May 16, 2008

Mr. Thomas Minchin
Gardiner Water District
P.O. Box 536
Gardiner, Maine 04345

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0022519
Maine Waste Discharge License (WDL) Application #W000953-5S-C-R
Final MEPDES Permit Renewal

Dear Mr. Minchin:

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*."

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.

pc: Denise Behr, DEP
Sandy Lao, USEPA
File #953

IN THE MATTER OF

GARDINER WATER DISTRICT	)	MAINE POLLUTANT DISCHARGE
GARDINER, KENNEBEC COUNTY	)	ELIMINATION SYSTEM PERMIT
DRINKING WATER TREATMENT PLANT	)	AND
#ME0022519	)	WASTE DISCHARGE LICENSE
#W000953-5S-C-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the *Federal Water Pollution Control Act*, Title 33 USC, §1251, *Conditions of licenses*, 38 M.R.S.A. § 414-A, and applicable regulations, the Maine Department of Environmental Protection (Department) has considered the application of the GARDINER WATER DISTRICT (GWD), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The GWD has applied to the Department for a renewal of combination Waste Discharge License (WDL) #W000953-5S-B-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0022519, which was issued on May 1, 2003 and expired on May 1, 2008. The 5/1/03 permit authorized a monthly average discharge of 0.020 million gallons per day (MGD) and a daily maximum of up to 0.052 MGD of filter cleaning (backwash) supernatant from a municipal drinking water treatment plant to Cobbosseecontee Stream, Class B, in Gardiner, Maine.

PERMIT SUMMARY

This permitting action is similar to the 5/1/03 permitting action in that it is:

1. Carrying forward the monthly average discharge flow limitation of 0.020 MGD;

2. Carrying forward the monthly average and daily maximum concentration limits and the monthly average mass limit for total suspended solids (TSS);

3. Carrying forward the daily maximum concentration limit for settleable solids; and

4. Carrying forward the minimum monitoring frequency requirement for all monitored parameters.

This permitting action is different from the 5/1/03 permitting action in that it is:

1. Eliminating the daily maximum discharge flow limit and establishing a report only requirement;

2. Revising the daily maximum mass limit for TSS;

3. Revising the daily maximum concentration limit for total residual chlorine (TRC); and

4. Revising the pH range limit.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated May 16, 2008, 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, *Classification of Maine waters*, 38 M.R.S.A. § 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 water 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 as defined in 38 M.R.S.A. § 414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of GARDINER WATER DISTRICT to discharge a monthly average of up to 0.020 MGD of filter cleaning (backwash) supernatant from a municipal drinking water treatment plant to Cobbosseecontee Stream, Class B, 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. The term of this permit is five (5) years from the date of signature.

DONE AND DATED AT AUGUSTA, MAINE, THIS 21st DAY OF MAY, 2008
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 31, 2008
Date of application acceptance: April 9, 2008

Date filed with Board of Environmental Protection: _____.
This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS

C. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **drinking water filter cleaning (backwash) supernatant from Outfall #001A** to Cobbosseecontee Stream. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	**Discharge Limitations**				**Minimum Monitoring Requirements**	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	0.020 MGD *[03]*	Report MGD *[03]*	---	---	Continuous *[CN]*	Recorder *[RC]*
TSS *[00530]*	5.0 lbs./day *[26]*	10.0 lbs./day *[26]*	30 mg/L *[19]*	60 mg/L *[19]*	2/Month *[02/30]*	Grab *[GR]*
Settleable Solids *[00545]*	---	---	---	0.3 ml/L *[25]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine *[50060]*	---	---	---	1.0 mg/L *[19]*	1/Week *[01/07]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU *[12]*	1/Week *[01/07]*	Grab *[GR]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs).

FOOTNOTES: See page 5 of this permit for the applicable footnotes.

