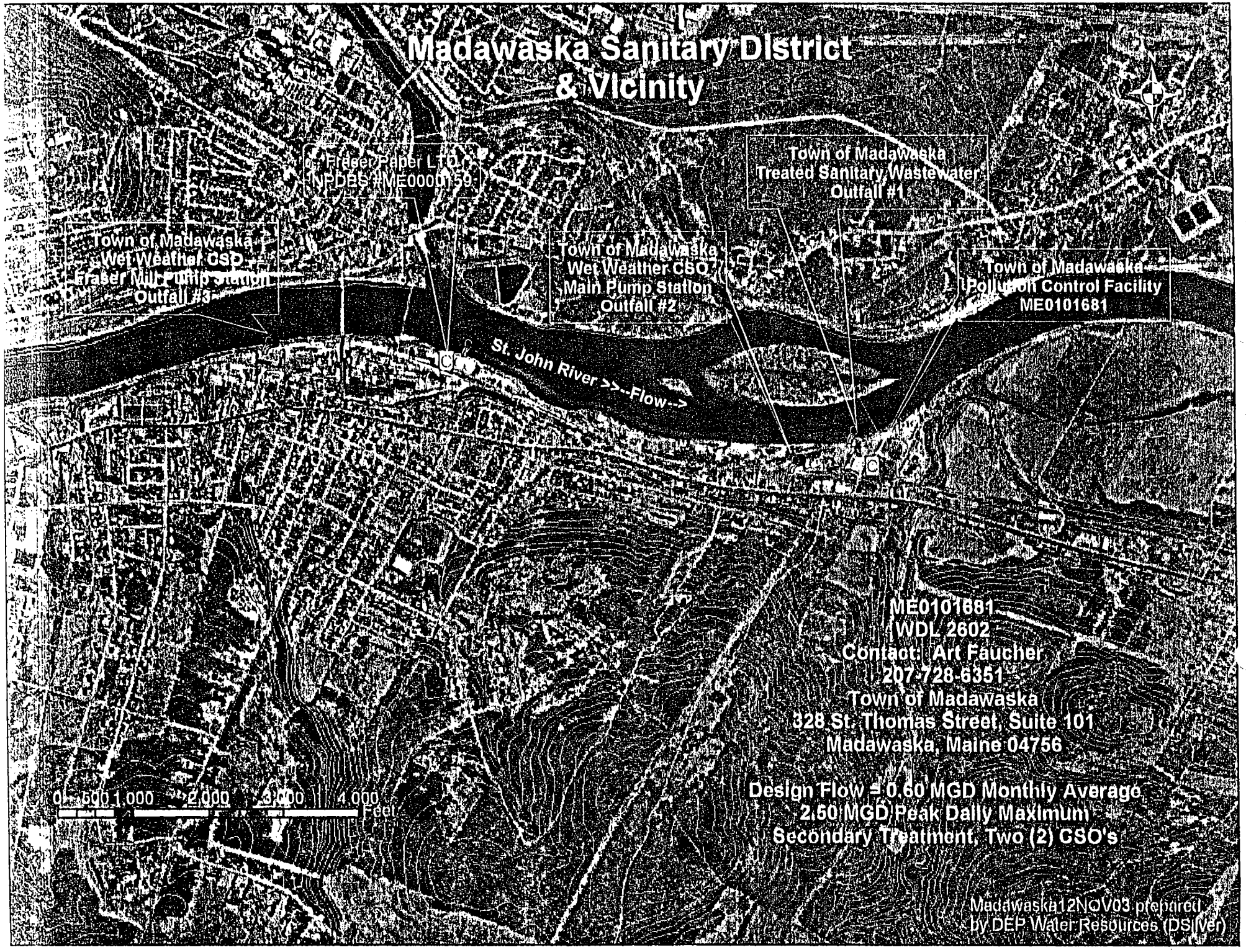
11. RESPONSE TO COMMENTS

During the period of July 17, 2004, through the issuance date of the permit/license, the Department solicited comments on the proposed draft permit/license to be issued for the discharge(s) from Fraser Paper Limited's Madawaska mill. 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



