ME0101702
FILE

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

Mr. Charles M. Applebee
Superintendent
City of Gardiner WWTF
6 Church Street
Gardiner, Maine 04345

July 1, 2004

RE: Maine Waste Discharge License (WDL) Application #W002655-5L-G-R
Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0101702
Final Permit/License

Dear Mr. Applebee:

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

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

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: Beth DeHaas, DEP/CMRO
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

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

CITY OF GARDINER	)	MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	)	ELIMINATION SYSTEM PERMIT
GARDINER, KENNEBEC COUNTY, MAINE	)	AND
ME0101702	)	WASTE DISCHARGE LICENSE
W002655-5L-G-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 the CITY OF GARDINER (City hereinafter), 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) #W002655-5L-E-R which was issued on June 3, 1999 and is due to expire on June 3, 2004. The 6/3/99 WDL authorized the discharge of up to a monthly average flow of 4.5 million gallons per day (MGD) of secondary treated sanitary waste waters to the Kennebec River, Class C (reclassified to Class B on 9/12/03), in Gardiner, Maine. The 6/3/99 WDL also authorized the discharge of an unspecified quantity of untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the Kennebec River.

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 #ME0101702 (same as NPDES permit number) will utilized as the primary reference number.

PERMIT SUMMARY

This permitting action is similar to the 6/3/99 WDL action in that it is;

1. Carrying forward the monthly average flow limit of 4.5 MGD.

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

PERMIT SUMMARY (cont'd)

3. Carrying forward the daily maximum technology based concentration limits for BOD and TSS.

4. Carrying forward the reporting requirement for the daily maximum mass loadings for BOD_5 and TSS.

5. Carrying forward the technology based removal rate of 85% for both BOD and TSS except when influent concentrations are less 200 mg/L.

6. Carrying forward the technology based daily maximum concentration limit for settleable solids.

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

8. Carrying forward the daily maximum technology based concentration limit for total residual chlorine but eliminating the reference to the limit and monitoring requirement being seasonal.

9. Carrying forward the pH range limitation of 6.0 –9.0 standard units.

10. Carrying forward the screening level whole effluent toxicity (WET) and chemical specific (priority pollutant) testing which is to be conducted in the 12-month period prior to the expiration date of the permit. No surveillance level testing is required during the first four years of the permit.

11. Carrying forward a seasonal 1/Month monitoring requirement for total phosphorus.

This permitting action is different than the 6/3/99 WDL action in that it is;

12. Reducing the monitoring frequency for settleable solids from 1/Day to 5/Week.

13. Modifying the season for monitoring for total phosphorus from May – September to June – September.

14. Requiring the permittee to develop and maintain an up-to-date Operations and Maintenance (O&M) Plan and Wet Weather Management Plan.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated June3, 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 natural resource, that water quality will be maintained and protected;

   c. The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   d. Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   e. Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The 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 CITY OF GARDINER, to discharge up to a monthly average flow of 4.5 million gallons per day (MGD) of secondary treated sanitary waste waters and an unspecified quantity of untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the Kennebec River, Class B, in Gardiner. The discharges shall be subject to the attached conditions and all applicable standards and regulations including:

1. "*Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits*," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. This permit expires five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 1ST DAY OF July, 2004.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: _____
Dawn Gallagher, COMMISSIONER

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application March 8, 2004.

Date of application acceptance March 8, 2004.

FILED
JUL - 2 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

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 Kennebec 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						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]	4.5 MGD[03]	---	Report (MGD)	---	---	---	Continuous [99/99]	Recorder [RC]
Biochemical Oxygen Demand (BOD_5) [00310]	1,126 lbs/Day [26]	1,689 lbs/Day [26]	Report lbs/Day[26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	3/Week [03/07]	Composite [24]
BOD_5 % Removal (1) [81010]	---	---	---	85%[23]	---	---	1/Month[01/30]	Calculate[CA]
Total Suspended Solids (TSS) [00530]	1,126 lbs/Day [26]	1,689 lbs/Day [26]	Report lbs/Day[26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	3/Week [03/07]	Composite [24]
TSS % Removal (1) [81011]	---	---	---	85%[23]	---	---	1/Month[01/30]	Calculate[CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	5/Week [05/07]	Grab [GR]
E. coli Bacteria (2) [31633] *(May 15 – September 30)*	---	---	---	142/100 ml(3) [13]	---	949/100 ml [13]	3/Week [03/07]	Grab [GR]
Total Residual Chlorine(4) [50060]	---	---	---	---	---	1.0 mg/L [19]	2/Day [02/01]	Grab [GR]
pH (Std. Units) [00400]	---	---	---	---	---	6.0-9.0 [12]	1/Day [01/01]	Grab [GR]

SPECIAL CONDITIONS

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

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
Total Phosphorus [00665] *(June 1 – September 30)*	Report lbs/Day [26]	---	Report lbs/Day [26]	Report mg/L [19]	---	Report mg/L [19]	1/Month[01/30]	Composite [24]
Arsenic Total	0.57 lbs/Day	---	---	22 ug/L	---	---	1/Year [01/YR]	Composite [24]

SCREENING LEVEL TESTING – Beginning 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) (5)								
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(6) [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 Locations:

Influent sampling for BOD_5 and TSS shall be sampled after the bar screen but prior to the rolling screens.