SPECIAL CONDITIONS

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

FOOTNOTES:

1. **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 Health and Human Services. Samples that are sent to a POTW licensed pursuant to *Waste discharge licenses,* 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules,* 10-144 CMR 263 (last amended February 13, 2000).

   All detectable analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the actual detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit. Compliance with this permit will be evaluated based on whether or not a compound is detected at or above the Department's RL.

   Due to the intermittent nature of the GWD's wastewater discharge, monitoring for TSS, settleable solids, TRC and pH shall be conducted through a grab sample collected at the midpoint of a filter backwash discharge.

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. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on April 9, 2008; 2) the terms and conditions of this permit; and 3) only from Outfall #001A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

D. NOTIFICATION REQUIREMENT

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

1. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system.

2. For the purposes of this section, adequate notice 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 change in the quality and quantity of the waste water to be discharged from the treatment system.

E. 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 the Department's 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 Department assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Bureau of Land and Water Quality
Division of Water Quality Management
17 State House Station
Augusta, Maine 04333-0017

SPECIAL CONDITIONS

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.

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. REOPENING OF PERMIT FOR MODIFICATION

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

H. SEVERABILITY

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

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **MAY 16, 2008**

MEPDES PERMIT: **#ME0022519**
WASTE DISCHARGE LICENSE: **#W000953-5S-C-R**

NAME AND ADDRESS OF APPLICANT:

GARDINER WATER DISTRICT
P.O. BOX 536
GARDINER, MAINE 04345

COUNTY: **KENNEBEC**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

GARDINER WATER DISTRICT
190 CENTRAL STREET
GARDINER, MAINE 04345

RECEIVING WATER / CLASSIFICATION: **COBBOSSEECONTEE STREAM / CLASS B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. THOMAS G. MINCHIN**
(207) 582-2774

1. APPLICATION SUMMARY

a. Application: The Gardiner Water District (GWD) has applied to the Maine Department of Environmental Protection (Department) for a renewal of combination Waste Discharge License (WDL) #W000953-5S-B-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0022519, which was issued on May 1, 2003 and expired on May 1, 2008. The 5/1/03 permit authorized a monthly average discharge of 0.020 million gallons per day (MGD) and a daily maximum of up to 0.052 MGD of filter cleaning (backwash) supernatant from a municipal drinking water treatment plant to Cobbosseecontee Stream, Class B, in Gardiner, Maine.

2. PERMIT SUMMARY

a. Terms and Conditions: **This permitting action is similar to the 5/1/03 permitting action in that it is:**

1. Carrying forward the monthly average discharge flow limitation of 0.020 MGD;

2. Carrying forward the monthly average and daily maximum concentration limits and the monthly average mass limit for total suspended solids (TSS);

3. Carrying forward the daily maximum concentration limit for settleable solids; and

4. Carrying forward the minimum monitoring frequency requirement for all monitored parameters.

This permitting action is different from the 5/1/03 permitting action in that it is:

1. Eliminating the daily maximum discharge flow limit and establishing report only requirement;

2. Revising the daily maximum mass limit for TSS;

3. Revising the daily maximum concentration limit for total residual chlorine (TRC); and

4. Revising the pH range limit.

b. History: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for the GWD.

December 16, 1977 – The U.S. Environmental Protection Agency (USEPA) issued National Pollutant Discharger Elimination System (NPDES) permit #ME0022519 to GWD for the discharge of filter backwash supernatant for a five-year term.

January 12, 2001 – The Department received authorization from the USEPA to administer the NPDES permit program in Maine, excluding areas of special interest to Maine Indian Tribes. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System program.

May 1, 2003 – The Department issued combination WDL #000953-5S-B-R / MEPDES permit #ME0022519 to the GWD for a five-year term. The 5/1/03 WDL/MEPDES permit ME0022519 superseded #W000953-59-A-R issued on May 2, 1994, WDLs issued on November 22, 1983, September 9, 1981, and July 21, 1976.