68°25'00" 68.4167°
68°20'00" 68.3333°
68°15'00" 68.2500°
47°20'00" 47.3333°
47°15'00" 47.2500°
Edmundston
Customs
Open 24 hours/day
7 days/week
Madawaska
St. David
NEW BRUN
Upper Frenchville
Frenchville
St. Luce Station
Northern Aroostook
Lake Mtn
Cyr Mtn
Morin Mtn
Cleveland
St. Agatha
Gagnon Hill
Daigle
Dickey Pond
Sinclair
Guerette
MUD LAKE
NEW CANADA
CROSS
Little California Pond
Dimock Pond
Little Black Lake
Germain Lake
Brise Coulotte Lake
Bouchain Lake
Michaud I
Michaud Brook
Dickey Brook
Gagnon Brook
Pelletier Brook
Dionne Corner
Fourmier
Lagasse
Beaulieu
Thibodeau
Lower Beaulieu
Gr
Continue on Map 67


Madawaska Sanitary District
& Vicinity
Fraser Paper LTD.
NPDES #ME0000159
Town of Madawaska
Treated Sanitary Wastewater
Outfall #1
Town of Madawaska
Wet Weather CSO
Fraser Mill Pump Station
Outfall #3
Town of Madawaska
Wet Weather CSO
Main Pump Station
Outfall #2
Town of Madawaska
Pollution Control Facility
ME0101681
St. John River >>--Flow-->
ME0101681
WDL 2602
Contact: Art Faucher
207-728-6351
Town of Madawaska
328 St. Thomas Street, Suite 101
Madawaska, Maine 04756
Design Flow = 0.60 MGD Monthly Average
2.50 MGD Peak Daily Maximum
Secondary Treatment, Two (2) CSO's
0 500 1,000 2,000 3,000 4,000
Feet
Madawaska12NOV03 prepared
by DEP Water Resources (DSilver)

ATTACHMENT B

Attachment A

Evolution of permit limits for BOD and TSS:

Monthly Average	Daily Maximum
Guideline limits based on 40	CFR §430 Sub-part R
BOD 13,745 lbs/day TSS 19,081 lbs/day	BOD 26,519 lbs/day TSS 35,574 lbs/day
NPDES Permit limits 09/22/88	Summer July 1-September 30
BOD 9,950 lbs/day TSS 6,000 lbs/day	BOD 14,000 lbs/day TSS 12,000 lbs/day
NPDES Permit limits 09/22/88	Winter October 1-June 30
BOD 12,300 lbs/day TSS 9,810 lbs/day	BOD 19,310 lbs/day TSS 19,130 lbs/day
PERMIT MODIFICATION 06/25/91	Summer June 1-October 30
BOD 12,300 lbs/day TSS 9,810 lbs/day	BOD 19,310 lbs/day TSS 12,200 lbs/day
PERMIT MODIFICATION 06/25/91	Winter November 1-May 31
BOD 12,300 lbs/day TSS 9,810 lbs/day	BOD 19,310 lbs/day TSS 19,130 lbs/day
DRAFT PERMIT FOR REISSUANCE	Summer June 1-October 30
BOD 12,300 lbs/day TSS 9,810 lbs/day	BOD 19,310 lbs/day TSS 12,200 lbs/day
DRAFT PERMIT FOR REISSUANCE	Winter November 1-May 31
BOD 12,360 lbs/day TSS 9,893 lbs/day	BOD 19,425 lbs/day TSS 19,284 lbs/day

Biochemical Oxygen Demand (BOD) & Total Suspended Solids (TSS)

The 1993 draft permit limits for the summer period shall remain the same as the 1991 NPDES permit modification based on the Waste Load and water quality considerations. Paul Mitnik of the DEP-DEELS concluded from the data that during the summer period of June 1 to October 30, the river segment downstream of Fraser Paper is water quality limited. He recommended that there be no increase in the permitted BOD & TSS limits.

