



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI  
GOVERNOR

DAVID P. LITTELL  
COMMISSIONER

Mr. Stephen Tapley  
Town of Kittery  
Waste Water Treatment Facility  
P.O. Box 808  
York, ME 03904

March 24, 2006

RE: Maine Pollutant Discharge Elimination System Permit #ME0100285  
Maine Waste Discharge License Application #W000389-5L-D-R  
**Final Permit/License**

Dear Mr. Tapley:

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

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

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

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

Sincerely,

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

Enc.

cc: Matt Hight, DEP/SMRO



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17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826  
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PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769-2094  
(207) 764-0477 FAX: (207) 760-3143

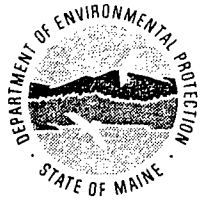
## DMR Lag

(reprinted from April 2003 O&M Newsletter)

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

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

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



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

DEPARTMENT ORDER

IN THE MATTER OF

TOWN OF KITTERY	)	MAINE POLLUTANT DISCHARGE
KITTERY, YORK COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	)	AND
ME0100285	)	WASTE DISCHARGE LICENSE
W000389-5L-E-R	)	RENEWAL
	)	APPROVAL

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 (Department hereinafter) has considered the application of the TOWN OF KITTERY (Town hereinafter), with its supportive data, agency review comments, and other related materials on file, and FINDS THE FOLLOWING FACTS:

**APPLICATION SUMMARY**

The Town has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100285/ Waste Discharge License (WDL) #W000389-5L-C-R, (permit hereinafter) which was issued on May 9, 2001 and is due to expire on May 9, 2006. The MEPDES permit/WDL approved the monthly average discharge of 2.5 million gallons per day (MGD) of secondary treated waste waters from a municipally owned waste water treatment facility and an unspecified quantity of combined sanitary waste water and storm water runoff from three (3) combined sewer overflow structures to the Piscataqua River, Class SC, in Kittery, Maine.

**MODIFICATIONS REQUESTED**

The Town has requested the Department consider the following;

1. Establishing a daily maximum technology based fecal coliform bacteria limit of 200 colonies per 100 ml should the Town eliminate the use of chlorine based compounds as a means of disinfection and replace said system with an ultra-violet (UV) disinfection system.
2. Deleting the monthly average and or daily maximum water quality based mass and concentrations limits for total copper, total cyanide, total silver and dieldrin as more recent tests results for said parameters indicate the discharge no longer has a reasonable potential to exceed ambient water quality criteria for these parameters.

## PERMIT SUMMARY

This permit carries forward all terms and conditions of the 5/9/01 permit with the following exceptions:

1. Eliminating the water quality based monthly average and or daily maximum mass and concentration limits for copper, cyanide, dieldrin and silver.
2. Eliminating the Special Condition entitled, *Limitations And Conditions For Combined Sewer Overflows* as all three of the CSOs (Pleasant Street Pump Station, Rice Avenue Pump Station and Moore Street Pump Station) have been eliminated.
3. Revising of the whole effluent toxicity (WET) and chemical specific testing requirements pursuant to new Department rules, Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, that became effective on October 9, 2005.

## CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated February 23, 2006, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, 38 M.R.S.A., Section 464(4)(F), will be met, in that:
  - a. Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
  - b. Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
  - c. The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

**CONCLUSIONS (cont'd)**

- 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. The discharge will be subject to effluent limitations that require application of best practicable treatment.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

**ACTION**

THEREFORE, the Department APPROVES the above noted application of the TOWN OF KITTERY to discharge up to a monthly average flow of 2.5 million gallons per day (MGD) of secondary treated municipal waste waters to the Piscataqua River, Class SC, 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 24<sup>TH</sup> DAY OF MARCH, 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

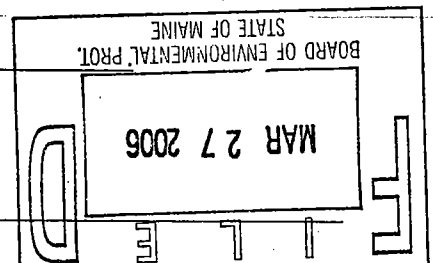
BY: [Signature]  
David P. Littell, Commissioner