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

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

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

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** - 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.

3. ***E. coli*** **bacteria** – The monthly average limitation is a geometric mean limitation and shall be calculated and reported as such.

4. **Total Residual Chlorine** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge.

SPECIAL CONDITIONS

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

Footnotes:

5. **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 1.3% and 0.27% 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 twelve months prior to the expiration date of the permit, the permittee shall initiate screening level WET tests at a frequency of one per year (third calendar quarter). Testing shall be conducted on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing.

   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.

6. **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 twelve months prior to the expiration date of the permit, screening level chemical specific testing shall be conducted at a frequency of four per year (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

SPECIAL CONDITIONS

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

Footnotes:

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.

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.

SPECIAL CONDITIONS

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 IV** 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.

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
Central Maine Regional Office
Bureau of Land and Water Quality
Division of Compliance, Engineering & Technical Assistance
17 State House Station
Augusta, Maine 04333

SPECIAL CONDITIONS

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.

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.

SPECIAL CONDITIONS

I. WET WEATHER FLOW MANAGEMENT PLAN

On or before February 1, 2005, the permittee shall submit to the Department for review and approval, 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

Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility, the permittee shall submit an updated O&M Plan to their Department inspector for review and comment. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

By December 31 of each year (beginning December 31, 2006), or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and EPA personnel upon request.

K. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

The permittee is not authorized to receive condensed septage from commercial septage haulers without a formal modification of this permit to do so. The permittee is authorized to accept up to 100 gallons per day and up to 4,000 gallons per year of holding tank wastes (with or without chemicals) from recreational vehicles and campers.

L. COMBINED SEWER OVERFLOWS (CSO's)

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.

1. CSO locations

Outfall #	Location	Receiving Water & Class
002	Rolling Dam	Rolling Dam Brook, Class B
003	Maine Avenue Pump Station	Kennebec River, Class B

SPECIAL CONDITIONS

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

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.

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 Facilities Plan, Gardiner, Maine,* dated March 1995 and subsequently updated in September of 2000. Key milestones approved in most recent abatement schedule or agreed to by the permittee and Department that the permittee is required to comply with are:

SPECIAL CONDITIONS

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

On or before May 31, 2006, ***(PCS Code 04599)*** the permittee shall substantially complete construction of the CSO related work at the Maine Avenue pump station, the force main and relief sewer and the upgrade of the waste water treatment facility.

If needed, **on or before January 1, 2009,** ***(PCS Code 06699)*** the permittee shall submit an updated CSO Master Plan and abatement schedule to the Department for review and approval.

To modify the dates and or projects specified above, the permittee must file an application with the Department to formally modify this permit. The remaining work items identified in the abatement 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 implementation schedule.

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 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 B 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.

SPECIAL CONDITIONS

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

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. Any sewer extensions upstream of a CSO must be reviewed and approved by the Department prior to their connection to the collection system. Pre-approved sewer extensions totaling up to 25,000 gallons per day from the Libby Hill Industrial Park are exempt from this provision. A Sewer Extension/Addition Reporting Form shall be completed and submitted to the Department along with plans and specifications of the proposed extension/addition.

8. Annual CSO Progress Reports (see Section 7 of Chapter 570 of Department Rules)
   By March 1 of each year ***(PCS Code 33101)***, the permittee shall submit a *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:

SPECIAL CONDITIONS

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

CITY OF GARDINER
WET WEATHER
SEWAGE DISCHARGE
CSO # AND NAME

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. CHAPTER 530.5(B)(7)(c)(iii) CERTIFICATION

By December 31 of each calendar year, the permittee shall provide the Department with a certification describing any of the following that have occurred since the effective date of this permit:

1. Increases in the number, types and flows of industrial, commercial or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic.

2. Changes in the condition or operations of the facility that may increase the toxicity of the discharge.

3. Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge.

4. Increases in the type or volume of hauled wastes accepted by the facility.

5. The Department reserves the right to reinstate annual (surveillance level) testing or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedences of ambient water quality criteria/thresholds.

SPECIAL CONDITIONS

N. 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.

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			tro ut			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		tro ut		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. _____

ATTACHMENT B

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
CSO ACTIVITY AND VOLUMES

MUNICIPALITY OR DISTRICT	MEPDES / NPDES PERMIT NO.
REPORTING YEAR	SIGNED BY:
YEARLY TOTAL PRECIPITATION INCHES	DATE:

CSO EVENT NO.	START DATE OF STORM	PRECIP. DATA		FLOW DATA (GALLONS PER DAY) OR BLOCK ACTIVITY("1")							
		TOTAL INCHES	MAX. HR. INCHES	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	EVENT OVERFLOW GALLONS	EVENT DURATION HRS
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
	TOTALS										

Note 1: Flow data should be listed as gallons per day. Storms lasting more than one day should show total flow for each day.