BOD and TSS limits for the winter months shall be raised incrementally to reflect a production increase from 1610 dry tons per day to 1617. The production increase is 7 dry tons per day.

§ 430 Guidelines, Pounds of BOD & TSS per Ton of Production			
BOD AVG.	BOD MAX.	TSS AVG.	TSS MAX.
8.5	16.4	11.8	22.0

(Guidelines 40 CFR §430 Sub-part R) (Production Increase) = Winter Limit Increase

(8.5 lbs/Ton Production)(7 ton increase) = 59.5 lbs BOD Ave.

(16.4 lbs/Ton Production)(7 ton increase) = 114.8 lbs BOD Max.

(11.8 lbs/Ton Production)(7 ton increase) = 82.6 lbs TSS Ave.

(22.0 lbs/Ton Production)(7 ton increase) = 154.0 lbs TSS Max.

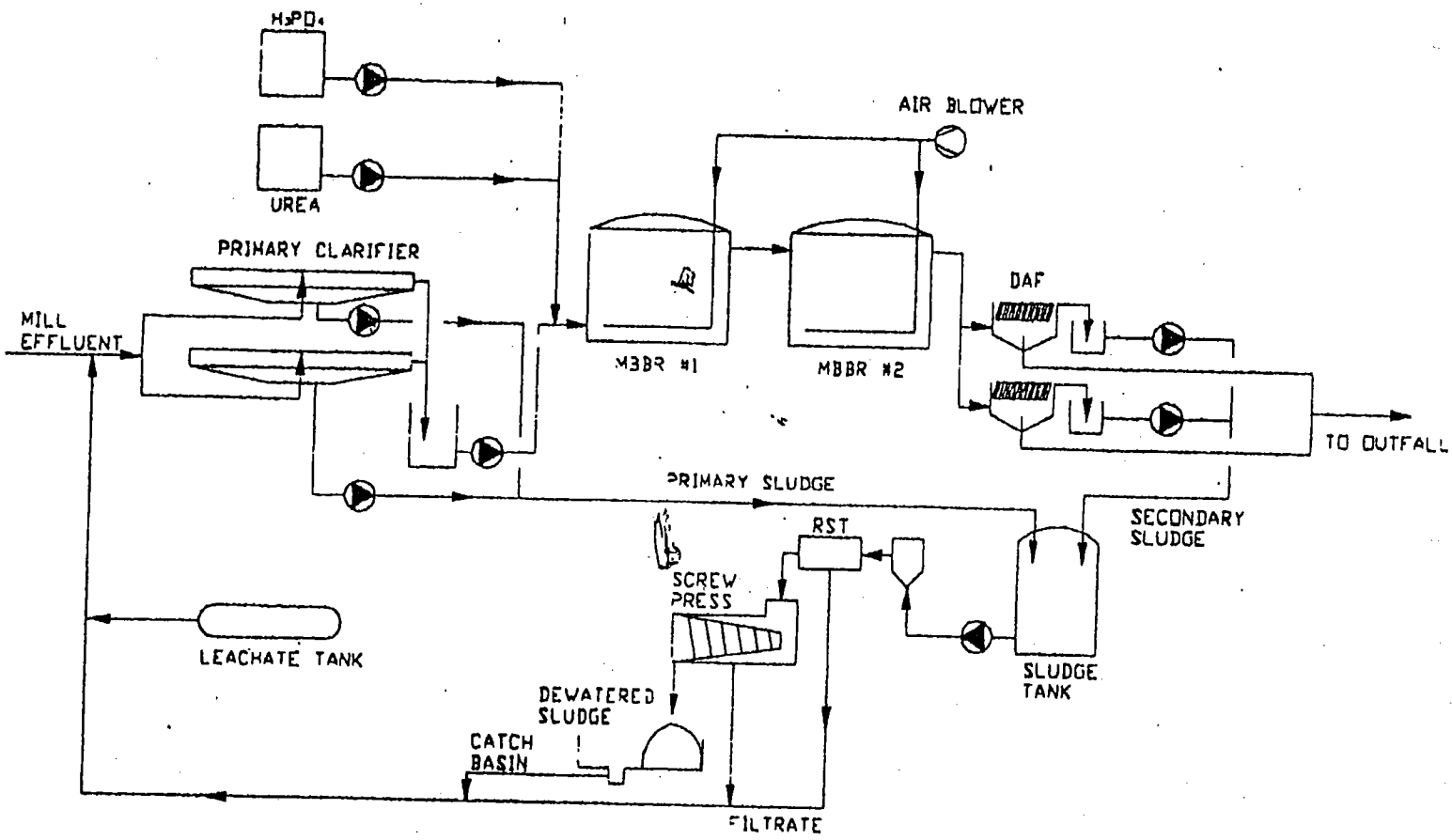
See Fact Sheet Attachment A, for a comparison table of permit, license and modification limits for BOD and TSS.