PLEASE NOTE ATTACHED FACT SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: February 17, 2006

Date of application acceptance: February 17, 2006

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



This order prepared by Gregg Wood, BUREAU OF LAND AND WATER QUALITY  
Kittery2006 3/23/06

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

1. 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 from **Outfall #001**, to the Piscataqua River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum Report MGD	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow, MGD <i>[500507]</i>	2.5 MGD <i>[03/]</i>	---	Report MGD <i>[03/]</i>	---	---	---	Continuous <i>[99/99]</i>	Recorder <i>[RC/]</i>
BOD <sub>5</sub> <i>[003101]</i>	626 #/Day <i>[26/]</i>	939 #/Day <i>[26/]</i>	1,043 #/Day <i>[26/]</i>	30 mg/L <i>[19/]</i>	45 mg/L <i>[19/]</i>	50 mg/L <i>[19/]</i>	3/Week <i>[03/07]</i>	Composite <i>[2-3/]</i>
BOD <sub>5</sub> % Removal <sup>(1)</sup> <i>[810101]</i>	---	---	---	85 % <i>[23/]</i>	---	---	1/Month <i>[01/30/]</i>	Calculate <i>[C-3/]</i>
TSS <i>[003501]</i>	626 #/Day <i>[26/]</i>	939 #/Day <i>[26/]</i>	1,043 #/Day <i>[26/]</i>	30 mg/L <i>[19/]</i>	45 mg/L <i>[19/]</i>	50 mg/L <i>[19/]</i>	3/Week <i>[03/07]</i>	Composite <i>[2-3/]</i>
TSS % Removal <sup>(1)</sup> <i>[810111]</i>	---	---	---	85 % <i>[23/]</i>	---	---	1/Month <i>[01/30/]</i>	Calculate <i>[C-3/]</i>
Settleable Solids <i>[005451]</i>	---	---	---	---	---	0.3 ml/L <i>[23/]</i>	1/Day <i>[01/001/]</i>	Grab <i>[GR/]</i>
Fecal Coliform <sup>(2)</sup> <i>[316161]</i> <i>(May 15 - September 30)</i>	---	---	---	14/100 ml <sup>(3)</sup> <i>[13/]</i>	---	43/100 ml <i>[13/]</i>	3/Week <i>[03/07]</i>	Grab <i>[GR/]</i>
Total Residual Chlorine <sup>(4)</sup> <i>[500601]</i>	---	---	---	0.1 mg/L <i>[19/]</i>	---	0.12 mg/L <i>[19/]</i>	2/Day <i>[02/01/]</i>	Grab <i>[GR/]</i>
pH <i>[004007]</i>	---	---	---	---	---	6.0-8.5 S.U. <i>[12/]</i>	1/Day <i>[01/001/]</i>	Grab <i>[GR/]</i>

The italicized numeric values in brackets in the tables above are not limitations but codes used by Department personnel to code monthly Discharge Monitoring Reports (DMR's).

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

***SURVEILLANCE LEVEL TESTING*** – Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity <sup>(5)</sup> <b>Acute – NOEL</b> <i>Mysidopsis bahia</i> [TDM3E] (Mysid Shrimp)	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite [24]
<b>Chronic – NOEL</b> <i>Arbacia punctulata</i> [TBH3A] (Sea urchin)	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite [24]
Analytical chemistry <sup>(6)</sup> [51168]	---	---	---	Report ug/L [28]	1/2 Year [01/2Y]	Composite/Grab [24]

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

**SCREENING LEVEL TESTING** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity <sup>(5)</sup> <u>Acute – NOEL</u> <i>Mysidopsis bahia</i> (ГВМЗЕ) (Mysid Shrimp)	---	---	---	Report % [23]	2/Year [02/00R]	Composite [24]
<u>Chronic – NOEL</u> <i>Arbacia punctulata</i> (ГВНЗЗ) (Sea urchin)	---	---	---	Report % [23]	2/Year [02/00R]	Composite [24]
Priority pollutant <sup>(7)</sup> [500081]	---	---	---	Report ug/L [28]	1/Year [01/00R]	Composite/Grab [24]
Analytical chemistry <sup>(6)</sup> [51168]	---	---	---	Report ug/L [28]	1/Quarter [01/00R]	Composite/Grab [24]



## SPECIAL CONDITIONS

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

#### Footnotes:

#### **Sampling Locations:**

**Influent sampling** for BOD<sub>5</sub> and TSS shall be sampled after the aerated grit chamber.

**Effluent sampling**- All effluent samples shall be collected after the last treatment process such that the samples are considered to be representative of end-of-pipe effluent characteristics.