Note 2: Block activity should be shown as a "1" if the block floated away.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **June 3, 2004**

PERMIT NUMBER: **ME0101702**
LICENSE NUMBER: **W002655-5L-G-R**

NAME AND ADDRESS OF APPLICANT:

City of Gardiner
6 Church Street
Gardiner, Maine 04345

COUNTY: **Kennebec County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

540 River Avenue
Gardiner, Maine 04345

RECEIVING WATER/CLASSIFICATION: **Kennebec River/Class B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Charles Applebee**
Superintendent, WWTF
(207) 582-1351

1. APPLICATION SUMMARY

Application: The applicant has applied to the Department for renewal of Department Waste Discharge License (WDL) #W002655-5L-E-R which was issued on June 3, 1999 and is due to expire on June 3, 2004. The 6/3/99 WDL authorized the discharge of up to a monthly average flow of 4.5 million gallons per day (MGD) of secondary treated sanitary waste waters to the Kennebec River, Class C (reclassified to Class B on 9/12/03), in Gardiner, Maine. The 6/3/99 WDL also authorized the discharge of untreated combined sanitary and storm water from two (2) combined sewer overflow (CSO) outfalls to the Kennebec River.

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 #ME0101702 (same as NPDES permit) as the primary reference number for the City's MEPDES permit. NPDES permit #ME0101702 last issued by the EPA on September 30, 1998 will be replaced by the final MEPDES permit upon issuance. Once replaced, all terms and conditions of the NPDES become null and void.

b. Terms and Conditions: **This permitting action is similar to the 6/3/99 WDL action in that it is;**

1. Carrying forward the monthly average flow limit of 4.5 MGD.

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

3. Carrying forward the daily maximum technology based concentration limits for BOD and TSS.

4. Carrying forward the reporting requirement for the daily maximum mass loadings for BOD_5 and TSS.

5. Carrying forward the technology based removal rate of 85% for both BOD and TSS TSS except when influent concentrations are less 200 mg/L.

6. Carrying forward the technology based daily maximum concentration limit for settleable solids.

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

8. Carrying forward the daily maximum technology based concentration limit for total residual chlorine but eliminating the reference to the limit and monitoring requirement being seasonal.

9. Carrying forward the pH range limitation of 6.0 –9.0 standard units.

10. Carrying forward the screening level whole effluent toxicity (WET) and chemical specific (priority pollutant) testing which is to be conducted in the 12-month period prior to the expiration date of the permit. No surveillance level testing is required during the first four years of the permit.

2. PERMIT SUMMARY (cont'd)

11. Carrying forward a seasonal 1/Month monitoring requirement for total phosphorus.

This permitting action is different than the 6/3/99 WDL action in that it is;

12. Reducing the monitoring frequency for settleable solids from 1/Day to 5/Week.

13. Modifying the season for monitoring for total phosphorus from May – September to June 1 – September.

14. Requiring the permittee to develop and maintain an up-to-date Operations and Maintenance (O&M) Plan and Wet Weather Management Plan.

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

September 30, 1998 – The U.S. EPA issued NPDES permit #ME010702 for a five-year term.

June 3, 1999 – The Department issued WDL #W002655-5L-E-R for a five-year term.

May 23, 2000 – The Department administratively modified WDL #W002655-5L-E-R by establishing interim average and maximum concentration limits for mercury.

July 20, 2001 – The Department issued MEPDES permit #ME0101702/WDL modification #W002655-5L-F-M. This permitting/licensing action superseded the NPDES permit which resulted in the terms and conditions of the NPDES permit being null and void.

d. Source Description: - The waste water treatment facility receives sanitary waste water flows from approximately 2,750 residential, commercial and industrial users in the City of Gardiner. The City's sewer collection system is approximately 10 miles in length and has nine (9) pump stations. Two (2) of the pump stations have on-site back-up power while five (5) are served by portable generator units. There are two (2) permitted combined Sewer Overflow (CSO's) associated with the collection system and are listed in Special Condition L, *Combined Sewer Overflows (CSO),* of this permitting action.

e. Waste Water Treatment: Waste waters conveyed to the treatment facility receive a secondary level of treatment via a mechanical bar screen, two aerated grit chambers, two rotating drum screens, two parallel basins each with two medium density and three high density rotating biological contactors (RBC's), two secondary clarifiers and two chlorine contact tanks. Flow is measured utilizing a parshall flume with a sonic level measuring device. The facility also has four aerobic sludge digestors for processing sludge generated on site. The sludge is dewatered by two filter belt presses and shipped offsite for composting.

2. PERMIT SUMMARY (cont'd)

In 1997, the City of Gardiner upgraded the waste water treatment facility to receive and treat up to 4.5 MGD, up from 1.65 MGD. The primary purpose of the upgrade was to eliminate a bottleneck at the treatment plant headworks which was restricting wet weather flows from reaching the treatment facility. By improving the hydraulic capacity of the headworks, more waste water would be treated at the facility and thereby reduce the frequency and magnitude of untreated CSO discharges via the two permitted CSO's, one at the Maine Avenue pump station and one at the Rolling Dam Brook diversion structure.

Major components of the 1997 upgrade consisted of:

1) The addition of two-speed motors on the influent screw pumps.