March 31, 2008 – The GWD submitted a timely and complete General Application to the Department for renewal of the 5/1/03 MEPDES permit. The application was accepted for processing on April 9, 2008, and was assigned WDL # W000953-5S-C-R / MEPDES #ME0022519.

2. PERMIT SUMMARY (cont'd)

c. Source Description: The Gardiner Water District (GWD) operates a municipal drinking water treatment plant on the east shore of Cobbosseecontee Stream in Gardiner, Maine. A map showing the location of the facility is included as Attachment A of this fact sheet. GWD provides the communities of Gardiner, Randolph, Farmingdale and Pittston with a supply of drinking water. GWD is designed to treat a maximum of 2.0 million gallons of raw water per day (1,400 gallons per minute).

The GWD obtains raw water from two ground water wells located on the River Road in South Gardiner. The pump capacity of each well as calculated in 2001 was 1,050 gallons per minute (GPM) for Well No. 1 and 1,000 GPM for Well No.2. Water is extracted from the wells on an alternating schedule and pumped by a low-lift vertical turbine pump station, which is activated based on a level setpoint in the finished water clearwell.

GWD utilizes a SCADA system to measure and record the influent water flow, which is used to pace the chemical feed systems. Water treatment begins at the head of the facility where sodium hypochlorite (15% NaOCl) is injected into the raw water influent line for disinfection. Following disinfection, the flow is distributed equally to five (5) down-flow dual media manganese greensand filtration units for removal of suspended solids and small particulate matter, and for adsorption of residual iron and manganese. Each filter unit consists of 12 inches of 0.7 - 0.8 mm anthracite coal (coarse media) and 24 inches of 0.3 - 0.35 mm greensand (fine media), which is supported by 16 inches of gravel and a #8 mesh 304 stainless steel screen. The coarse media is a depth filter and is designed to remove 75-90% of the suspended solids, while the fine media serves to strain smaller particulate matter from the raw water flow. Dual media greensand filtration normally operates in intermittent regeneration (IR) mode in which the filter media is regenerated with potassium permanganate ($KMnO_4$) after a predetermined volume of water has passed through the filter. However, GWD reported that the sodium hypochlorite added for disinfection provides adequate regeneration of the greensand media without the addition of $KMnO_4$. Although the use of $KMnO_4$ is not standard practice, GWD retains all of the necessary facilities to inject $KMnO_4$ if it is required for proper greensand regeneration.

Filtered water enters an aeration influent pipe for reduction of ambient carbon dioxide and radon levels and to adjust the pH level from approximately 7.0 standard units (SU) to approximately 7.6 SU. After the water exits the aerator, the flow is treated with hydrofluorosilicic acid (23% H_2SiF_6) for consumer dental benefit and is then conveyed to a 100-square foot, 750,000-gallon capacity clearwell. As water is pumped from the clearwell to the distribution system, it is treated with 36% polyphosphate for distribution system corrosion protection, which completes the drinking water treatment process.

2. PERMIT SUMMARY (cont'd)

Finished drinking water is distributed to the following water storage tanks: 1) the Iron Mine tank in Gardiner; 2) the Highland Avenue tank in Gardiner; 3) the Libby Hill tank in Gardiner; 4) the Cobbossee Avenue tank in Gardiner; 5) the Capen Road tank in South Gardiner; 6) the Windsor tank in Randolph; and 7) the Hayford Heights tank in Farmingdale. The high and low service pumps are controlled by level setpoints in the Highland Avenue tank and Cobbossee Avenue tank, respectively.

The filter units must be periodically cleaned through flushing / backwashing to remove accumulated particulate and maintain treatment efficiency.

d. Wastewater Treatment: Waste water is produced during up-flow filter backwash procedures that occur, under normal operating conditions, after 48 hours of filter operation or as the pressure drop across a filter bed (headloss) reaches approximately 6-8 pounds per square inch. Typically, the 48-hour operating time and not filter headloss initiates the backwash procedure. Based on an average plant operation time of 16 hours per day, the average backwash frequency for each filter unit is once every two days and no more than one filter unit is backwashed at a time.