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

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

1. **Percent removal** - The treatment facility shall maintain a minimum of 85 percent removal of both BOD<sub>5</sub> and TSS. The percent removal shall be based on a monthly average calculation using influent and effluent concentrations. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "NODI-9" on the monthly Discharge Monitoring Report (DMR).
2. **Fecal coliform bacteria** - Limits are seasonal and apply between May 15<sup>th</sup> and September 30<sup>th</sup> inclusively of each year. The Department reserves the right to require year-round disinfection to protect the health, safety and welfare of the public.
3. **Fecal coliform bacteria** – The monthly average limitation is a geometric mean limitation and values shall be calculated and reported as such.
4. **Total residual chlorine (TRC)** – TRC limitations and monitoring requirements are applicable anytime of year in which elemental chlorine or chlorine based compounds are utilized as disinfectants. TRC shall be tested using Amperometric Titration or the DPD Spectrophotometric Method. The EPA approved methods are found in Standard Methods for the Examination of Water and Waste Water, (most current approved edition), Method 4500-CL-E and Method 4500-CL-G or U.S.E.P.A. Manual of Methods of Analysis of Water and Wastes.

## 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 water quality thresholds of 10% and 1.6%, 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.
  - a. **Surveillance level testing** - Beginning upon issuance of this permit and last through 12 months prior to permit expiration, the permittee shall conduct surveillance level WET testing at a minimum frequency of once every two years (1/2 Years). Testing shall be conducted in a different calendar quarter of each year. Acute tests shall be conducted on the mysid shrimp (*Mysidopsis bahia*) and chronic tests shall be conducted on the sea urchin (*Arbacia punctulata*).
  - b. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level WET testing at a minimum frequency of twice per year (2/Year). There shall be at least six months between sampling events. Acute tests shall be conducted on the mysid shrimp (*Mysidopsis bahia*) and chronic tests shall be conducted on the sea urchin (*Arbacia punctulata*).

The permittee is also required to analyze the effluent for the parameters specified in the analytical chemistry on the form in Attachment A of this permit each time a WET test is performed. WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 10% and 1.6%, respectively.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

- a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Marine and Estuarine Organisms, Fifth Edition, October 2002, EPA-821-R-02-014.
- b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Third Edition, October 2002, EPA-821-R-02-012.

## SPECIAL CONDITIONS

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

#### Footnotes:

6. **Analytical chemistry** – Refers to a suite of chemical tests that include ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, total cyanide, total lead, total nickel, total silver, total zinc and total residual chlorine.
  - a. **Surveillance level testing** – Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration, the permittee shall conduct surveillance level analytical chemistry testing at a minimum frequency of once every other year (1/2Years). Testing shall be conducted in a different calendar quarter of each year.
  - b. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level analytical chemistry testing at a minimum frequency of once per calendar quarter (1/Quarter).

Analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. See Attachment A of this permit for a list of the Department's reporting limits.

Test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health water quality criteria (AWQC) as established in Chapter 584. For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

7. **Priority pollutant testing** – Priority pollutants are those parameters listed by Department rule, Chapter 525, Section 4(IV). Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year). It is noted Chapter 530 does not require surveillance level priority pollutant testing in the first four years of this permit.

## SPECIAL CONDITIONS

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

#### Footnotes:

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

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

### 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 discharge shall not impart color, taste, turbidity, toxicity, radioactivity or other properties which cause those waters to be unsafe for the designated uses and characteristics ascribed to their classification.
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 the 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 imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The total residual chlorine in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall provide a TRC concentration that will effectively reduce fecal coliform bacteria levels to or below those specified in Special Condition A, *Effluent Limitation and Monitoring Requirements*, of this permit.

### D. TREATMENT PLANT OPERATOR

The waste water treatment facility must be operated under the direction of a person holding a minimum of a **Grade IV** certificate [or Maine Professional Engineer (PE) 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. 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.
3. 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 impact of the change in the quality or quantity of the waste water to be discharged from the treatment system.