2) The replacement and upgrade of the existing mechanically-cleaned bar screen.

3) The modification of the hand-cleaned bar-rack in the bypass channel.

4) The installation of a high-flow bypass around the fine rotating screens.

5) The replacement of influent flow metering equipment.

6) The installation of telemetering at the CSO locations.

See Attachment A of this Fact Sheet for a schematic of the waste water treatment processes.

The City of Gardiner is currently planning a large CSO Abatement Project as part of the CSO Master Plan. The proposed project will eliminate the CSO at the Rolling Dam Brook Diversion Structure and will minimize overflows at the Maine Avenue pump station CSO. Construction is planned to start in September 2004 and be completed in May 2006.

The proposed project includes modifications at the Maine Avenue pump station to upgrade its capacity, construction of a relief force main, and construction of approximately 5,400 linear feet of relief sewer pipe to convey additional flow to the treatment plant. At the plant, several structures will be added in order to provide primary treatment for the wet weather flows before disinfection and discharge to the Kennebec River. The proposed construction includes; a CSO bypass structure, a CSO pump station, one primary clarifier measuring 45 feet in diameter and a high rate chlorination/dechlorination system. The new primary clarifier will be used to treat the secondary flows during non-CSO flows.

2. PERMIT SUMMARY (cont'd)

The maximum flow to the treatment plant that will receive secondary treatment will remain unchanged at 4.5 MGD. The proposed project will allow up to another 5.0 MGD of wet weather flow to receive primary treatment only and disinfection prior to discharge.

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)(13 &14) classify the Kennebec River as follows:

From the Father John J. Curran Bridge in Augusta to a line drawn across the tidal estuary of the Kennebec River due east of Abagadasset Point - Class B. Further, the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained. Further, the license limits for total residual chlorine and bacteria for existing direct discharges of wastewater to this segment as of January 1, 2003 must remain the same as the limits in effect on that date and must remain in effect until June 30, 2009 or upon renewal of the license, whichever comes later. Thereafter, license limits for total residual chlorine and bacteria must be those established by the department in the license and may include a compliance schedule pursuant to section 414-A, subsection 2.

From a line drawn across the tidal estuary of the Kennebec River due east of Abagadasset Point, to a line across the southwesterly area of Merrymeeting Bay formed by an extension of the Brunswick-Bath boundary across the bay in a northwesterly direction to the westerly shore of Merrymeeting Bay and to a line drawn from Chop Point in Woolwich to West Chop Point in Bath - Class B. Further, the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained.

4. RECEIVING WATER STANDARDS (cont'd)

Maine law, 38 M.R.S.A., Section 465(3 & 4) describes the classification standards for Class B and Class C waters as follows:

Class B waters

Class B shall be the 3rd highest classification. Class B waters shall be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; and navigation; and as habitat for fish and other aquatic life. The habitat shall be characterized as unimpaired.

Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.

The dissolved oxygen content of Class B waters shall be not less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration shall not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration shall not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of Escherichia coli bacteria of human origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 427 per 100 milliliters.

Discharges to Class B waters shall not cause adverse impact to aquatic life in that the receiving waters shall be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

5. RECEIVING WATER CONDITIONS

A table entitled, Category 4-B1: *Rivers and Streams Impaired By Pollutants, Pollution Control Requirements Reasonably Expected To Result in Attainment*, in a document entitled 2002 Integrated Water Quality Monitoring And Assessment Report, (referred to as the 305b Report) published by the Department states that a 55.2-mile segment of the Kennebec River from the Carrabassett River down to and including Merrymeeting Bay is not attaining the standards of their assigned classification due to the presence of toxics (mercury, dioxin, PCB's) that has resulted in a fish consumption advisory on the river.

5. RECEIVING WATER CONDITIONS (cont'd)

It is noted that all fresh water bodies in Maine carry a fish advisory for mercury due to atmospheric transport and deposition. Maine law 38 M.R.S.A., §420 and Department Rule, Chapter 519, *Interim Effluent Limitations and Controls For the Discharge of Mercury*, establishes controls of mercury to surface waters of the State and United States through interim effluent limitations and implementation of pollution prevention plans. On May 23, 2000, the Department administratively modified the City's WDL by establishing an average concentration limit of 12.7 ng/L and a daily maximum concentration limit of 19.1 ng/L with a monitoring frequency of 1/Quarter based on a past demonstrated performance evaluation of four mercury test results submitted between August of 1998 and September of 1999.

As for PCB's and dioxin, the presence of PCB is not typically associated with any identifiable source but is rather a legacy of practices that predate the national ban on the use of PCB in 1979. The Department is not aware of any information that indicates the City of Gardiner's waste water treatment facility is discharging PCB's to the Kennebec River. The formation and discharge of dioxin and dioxin like compounds have been associated with historic practice of bleaching pulp with elemental chlorine. This practice has been replaced by modifying the bleaching sequence at pulp mills such the chlorine dioxide is now used which has eliminated the discharge of detectable quantities of dioxin. The Department has no information nor does it suspect that dioxin or dioxin like compounds are or will be discharged from the City of Gardiner's waste water treatment facility.