pH Limits

All outfalls are required to meet a pH range of 5.0 to 9.0 S.U., the maximum range allowed by Federal Guidelines, 40 CFR § 430, Sub-part R.

ATTACHMENT C

Treatment System Description



ATTACHMENT D

FRASER PAPER
ST. JOHN RIVER

Flow: 25.0 MGD
Chronic dilution: 29.8:1
Acute dilution: 28.9:1

Species	Test	Test Result %	Sample Date
FATHEAD	A_NOEL	100	11/11/1993
FATHEAD	C_NOEL	100	11/11/1993
WATER FLEA	A_NOEL	5	11/11/1993
WATER FLEA	C_NOEL	<1	11/11/1993
TROUT	A_NOEL	100	02/16/1994
TROUT	C_NOEL	30	02/16/1994
WATER FLEA	A_NOEL	100	02/16/1994
WATER FLEA	C_NOEL	1	02/16/1994
FATHEAD	A_NOEL	100	06/23/1994
FATHEAD	C_NOEL	100	06/23/1994
WATER FLEA	A_NOEL	10	06/23/1994
WATER FLEA	C_NOEL	<1	06/23/1994
FATHEAD	A_NOEL	100	07/21/1994
FATHEAD	C_NOEL	100	07/21/1994
FATHEAD	LC50	>100	07/21/1994
WATER FLEA	A_NOEL	10	07/21/1994
WATER FLEA	C_NOEL	<1	07/21/1994
WATER FLEA	LC50	47	07/21/1994
FATHEAD	A_NOEL	100	12/10/1994
FATHEAD	C_NOEL	30	12/10/1994
WATER FLEA	A_NOEL	30	12/10/1994
WATER FLEA	C_NOEL	<1	12/10/1994
FATHEAD	A_NOEL	100	06/03/1996
FATHEAD	LC50	>100	06/03/1996
WATER FLEA	A_NOEL	100	06/03/1996
WATER FLEA	LC50	>100	06/03/1996
FATHEAD	A_NOEL	100	06/09/1997
FATHEAD	LC50	>100	06/09/1997
WATER FLEA	A_NOEL	100	06/09/1997
WATER FLEA	LC50	>100	06/09/1997
FATHEAD	A_NOEL	100	06/06/1999
FATHEAD	C_NOEL	100	06/06/1999
FATHEAD	LC50	>100	06/06/1999
WATER FLEA	A_NOEL	100	06/06/1999
WATER FLEA	C_NOEL	1.0	06/06/1999
WATER FLEA	LC50	>100	06/06/1999
TROUT	A_NOEL	100	08/15/1999
TROUT	LC50	>100	08/15/1999
WATER FLEA	A_NOEL	100	08/15/1999
WATER FLEA	C_NOEL	1.0	08/15/1999
WATER FLEA	LC50	>100	08/15/1999