## 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 the outfalls cited in 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. WET WEATHER FLOW MANAGEMENT PLAN

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

**The permittee shall review their plan annually** and record any necessary changes to keep the plan up to date.

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

The permittee shall maintain 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 wastewater 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 other regulatory personnel upon request.

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

## SPECIAL CONDITIONS

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

During the effective period of this permit, the permittee is authorized to add up to **9,000 gallons per day** of septage into its waste water treatment process, subject to the following terms and conditions.

1. This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.
2. At no time shall addition of septage cause or contribute to effluent violations. If such conditions do exist, receipt of septage shall be suspended until effluent quality can be maintained.
3. The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste treatment influent and test results.
4. Addition of septage shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment facility becomes overloaded, receipt of septage shall be reduced or terminated in order to eliminate the overload condition.
5. Septage known to be harmful to the treatment processes shall not be accepted. Wastes which contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.
6. Holding tank waste water shall not be recorded as septage and should be reported in the treatment facility's influent flow.

### K. EMERGENCY PUMP STATION OVERFLOW STRUCTURES

The permittee shall monitor the emergency pump station overflow structures listed below in accordance with the Department approved *Emergency Pump Station Overflow Monitoring Plan* (February 7, 2006), Attachment 12 of the 2/17/06 permit application. Any overflow(s) from these structures are not authorized by this permit and are considered bypasses that must be reported in accordance with Special Condition G, *Unauthorized Discharges*, of this permit.

- Pump Station #1 – Trefethen Avenue
- Pump Station #3 – Stoddard Street
- Pump Station #4 – Water Street (former CSO 004)
- Pump Station #5 – Rice Avenue (former CSO 006)
- Pump Station #6 - Oak Terrace
- Pump Station #8 - Moore Street (former CSO 007)

## SPECIAL CONDITIONS

### L. MONITORING AND REPORTING

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

Maine Department of Environmental Protection  
Bureau of Land & Water Quality  
Division of Water Quality Management  
312 Canco Road  
Portland, Maine 04103

### M. CHAPTER 530(2)(D)(4) CERTIFICATION

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

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

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

### 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 any time, and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.



**SPECIAL CONDITIONS**

**O. SEVERABILITY**

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

# ATTACHMENT A

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 WHOLE EFFLUENT TOXICITY REPORT  
 MARINE WATERS

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

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

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

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

Chlorinated? \_\_\_\_\_ Dechlorinated? \_\_\_\_\_ mm/dd/yy \_\_\_\_\_ mm/dd/yy \_\_\_\_\_

**Results** % effluent

	mysid shrimp	sea urchin
A-NOEL	_____	_____
C-NOEL	_____	_____

**Effluent Limitations**

A-NOEL	_____
C-NOEL	_____

**Data summary**

	mysid shrimp	sea urchin
QC standard	% survival	% fertilized
lab control	>90	>80
receiving water control		
conc. 1 ( %)		
conc. 2 ( %)		
conc. 3 ( %)		
conc. 4 ( %)		
conc. 5 ( %)		
conc. 6 ( %)		
stat test used		

**Salinity Adjustment**

brine	_____
sea salt	_____
other	_____

place \* next to values statistically different from controls

**Reference toxicant**

	mysid shrimp	sea urchin
toxicant / date	A-NOEL	C-NOEL
limits (mg/L)	_____	_____
results (mg/L)	_____	_____

**Comments**  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Laboratory conducting test**  
 Company Name \_\_\_\_\_ Company Rep Name (Printed) \_\_\_\_\_

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

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

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

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WET AND ANALYTICAL CHEMISTRY RESULTS  
MARINE WATERS

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

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

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

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

Lab ID No. \_\_\_\_\_ Actual Daily Discharge Flow \_\_\_\_\_ MGD Monthly Average Discharge Flow \_\_\_\_\_ MGD

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

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

Comments \_\_\_\_\_

Laboratory conducting test  
Company Name \_\_\_\_\_ Company Rep. Name (Printed) \_\_\_\_\_

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

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

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

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

Facility Name \_\_\_\_\_ MEPDES # \_\_\_\_\_ Facility Representative Signature \_\_\_\_\_  
 Pipe # \_\_\_\_\_  
 To the best of my knowledge this information is true, accurate and complete.