The Kennbec River at the point of discharge and below was reclassified from a Class C to a Class B waterway on September 12, 2003. This reclassification resulted in higher dissolved oxygen standards. Modeling of the Kennbec River conducted by the Department and documented in a model report entitled, Kennebec River Model Report, dated April 2000. The model indicates the average daily dissolved oxygen will marginally meet standards but tidal/diurnal variation would result in marginally non-attainment within the tidal river segment. Modeling showed that the discharge from the Gardiner facility (at full permitted flow) is responsible for approximately 1.2% of the dissolved oxygen deficit (not including indirect nutrient impacts) and 1.5% of the total phosphorus loading.

The Department is not imposing more stringent limitations at this time given that:

a) Implementation of the CSO Master Plan, specifically construction of primary treatment/disinfection bypass, will result in a reduction of CSO discharge events.
b) The facility's non-nutrient impact on the modeled dissolved oxygen deficit is insignificant
c) The Department is in the process of developing nutrient criteria that may or may not result in phosphorus limits in the future.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. Flow: The monthly average flow limitation of 4.5 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 4.5 MGD the dilution factors are as follows:

¼Acute[(1)]: 1Q10 = 526 cfs $\Rightarrow \frac{(526\ \text{cfs})(0.6464) + (4.5\ \text{MGD})}{(4.5\ \text{MGD})} = 77{:}1$

Acute: 1Q10 = 2,104 cfs[(2)] $\Rightarrow \frac{(2{,}104\ \text{cfs})(0.6464) + (4.5\ \text{MGD})}{(4.5\ \text{MGD})} = 303{:}1$

Chronic: 7Q10 =2,552 cfs[(2)] $\Rightarrow \frac{(2{,}552\ \text{cfs})(0.6464) + (4.5\ \text{MGD})}{(4.5\ \text{MGD})} = 368{:}1$

Harmonic Mean: = 5,883 cfs $\Rightarrow \frac{(5{,}883\ \text{cfs})(0.6464) + (4.5\ \text{MGD})}{(4.5\ \text{MGD})} = 846{:}1$

Footnotes

(1) Chapter 530.5 (D)(4)(a) states that analyses using numeric acute criteria for aquatic life must be based on 1/4 of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone. The 1Q10 is the lowest one-day flow over a ten-year recurrence interval. 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. Based on information provided by the City as to the configuration and location of the outfall pipe and instream hydrology information collected by the Department in calendar year 1999, the Department has made the determination that the discharge does not receive rapid and complete mixing with the receiving water, therefore the default stream flow of ¼ of the 1Q10 is applicable in acute statistical evaluations pursuant to Chapter 530.5.

(2) It is noted the dilution factors are slightly lower than the dilution factors calculated in the previous licensing action as the 7Q10 and 1Q10 critical low flow values were recalculated in calendar year 2000 as part of the Department's efforts to update the water quality model for the Kennebec River.

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

c. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS): - The previous licensing established monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule Chapter 525(3)(III). The maximum daily BOD5 and TSS concentration limits of 50 mg/L were based on a Department best professional judgment of BPT. All three concentration limits are being carried forward in this permitting action.

As for mass limitations, the previous licensing action established monthly average and weekly average limitations based on a monthly average limit of 4.5 MGD that is being carried forward in this permitting action. The limitations were calculated as follows:

Monthly average: (4.5 MGD)(8.34)(30 mg/L) = 1,126 lbs/day
Weekly average: (4.5 MGD)(8.34)(45 mg/L) = 1,689 lbs/day

No daily maximum mass limitations (report only) for BOD5 or TSS were established in the previous licensing or this permitting action as doing so may discourage the City from treating as much waste water as possible through the secondary treatment system during wet weather events.

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

Monitoring frequencies for BOD and TSS of 3/Week are being carried forward from the previous licensing action and are based on Department policy for facilities with a monthly average flow limitation greater than 1.0 MGD but less than 5.0 MGD.

d. Settleable Solids - The previous license established a daily maximum concentration limit of 0.3 ml/L that is being carried forward in this permitting action and is considered by the Department to be a limitation the represents BPT. The monitoring frequency has been reduced from 1/Day to 5/Week based on a review of the most recent five years of settleable solids data as reported on the Discharge Monitoring Report (DMR) submitted to the Department.

e. Escherichia coliform (*E. coli.*) bacteria: The previous licensing action established monthly average and daily maximum *E. coli* bacteria limits of 142 colonies/100 ml and 949 colonies/100 ml based on the State of Maine Water Classification Program criteria for Class C waters. It has been noted that the segment of the Kennebec River from the Father John J. Curran Bridge in Augusta to a line drawn across the tidal estuary of the

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

Kennebec River due east of Abagadasset Point was reclassified from Class C to Class B as of September 12, 2003. However, the statute containing the classification standards for this segment of the river was modified in part as follows:

> *Further, the license limits for total residual chlorine and bacteria for existing direct discharges of wastewater to this segment as of January 1, 2003 must remain the same as the limits in effect on that date and must remain in effect until June 30, 2009 or upon renewal of the license, whichever comes later.*