The filter backwash procedure begins with a 120-second filter drain-down sequence to the clearwell. The filter is then expanded during a 360-second airwash sequence in which pressurized air is forced up through the filter unit to expand the media and loosen accumulated solids. Particulate matter released during the airwash sequence is conveyed to a 73-foot by 54-foot, 236,000-gallon capacity waste basin. Following the airwash sequence, a 240-second low-rate filter wash forces water from the clearwell up through the filter media at a rate of 400 GPM producing 1,600 gallons of waste water, which is conveyed to the waste basin. Next, a 300-second high-rate filter wash forces water from the clearwell up through the filter media at a rate of 1,100 GPM producing 5,500 gallons of waste water, which is also conveyed to the waste basin. A 240-second filter-to-waste sequence forces raw water down through the filter at a rate of 300 GPM causing the filter media to settle to its designed configuration. The 1,200 gallons of waste water produced during this sequence are also conveyed to the waste basin and this completes the backwash procedure. A total of 8,300 gallons of waste water are generated during each filter unit backwash procedure and 1-2 filter units are backwashed per day on average.

Supernatant flow from the waste basin is discharged to Cobbosseecontee Stream via Outfall #001A. The 12-inch diameter outfall pipe terminates behind the pump and chemical storage building on the bank of the stream approximately 10-12 feet above the normal high water line. The point of discharge is downstream of the New Mills Dam and upstream from the American Tissue Dam. Supernatant flow decants to the outfall pipe as the water level in the waste basin rises in response to backwashing the filters. Since GWD does not operate continuously, wastewater is generated on an intermittent basis.

2. PERMIT SUMMARY (cont'd)

GWD reported that the utilization of finished water from the clearwell for filter cleaning rather than raw water minimizes the production of sludge in the waste basin. As a result, sludge is not produced at a rate or in a quantity that requires routine disposal. In the event that sludge must be removed from the waste basin and be disposed of, GWD will do so at an approved solid waste disposal facility in accordance with the rules and regulations of the Department's Bureau of Remediation and Waste Management.

A wastewater treatment schematic is included as Attachment B of this fact sheet.

3. CONDITIONS OF PERMIT

Conditions of licenses, 38 M.R.S.A. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, *Certain deposits and discharges prohibited*, 38 M.R.S.A. § 420 and *Surface Water Toxics Control Program*, 06-096 CMR 530 (effective October 9, 2005) require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective October 9, 2005), and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Classification of major river basins, 38 M.R.S.A. § 467(4)(C) classifies Cobbosseecontee Stream at the point of discharge as a Class B waterway. *Standards for classification of fresh surface waters*, 38 M.R.S.A. § 465(3) describes the standards for Class B waters.

5. RECEIVING WATER QUALITY CONDITIONS

<u>*The State of Maine 2006 Integrated Water Quality Monitoring and Assessment Report*</u>, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists 185.45 miles of Cobbosseecontree Stream and its tributaries (ADB Assessment Unit ID ME0103000311_334R) as, *"Category 2: Rivers and Streams Attaining Some Designated Uses – Insufficient Information for Other Uses."* The Report lists all of Maine's fresh waters as, *"Category 5-C: Waters Impaired by Atmospheric Deposition of Mercury Regional or National TMDL May be Required."*. Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, *"Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources. The State of Maine is participating in the development of regional scale TMDLs for the control of mercury."*

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established, and this permitting action is carrying forward, a monthly average discharge flow limitation of 0.020 MGD, which is considered representative of the design flow for the facility. *Waste Discharge License Conditions*, 06-096 CMR 523(6)(b)(1) (effective January 12, 2001) states, *"In the case of [publicly owned treatment works], permit effluent limitations, standards, or prohibitions shall be calculated based on design flow."* The GWD is a publicly owned treatment works (POTWs). In accordance with 06-096 CMR 523 and for consistency with the limitations established for other POTWs, this permitting action is eliminating the numeric daily maximum discharge flow limitation of 0.052 MGD and is establishing a reporting only requirement to assist in compliance evaluations.