Licensed Flow (MGD) \_\_\_\_\_ Flow for Day (MGD)<sup>(1)</sup> \_\_\_\_\_ Flow Avg. for Month (MGD)<sup>(2)</sup> \_\_\_\_\_  
 Acute dilution factor \_\_\_\_\_ Date Sample Collected \_\_\_\_\_ Date Sample Analyzed \_\_\_\_\_  
 Chronic dilution factor \_\_\_\_\_  
 Human health dilution factor \_\_\_\_\_  
 Criteria type: M(marine) or F(fresh) \_\_\_\_\_  
 Laboratory Address \_\_\_\_\_ Telephone \_\_\_\_\_

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

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

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

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







MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT  
AND  
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: February 23, 2006

PERMIT NUMBER: ME0100285  
LICENSE NUMBER: W000389-5L-E-R

NAME AND ADDRESS OF APPLICANT:

Town of Kittery  
P.O. Box 808  
Kittery, ME 03904

COUNTY: York County

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

18 Dennet Road  
Kittery, Maine 03904

RECEIVING WATER/CLASSIFICATION: Piscataqua River/Class SC

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: Mr. Stephen Tapley  
(207) 439-4646  
[kitterysewsupt@verizon.net](mailto:kitterysewsupt@verizon.net)

**1. APPLICATION SUMMARY**

The Town of Kittery (Town hereinafter) has submitted a timely and complete application to the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100285/ Waste Discharge License (WDL) #W000389-5L-C-R, (permit hereinafter) which was issued on May 9, 2001 and is due to expire on May 9, 2006. The permit approved the monthly average discharge of 2.5 million gallons per day (MGD) of secondary treated waste waters from a municipally owned waste water treatment facility and an unspecified quantity of combined sanitary waste water and storm water runoff from three (3) combined sewer overflow structures to the Piscataqua River, Class SC, in Kittery, Maine. See Attachment A of this Fact Sheet for a location map for the treatment facility.

## 1. APPLICATION SUMMARY (cont'd)

The Town has requested the Department consider the following;

- a. Establishing a daily maximum technology based fecal coliform bacteria limit of 200 colonies per 100 ml should the Town eliminate the use of chlorine based compounds as a means of disinfection and replace said system with an ultra-violet (UV) disinfection system.
- b. Deleting the monthly average and or daily maximum water quality based mass and concentrations limits for total copper, total cyanide, total silver and dieldrin as more recent tests results for said parameters indicate the discharge no longer has a reasonable potential to exceed ambient water quality criteria for these parameters.

## 2. PERMIT SUMMARY

- a. Terms and Conditions - This permit carries forward all terms and conditions of the 5/9/01 MEPDES permit/WDL with the following exceptions:
  1. Eliminating the monthly average and or daily maximum mass and concentration limits for copper, cyanide, dieldrin and silver.
  2. Eliminating the Special Condition entitled, *Limitations And Conditions For Combined Sewer Overflows* as all three of the CSOs (Pleasant Street Pump Station, Rice Avenue Pump Station and Moore Street Pump Station) have been eliminated.
  3. Revising of the whole effluent toxicity (WET) and chemical specific testing requirements pursuant to a new Department rules, Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, that became effective on October 9, 2005.
- b. History: The most recent regulatory actions include the following:

*June 20, 1994* – The Department issued WDL #W000389-46-B-R for a five-year term.

*September 30, 1999* - The U.S. Environmental Protection Agency (EPA) reissued the National Pollutant Discharge Elimination System (NPDES) permit #ME0100285 for five-year term.

*May 23, 2000* – The Department administratively modified the 6/20/94 WDL by establishing interim average and maximum concentration limits for mercury.

*January 12, 2001* – The State of Maine received authorization from the USEPA to administer the NPDES permit program in Maine.

## 2. PERMIT SUMMARY (cont'd)

*March 15, 2001* – The Department issued a letter to the Town of Kittery informing the Town the Department revised the 5/23/00 interim mercury limits based on new information.

*May 9, 2001* – The Department issued combination MEPDES permit #ME0100285/WDL #W000389-5L-C-R for a five-year term.

*February 17, 2006* – The Town of Kittery submitted a timely application to the Department to renew the MEPDES permit/WDL.