Therefore, this permitting action is carrying forward the monthly average and daily maximum *E. coli* bacteria limits of 142 colonies/100 ml and 949 colonies/100 ml respectively, from the previous licensing action.

f. Total Residual Chlorine - The previous licensing action established a daily maximum BPT limit of 1.0 mg/L for the discharge that is being carried forward in this permitting action. Limits on total residual chlorine (TRC) are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. The Department imposes the more stringent of the water quality or technology based limits in permitting actions. End-of-pipe water quality based concentration thresholds may be calculated as follows:

Parameter	Acute Criteria	Chronic Criteria	Acute Dilution	Chronic Dilution	Acute Limit	Chronic Limit
Chlorine	19 ug/L	11 ug/L	77:1	368:1	1.5 mg/L	4.0 mg/L

Example calculation: Acute – 0.019 mg/L (77) = 1.5 mg/L

In the case of the Gardiner facility, the calculated acute water quality based threshold is higher than 1.0 mg/l, thus the BPT limit of 1.0 mg/L is imposed as a daily maximum limit. In addition, carrying forward the limitation of 1.0 mg/L from the previous licensing action is consistent with the revised statue cited in Section 6(f) above.

It is noted this permitting action is removing a reference that limitations and monitoring requirements for TRC are seasonal. This reference was originally intended to coincide with the disinfection season of May 15 – September 30 of each year. However, TRC is potentially toxic at all times of the year. Therefore, whenever elemental chlorine or chlorine based compounds are used to disinfect the discharge from the waste water treatment plant, limitations and monitoring requirements are in effect and enforceable.

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

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 shifting the range limit from 6.0 – 8.5 to 6.0 –9.0 standard units pursuant to a new Department rule found at Chapter 525(3)(III)(c). The new limits are considered BPT.

h. 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 City facility in the low frequency category for WET testing as the facility has a chronic dilution factor greater than 100:1 and in the high frequency testing category for chemical specific testing as it is permitted to discharge greater than 1.0 MGD.

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

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.

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

Chapter 530.5 §C(2) states when a discharge *"...contains pollutants at levels that have a reasonable potential 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 March 8, 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 3/8/04 WET evaluation indicates that the discharge does not exceed or have a reasonable potential to exceed the critical acute or chronic WET thresholds (1.3% and 0.27% respectively – mathematical inverse of the applicable dilution factors) for any of the WET species tested to date.

As for chemical specific testing, the 3/8/04 statistical evaluation indicates a result of 7.0 ug/L for arsenic on 7/22/03 has a reasonable potential to exceed the human health AWQC for the consumption of water and organisms. Pursuant to Chapter 530.5§C(2), this permitting action establishes monthly average limits for the chemical specific parameters of concern based on the following calculations:

Chronic

Parameter	Chronic[1] Criterion	Chronic Dilution Factor	Calculated EOP[2] Chronic Con.	Month Avg. Mass Limit
Arsenic	0.018 ug/L[3]	846:1[4]	15 ug/L	0.57 lbs/day

Example Calculation:

$$\text{Arsenic} - \frac{(0.018\ \text{ug/L})(846)(8.34)(4.5\ \text{MGD})}{1000\ \text{ug/mg}} = 0.57\ \text{lbs/day}$$

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

Footnotes:

(1) Based on EPA's 1986 ambient water quality criteria (AWQC).
(2) End-of-pipe.
(3) Human health criteria (water and organisms).
(4) Harmonic mean dilution factor.

Concentration limits in this permitting action are based on Department rule Chapter 523, §6(f)(2) which states that pollutants limited in terms of mass additionally may be limited in terms of other units of measurement and the permit shall require the permittee to comply with both limitations.

In addition, EPA's Technical Support Document For Water Quality Based Toxics Control, March 1991, Chapter 5, Section 5.7, recommends that permit limits for both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards. As not to penalize the Gardiner facility for operating at flows less than the permitted flow of the waste water plant, the Department is establishing concentration limits based on a factor of 1.5 which is consistent with all other permitting actions by the Department when establishing concentration limits . Therefore, concentration limits for arsenic, have been calculated to be:

Calculated EOP Parameter	Monthly Avg. Concentration	Monthly Avg. Conc. Limit	Conc. Limit
Arsenic	15 ug/L	22 ug/L	---

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. For arsenic, this permitting action is establishing the monitoring frequency at 1/Year given this is the only value in the chemical specific testing history that exceeds or has a reasonable potential to exceed critical AWQC thresholds.

For the remaining WET species and chemical specific parameters, the absence of exceedences or reasonable potential to exceed critical thresholds or AWQC and the fact the City of Gardiner continues to meet the criteria in Department rule Chapter 530.5(B)(7)(c)(iii), the Department has made a best professional judgment to maintain a screening level of testing, 1/Year for WET testing and 4/Year (four consecutive calendar quarters) beginning twelve (12) months prior to the expiration date of the permit. It is noted Special Condition M, *Chapter 530.5 (B)(7)(c)(iii) Certification*, requires the permittee to submit a certification to the Department by the end of each calendar year indicating the characteristics of the waste water being discharge remains the same.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

The Department acknowledges that the elimination of the two (2) remaining CSO's in the collection system and the proposed construction of a secondary bypass (primary treatment only) of sanitary waste water is a costly long-term project. As the City's sewer collection system is upgraded and maintained in accordance with the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and in the volume of waste water receiving primary treatment only over time. As permitted, the Department has determined the existing water uses will be maintained and protected.