A summary of the discharge flow data as reported on the monthly Discharge Monitoring Reports (DMRs) for the period of May 2003 through November 2007 is as follows:

Discharge Flow	Minimum	Maximum	Arithmetic Mean	# DMRs
Monthly Average	0.008 MGD	0.014 MGD	0.01 MGD	54
Daily Maximum	0.01 MGD	0.18 MGD	0.03 MGD	54

b. Dilution Factors: Dilution factors associated with the permitted discharge flow of 0.020 MGD were derived in accordance with 06-096 CMR 530(4)(A) and were calculated as follows:

Mod. Acute: ¼ 1Q10 = 2.05 cfs $\Rightarrow \frac{(2.05 \text{ cfs})(0.6464) + 0.020 \text{ MGD}}{0.020 \text{ MGD}} = 67:1$

Acute: 1Q10 = 8.2 cfs $\Rightarrow \frac{(8.2\text{cfs})(0.6464) + 0.020 \text{ MGD}}{0.020 \text{ MGD}} = 266:1$

Chronic: 7Q10 = 9.0 cfs $\Rightarrow \frac{(9.0 \text{ cfs})(0.6464) + 0.020 \text{ MGD}}{0.020 \text{ MGD}} = 292:1$

Harmonic Mean = 97.0 cfs $\Rightarrow \frac{(97.0 \text{ cfs})(0.6464) + 0.020 \text{ MGD}}{0.020 \text{ MGD}} = 3{,}136:1$

It is noted that the modified acute and acute dilution factors calculated above are higher than those calculated in the previous permitting action as a result of correctly utilizing the facility's monthly average design flow (0.020 MGD) rather than the previous daily maximum discharge flow limit of 0.052 MGD.

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

06-096 CMR 530(4)(B)(1) states,

> *Analyses using numerical 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 and to ensure a zone of passage of at least 3/4 of the cross-sectional area of any stream as required by Chapter 581. 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 flow, up to and including all of it, as long as the required zone of passage is maintained.*

GWD's discharge pipe terminates on the bank of Cobbosseecontee Stream approximately 10-12 feet above the normal high water line and is therefore not considered to achieve rapid and complete mixing with the receiving water. Consequently, the Department is utilizing the default stream flow of ¼ of the 1Q10 in acute evaluations.

c. TSS: The previous permitting action established, and this permitting action is carrying forward, monthly average and daily maximum concentration limits of 30 mg/L and 60 mg/L, respectively, based on Department best professional judgment of best practicable treatment for discharges from drinking water treatment facilities in Maine. The previous permitting action established monthly average and daily maximum mass limits of 5.0 lbs./day and 26.0 lbs./day, respectively, for TSS, based on the concentration limits specified above and the respective monthly average and daily maximum discharge flow limits of 0.020 MGD and 0.052 MGD. This methodology is inconsistent with the derivation of limits for other POTWs in that the design flow for the facility should be utilized to calculate both the monthly average and daily maximum mass limits. Therefore, this permitting action is carrying forward the monthly average mass limit for TSS and is revising the daily maximum mass limit based on the following calculations. With a monthly average flow limit of 0.020 MGD, concentration limits specified above, and a conversion factor of 8.34 lbs/gallon of water monthly average and daily maximum mass limits for TSS were derived as follows:

Monthly Average Mass: (30 mg/L)(8.34 lbs./gallon)(0.020 MGD) = 5.0 lbs./day
Daily Maximum Mass: (60 mg/L)(8.34 lbs./gallon)(0.020 MGD) = 10.0 lbs./day

A summary of TSS data as reported on the monthly DMRs for the period of May 2003 through November 2007 is as follows:

TSS	Minimum	Maximum	Arithmetic Mean	# DMRs
Monthly Average	0.01 lbs./day	0.22 lbs./day	0.1 lbs./day	55
	0 mg/L	43 mg/L	2.5 mg/L	54
Daily Maximum	0.016 lbs./day	0.35 lbs./day	0.1 lbs./day	55
	0.5 mg/L	7 mg/L	2.4 mg/L	54

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

This permitting action is carrying forward a minimum monitoring frequency requirement of twice per month for TSS based on Department best professional judgment.

d. Settleable Solids: The previous permitting action established, and this permitting action is carrying forward, a daily maximum concentration limit of 0.3 ml/L for settleable solids, which is considered a best practicable treatment limitation (BPT) for discharges from drinking water treatment facilities in Maine.

A summary of settleable solids data as reported on the monthly DMRs for the period of May 2003 through November 2007 (# DMRs = 55) indicates the daily maximum settleable solids concentration discharge has been 0.1 ml/L or less 98% of the time (0.0125 ml/L reported for May 2003).

This permitting action is carrying forward the minimum monitoring frequency requirement once per week for settleable solids based on Department best professional judgment.

d. Total Residual Chlorine (TRC): The previous permitting action established a water quality-based daily maximum concentration limit of 0.50 mg/L for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department licensing/permitting actions impose the more stringent of either a water quality-based or BPT based limit.

With modified acute (¼ 1Q10) and chronic dilution factors associated with the discharge, water quality-based concentration thresholds the discharge may be calculated as follows:

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	Mod. A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	67:1 (A) 292:1 (C)	1.3 mg/L	3.2 mg/L

The BPT-based limit of 1.0 mg/L is more stringent than the water quality-based thresholds calculated above and is therefore being established in this permitting action. It is noted that the difference between the calculated acute water quality-based threshold in this permitting action (1.3 mg/L) and the previous permitting action (0.50 mg/L) is a result of a revised modified acute dilution factor. The action of revising the daily maximum TRC limit from 0.50 mg/L to 1.0 mg/L will not violate the requirements of the State's antidegradation policy at *Classification of Maine waters*, 38 M.R.S.A. §464(4)(F) in that, as permitted, existing in-stream water uses and the level of water quality necessary to protect those existing uses must be maintained and protected. The monitoring frequency is being revised to once per week based on Department guidance.

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

A summary of effluent TRC data as reported on the monthly DMRs for the period of May 2003 through November 2007 indicates effluent TRC has ranged from 0.25 mg/L to 0.52 mg/L with an arithmetic mean of 0.42 mg/L (#DMRs = 56).

This permitting action is carrying forward a minimum monitoring frequency requirement of once per week for TRC based on Department best professional judgment.

e. pH: The previous permitting action established a pH range limit of 6.0 – 8.5 standard units (SU). In this permitting action, the pH range limit is being revised to 6.0 – 9.0 SU, which is considered by the Department as BPT and is consistent with limits established for other POTWs in Maine.

A summary of pH data as reported on the monthly DMRs for the period of May 2003 through November 2007 (# DMRs = 55) indicates the facility has been in compliance with the pH range limitation 100% of the time during said reporting period.

This permitting action is carrying forward a minimum monitoring frequency requirement of once per week for pH based on Department best professional judgment.

7. 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 water body to meet standards for Class C classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the *Kennebec Journal* newspaper on or about April 1, 2008. The Department receives public comments on an application until the date a final agency action is taken on the 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 *Application Processing Procedures for Waste Discharge Licenses,* 06-096 CMR 522 (effective January 12, 2001).

9. DEPARTMENT CONTACTS

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

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10. RESPONSE TO COMMENTS

During the period of April 15, 2008 through May 15, 2008, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the Gardiner Water District for the proposed discharge. The Department did not receive significant comments on the draft permit; therefore, a response to comments was not prepared.