- c. Source Description: The facility located on 18 Dennet Road in Kittery treats domestic, industrial and commercial wastewaters from the surrounding town. There are no significant industrial users contributing flows greater than 10% of the town's influent flow to the facility.

The Town maintains separate sanitary waste water and storm water collection systems. The portion of the collection system that contributed to the three licensed combined sewer overflows (CSO's) in the previous permit is no longer combined. This portion of the collection system has been separated for approximately seven years. The Town believes the collection system has sufficient capacity to transport the volume of inflow and infiltration of water experienced during periods of rainfall and snow melt. Therefore, the three CSO outfalls identified in the previous permitting action have been removed from the permit. The facility is authorized to receive up to 9,000 gallons per day of septage in accordance with the Department approved Septage Management Plan (9/27/05) submitted as Attachment #6 to the 2/17/06 application for permit renewal. Also, see Special Condition J of this permit.

The sanitary waste water collection system is approximately 23 miles in length and utilizes 21 pump stations to convey flows to the treatment facility. Four (4) pump stations have on-site back-up power in the event of a power failure and the remaining 17 pump stations have emergency generator receptacles and manual transfer switches such that back-up power via a portable generator can be supplied to the stations or are served by pumper trucks in the event of a power failure. There are no combined sewer overflow (CSO) outfalls associated with the collection system as all three of the CSOs in the previous permitting action have eliminated. A map showing the location of the treatment facility and the receiving waters is included as Attachment A of this Fact Sheet.

## 2. PERMIT SUMMARY (cont'd)

- d. Waste Water Treatment: Screenings and grit are removed at the headworks by means of an automatic rotary screen and aerated grit chamber that have been recently upgraded. Biological treatment is accomplished by activated sludge, in two 600,000-gallon sequencing batch reactors (SBR). The SBRs also serve as clarification units by using floating decanters. The secondary effluent is then disinfected using sodium hypochlorite in a chlorine contact tank and dechlorinated using sodium bisulfite. The treated effluent is conveyed to the river through a 24-inch outfall pipe without a diffuser that has approximately nine (9) feet of water over the crown of the pipe at mean low water. Wasted sludge is stored in a 125,000-gallon storage tank and dewatered by one belt filter press, composted and land applied by an independent contractor. The permittee maintains a Department approved Wet Weather Management Plan that was last updated in April of 2004. See Attachment B of this Fact Sheet for a schematic of the waste water treatment plant's processes.

## 3. CONDITIONS OF PERMITS

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

## 4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., §469(8)(C) states that at the point discharge from the Kittery waste water treatment facility, the Piscataqua River is classified as a Class SC waterbody. Maine law, 38 M.R.S.A., §465-B(3) contains the classification standards for Class SC waters. Class SC waters shall be the 3rd highest classification.

- A. Class SC waters must be of such quality that they are suitable for recreation in and on the water, fishing, aquaculture, propagation and restricted harvesting of shellfish, industrial process and cooling water supply, hydroelectric power generation, navigation and as a habitat for fish and other estuarine and marine life.

#### 4. RECEIVING WATER QUALITY STANDARDS (cont'd)

- B. The dissolved oxygen content of Class SC waters must be not less than 70% of saturation. Between May 15th and September 30th, the numbers of enterococcus bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 14 per 100 milliliters or an instantaneous level of 94 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures. The numbers of total coliform bacteria or other specified indicator organisms in samples representative of the waters in restricted shellfish harvesting areas may not exceed the criteria recommended under the National Shellfish Sanitation Program, United States Food and Drug Administration.
- C. Discharges to Class SC waters may cause some changes to estuarine and marine life provided that the receiving waters are of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community.