As for the fish consumption advisory due to presence of mercury and dioxin, the Department is not aware of any information that indicates the discharge from the City's waste water treatment plant has constituents in sufficient quantities that are causing or contributing to the fish advisory.

The effluent limitations in this permit are equal to or more stringent than the limits in the previous license and/or effective NPDES permit.

8. PUBLIC COMMENTS

Public notice of this application was made in the Kennebec Journal newspaper on February 26, 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.

9. DEPARTMENT CONTACTS

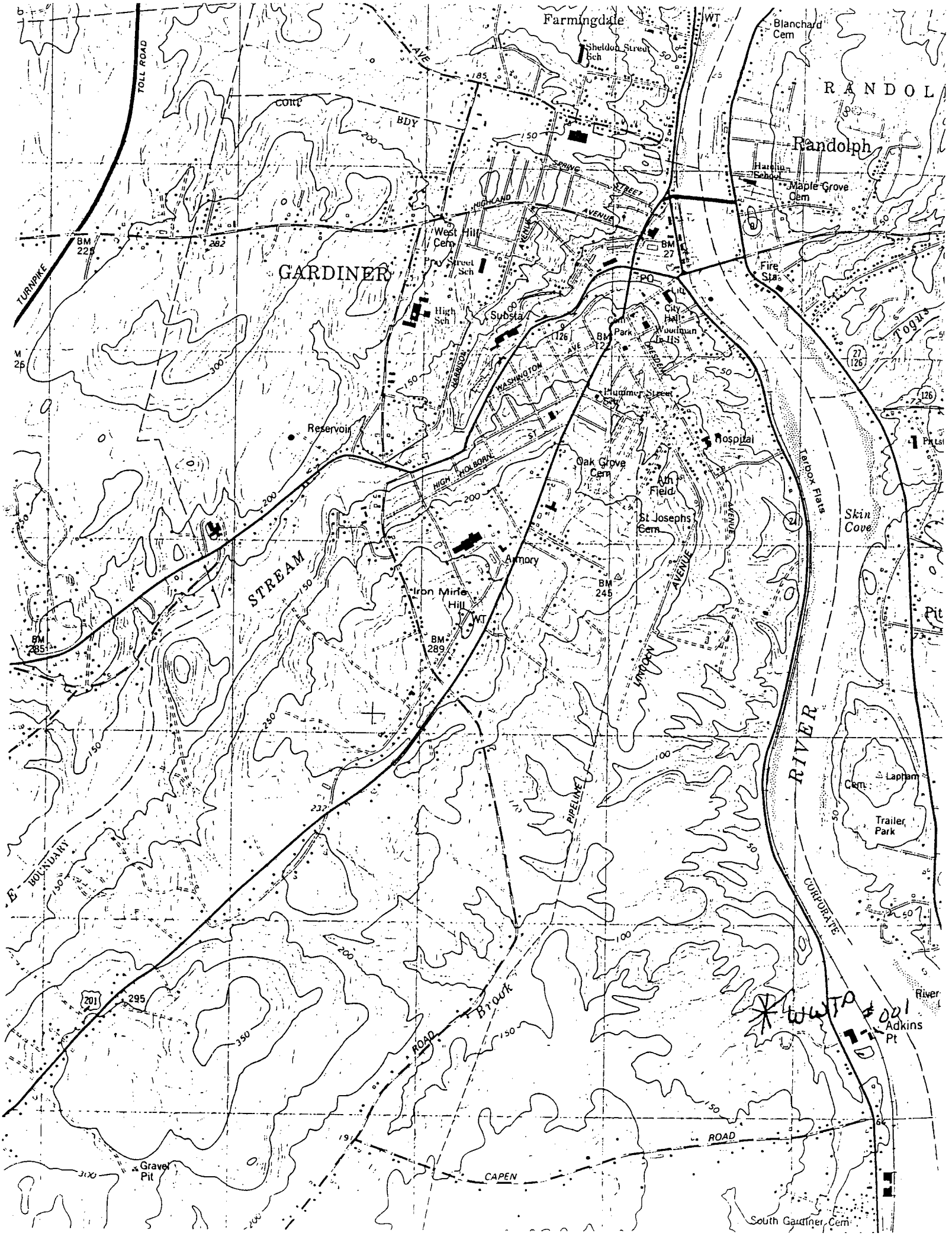
Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Gregg Wood
Division of Water 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

10. RESPONSE TO COMMENTS

During the period June 3, 2004 through issuance of the permit/license, the Department solicited comments from the permittee, state and federal agencies and interested parties on the proposed draft MEPDES permit and Maine WDL to be issued for the discharge(s) cited in said permit/license. The Department did not receive any substantive comments from any party that resulted in significant revisions to the permit. Therefore, no Response to Comments has been prepared.