Species	Test	Test Result %	Sample Date
FATHEAD	A_NOEL	100	11/14/1999
FATHEAD	C_NOEL	30	11/14/1999
FATHEAD	LC50	>100	11/14/1999
WATER FLEA	A_NOEL	100	11/14/1999
WATER FLEA	C_NOEL	<1.0	11/14/1999
WATER FLEA	LC50	>100	11/14/1999
FATHEAD	A_NOEL	100	01/31/2000
FATHEAD	C_NOEL	100	01/31/2000
TROUT	A_NOEL	100	06/11/2000
TROUT	C_NOEL	30	06/11/2000
TROUT	LC50	>100	06/11/2000
WATER FLEA	A_NOEL	4.0	06/11/2000
WATER FLEA	C_NOEL	<1.0	06/11/2000
WATER FLEA	LC50	7.4	06/11/2000
TROUT	A_NOEL	100	09/17/2000
TROUT	C_NOEL	1	09/17/2000
TROUT	LC50	>100	09/17/2000
WATER FLEA	A_NOEL	38.2	09/17/2000
WATER FLEA	C_NOEL	1	09/17/2000
WATER FLEA	LC50	65.5	09/17/2000
TROUT	A_NOEL	100	10/22/2000
TROUT	LC50	>100	10/22/2000
FATHEAD	A_NOEL	100	11/28/2000
FATHEAD	C_NOEL	30	11/28/2000
FATHEAD	LC50	>100	11/28/2000
WATER FLEA	A_NOEL	100	11/28/2000
WATER FLEA	C_NOEL	3.1	11/28/2000
WATER FLEA	LC50	>100	11/28/2000
FATHEAD	A_NOEL	100	03/18/2001
FATHEAD	C_NOEL	30	03/18/2001
FATHEAD	LC50	>100	03/18/2001
WATER FLEA	A_NOEL	100	03/18/2001
WATER FLEA	C_NOEL	<1	03/18/2001
WATER FLEA	LC50	>100	03/18/2001
TROUT	A_NOEL	100	06/17/2001
TROUT	C_NOEL	50	06/17/2001
TROUT	LC50	100	06/17/2001
WATER FLEA	A_NOEL	100	06/17/2001
WATER FLEA	C_NOEL	<1	06/17/2001
WATER FLEA	LC50	>100	06/17/2001
TROUT	A_NOEL	100	09/16/2001

Species	Test	Test Result %	Sample Date
TROUT	C_NOEL	30	09/16/2001
TROUT	LC50	100	09/16/2001
WATER FLEA	A_NOEL	100	09/16/2001
WATER FLEA	C_NOEL	<1	09/16/2001
WATER FLEA	LC50	>100	09/16/2001
WATER FLEA	A_NOEL	100	11/26/2001
WATER FLEA	LC50	>100	11/26/2001
FATHEAD	A_NOEL	56.3	12/02/2001
FATHEAD	C_NOEL	30	12/02/2001
FATHEAD	LC50	>100	12/02/2001
WATER FLEA	A_NOEL	13.1	12/02/2001
WATER FLEA	LC50	26	12/02/2001
FATHEAD	A_NOEL	55.5	03/03/2002
FATHEAD	C_NOEL	30	03/03/2002
FATHEAD	LC50	>100	03/03/2002
WATER FLEA	A_NOEL	14.0	03/03/2002
WATER FLEA	C_NOEL	<1.0	03/03/2002
WATER FLEA	LC50	30.8	03/03/2002
TROUT	A_NOEL	100	06/16/2002
TROUT	C_NOEL	30	06/16/2002
TROUT	LC50	>100	06/16/2002
WATER FLEA	A_NOEL	100	06/16/2002
WATER FLEA	C_NOEL	<1.0	06/16/2002
WATER FLEA	LC50	>100	06/16/2002
TROUT	A_NOEL	100	09/22/2002
TROUT	C_NOEL	100	09/22/2002
TROUT	LC50	>100	09/22/2002
WATER FLEA	A_NOEL	100	09/22/2002
WATER FLEA	C_NOEL	<1.0	09/22/2002
WATER FLEA	LC50	>100	09/22/2002
FATHEAD	A_NOEL	100	12/10/2002
FATHEAD	C_NOEL	100	12/10/2002
FATHEAD	LC50	>100	12/10/2002
WATER FLEA	A_NOEL	100	12/10/2002
WATER FLEA	C_NOEL	100	12/10/2002
WATER FLEA	LC50	>100	12/10/2002
TROUT	A_NOEL	100	06/22/2003
TROUT	C_NOEL	100	06/22/2003
TROUT	LC50	>100	06/22/2003
WATER FLEA	A_NOEL	100	06/22/2003
WATER FLEA	C_NOEL	100	06/22/2003