ATTACHMENT A


Farmingdale
Blanchard Cem
Sheldon Street Sch
RANDOL
Randolph
Harlow School
Maple Grove Cem
TOLL ROAD
TURNPIKE
BDY
SPRING STREET
HIGHLAND AVENUE
West Hill Cem
Pro Street Sch
GARDINER
BM 225
BM 27
Fire Sta
PO
High Sch
Substa
City Hall
Cem
Park
Woodman Jr HS
BM 122
PRESIDENT
WASHINGTON
HARRISON
Hummel Street Sch
Reservoir
Hospital
HIGH HOLBORN
Oak Grove Cem
Ath Field
St Josephs Cem
Terrox Flats
Skin Cove
Armory
STREAM
Iron Mine Hill
BM 289
BM 245
BM 285
INDIAN AVENUE
RIVER
Cem
Lapham
Trailer Park
PIPELINE
CORPORATE
E BOUNDARY
Brook
ROAD
WWTP #021
Adkins Pt
River
Gravel Pit
CAPEN
ROAD
South Gardiner Cem

ATTACHMENT B

Species	Test	Test Result %	Sample Date
FATHEAD	LC50	>100	04/01/1991
WATER FLEA	LC50	>100	04/01/1991
TROUT	LC50	>100	07/22/1991
WATER FLEA	LC50	>100	07/22/1991
FATHEAD	LC50	>100	01/06/1992
WATER FLEA	LC50	>100	01/06/1992
TROUT	C_NOEL	25.00	07/07/1992
FATHEAD	LC50	>100	01/18/1993
WATER FLEA	LC50	>100	01/18/1993
TROUT	LC50	>100	07/29/1993
WATER FLEA	LC50	>100	07/29/1993
FATHEAD	LC50	>100	01/13/1994
WATER FLEA	LC50	>100	01/13/1994
TROUT	A_NOEL	100	07/13/1994
TROUT	C_NOEL	50	07/13/1994
TROUT	LC50	>100	07/13/1994
WATER FLEA	A_NOEL	100	07/13/1994
WATER FLEA	C_NOEL	100	07/13/1994
WATER FLEA	LC50	>100	07/13/1994
FATHEAD	A_NOEL	50	10/12/1994
FATHEAD	C_NOEL	50	10/12/1994
FATHEAD	LC50	79.4	10/12/1994
WATER FLEA	A_NOEL	100	10/12/1994
WATER FLEA	C_NOEL	100	10/12/1994
WATER FLEA	LC50	>100	10/12/1994
FATHEAD	A_NOEL	100	01/18/1995
FATHEAD	LC50	>100	01/18/1995
WATER FLEA	A_NOEL	100	01/18/1995
WATER FLEA	LC50	>100	01/18/1995
TROUT	A_NOEL	100	03/14/1995
TROUT	LC50	>100	03/14/1995
FATHEAD	A_NOEL	100	07/21/1995
FATHEAD	LC50	>100	07/21/1995
WATER FLEA	A_NOEL	100	07/21/1995
WATER FLEA	LC50	>100	07/21/1995
TROUT	A_NOEL	100	04/02/1996
TROUT	LC50	>100	04/02/1996
WATER FLEA	A_NOEL	100	04/02/1996
WATER FLEA	LC50	>100	04/02/1996
FATHEAD	A_NOEL	100	04/17/1997
FATHEAD	LC50	>100	04/17/1997

Species	Test	Test Result %	Sample Date
TROUT	A_NOEL	100	04/17/1997
TROUT	LC50	>100	04/17/1997
WATER FLEA	A_NOEL	100	04/17/1997
WATER FLEA	LC50	>100	04/17/1997
FATHEAD	A_NOEL	100	05/11/1998
FATHEAD	LC50	>100	05/11/1998
TROUT	A_NOEL	100	05/11/1998
TROUT	LC50	>100	05/11/1998
WATER FLEA	A_NOEL	100	05/11/1998
WATER FLEA	LC50	>100	05/11/1998
TROUT	A_NOEL	100	04/12/1999
TROUT	LC50	>100	04/12/1999
WATER FLEA	A_NOEL	100	04/12/1999
WATER FLEA	LC50	>100	04/12/1999
TROUT	A_NOEL	100	04/17/2000
TROUT	LC50	>100	04/17/2000
WATER FLEA	A_NOEL	100	04/17/2000
WATER FLEA	LC50	>100	04/17/2000

ATTACHMENT C

Sample Date: 07/22/2003
Plant flows not provided

Total Tests:	124		
Missing Compounds:	0		
Tests With High DL:	0		
	M = 0	V = 0	A = 0
	BN = 0	P = 0	other = 0

Sample Date: 10/20/2003
Plant flows not provided

Total Tests:	123		
Missing Compounds:	1		
Tests With High DL:	0		
	M = 0	V = 0	A = 0
	BN = 0	P = 0	other = 0

GARDINER

KENNEBEC RIVER

ARSENIC

MDL = 5 ug/l

Conc, ug/l	MDL	Sample Date	Date Entered
3.000000	OK	10/20/2003	12/30/2003
7.000000	OK	07/22/2003	10/15/2003