Flow: 29.0 MGD
Chronic dilution: 29.8:1
Acute dilution: 28.9:1

Species	Test	Test Result %	Sample Date
WATER FLEA	LC50	>100	06/22/2003
TROUT	A_NOEL	100	09/14/2003
TROUT	C_NOEL	100	09/14/2003
TROUT	LC50	>100	09/14/2003
WATER FLEA	A_NOEL	100	09/14/2003
WATER FLEA	C_NOEL	30	09/14/2003
WATER FLEA	LC50	>100	09/14/2003
FATHEAD	A_NOEL	100	11/30/2003
FATHEAD	C_NOEL	100	11/30/2003
FATHEAD	LC50	>100	11/30/2003
WATER FLEA	A_NOEL	100	11/30/2003
WATER FLEA	C_NOEL	30	11/30/2003
WATER FLEA	LC50	>100	11/30/2003
FATHEAD	A_NOEL	100	02/15/2004
FATHEAD	C_NOEL	100	02/15/2004
FATHEAD	LC50	>100	02/15/2004
WATER FLEA	A_NOEL	100	02/15/2004
WATER FLEA	C_NOEL	100	02/15/2004
WATER FLEA	LC50	>100	02/15/2004

ATTACHMENT E

Sample Date: 05/16/1999
Plant flows not provided

'otal Tests: 136
:issing Compounds: 0
'ests With High DL: 0

M = 0 V = 0 A = 0
BN = 0 P = 0 other = 0

Sample Date: 05/09/2000
Plant flows provided

otal Tests: 126
issing Compounds: 0
ests With High DL: 0

mon.(MGD)= 7.039
day(MGD)= 7.034

M = 0 V = 0 A = 0
BN = 0 P = 0 other = 0

Sample Date: 01/09/2001
Plant flows not provided

otal Tests: 142
issing Compounds: 1
ests With High DL: 1

M = 1 V = 0 A = 0
BN = 0 P = 0 other = 0

Sample Date: 05/07/2002
Plant flows provided

otal Tests: 140
issing Compounds: 0
ests With High DL: 0

mon.(MGD)= 8.670
day(MGD)= 6.966

M = 0 V = 0 A = 0
BN = 0 P = 0 other = 0

Sample Date: 05/06/2003
Plant flows provided

otal Tests: 142
issing Compounds: 0
ests With High DL: 1

mon.(MGD)= 6.781
day(MGD)= 6.357

M = 1 V = 0 A = 0
BN = 0 P = 0 other = 0

Sample Date: 08/17/2003
Plant flows provided

Total Tests: 135
Missing Compounds: 0
Tests With High DL: 0

mon.(MGD)= 4.966
day(MGD)= 4.720

M = 0 V = 0 A = 0
BN = 0 P = 0 other = 0