New Hampshire law, Title L, Chapter 495-A-8 II classifies the Piscatqua River at the point of discharge as a Class B water and states;

Class B waters shall be of the second highest quality and shall have no objectionable physical characteristics, shall contain a dissolved oxygen content of at least 75 percent of saturation, and shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 126 *Escherichia coli* per 100 milliliters, or greater than 406 *Escherichia coli* per 100 milliliters in any one sample; and for designated beach areas shall contain not more than a geometric mean based on at least 3 samples obtained over a 60-day period of 47 *Escherichia coli* per 100 milliliters, or 88 *Escherichia coli* per 100 milliliters in any one sample; unless naturally occurring. There shall be no disposal of sewage or waste into said waters except those which have received adequate treatment to prevent the lowering of the biological, physical, chemical or bacteriological characteristics below those given above, nor shall such disposal of sewage or waste be inimical to aquatic life or to the maintenance of aquatic life in said receiving waters. The pH range for said waters shall be 6.5 to 8.0 except when due to natural causes. Any stream temperature increase associated with the discharge of treated sewage, waste or cooling water, water diversions, or releases shall not be such as to appreciably interfere with the uses assigned to this class. The waters of this classification shall be considered as being acceptable for fishing, swimming and other recreational purposes and, after adequate treatment, for use as water supplies. Where it is demonstrated to the satisfaction of the department that the class B criteria cannot reasonably be met in certain surface waters at all times as a result of combined sewer overflow events, temporary partial use areas shall be established by rules adopted under RSA 485-A:6, XI-c, which meet, as a minimum, the standards specified in paragraph III.

#### 4. RECEIVING WATER QUALITY STANDARDS (cont'd)

Tidal waters utilized for swimming purposes shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 35 enterococci per 100 milliliters, or 104 enterococci per 100 milliliters in any one sample, unless naturally occurring. Those tidal waters used for growing or taking of shellfish for human consumption shall, in addition to the foregoing requirements, be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration.

It is noted the Piscataqua River is an interstate (Maine and New Hampshire) waterway. As a result, MEPDES permits issued in Maine and NPDES permits issued by the EPA in New Hampshire must contain limits to protect the water quality standards adopted by both States.

Limitations for each parameter in this permitting action are based on the most stringent criteria established for both States.

#### 5. RECEIVING WATER QUALITY CONDITIONS

A document entitled, The State of Maine, Department of Environmental Protection, 2004 Integrated Water Quality Monitoring and Assessment Report published by the Department pursuant to Section 305b of the Federal Water Pollution Control Act, has the Piscataqua River in Kittery in several different categories pertaining to the status of water quality. The Piscataqua River Estuary in Kittery (Waterbody ID 812) is listed in Appendix IV, *Category 2: Estuarine And Marine Waters Attaining Some Designated Uses – Insufficient Information On Other Uses*, (Waterbody 812-2) *Category 4-B-2: Estuarine And Marine Waters Impaired by Bacteria from Combined Sewer Overflows (TMDL Required only if Control Plans are Insufficient)* and (Waterbody 812-1, DMR Area 1) *Category 5-B-1: Estuarine and Marine Waters Impaired only by Bacteria (TMDL Required)*. The source of impairment (recreational uses and shellfish harvesting) has been identified as being caused by elevated levels of bacteria from four treatment plant outfalls, combined sewer overflows (CSOs), storm water runoff in the watershed and other non-point sources.

Department of Marine Resources (DMR) Area #1 is currently closed to the harvesting of shellfish. See Attachment A of this Fact Sheet for an aerial photograph depicting the shellfish harvesting area. The State's Department of Marine Resources traditionally closes shellfish harvesting areas if there are known sources of discharges with unacceptable bacteria levels (instream thresholds established in the National Shellfish Sanitation Program) or keep areas closed due to lack of updated information. In addition, a small area is closed in the immediate vicinity of all waste water treatment outfall pipes in the unlikely event of a failure in the disinfection system for the treatment plant.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

With the elimination of the three remaining CSOs in the Town of Kittery and compliance with the seasonal fecal coliform bacteria limitations in this permitting action, the Department has determined the Town's waste water treatment facility will not cause or contribute to the failure of the non-attainment cited above.

- a. Flow - The previous permitting action established a monthly average flow limitation of 2.5 MGD that is being carried forward in this permitting action. The limit reflects the monthly average design capacity of the existing waste water treatment facility. A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2001 through June 2005 indicates the monthly average flow has ranged from 0.821 MGD to 1.952 MGD with an arithmetic mean of 1.10 MGD.
- b. Dilution Factors: Department Regulation Chapter 530, "*Surface Water Toxics Control Program*", §4(A)(2) states that for discharges to estuaries where tidal flow is dominant (as is the case with Kittery) and marine discharges, dilution must be calculated as near-field or initial dilution, or that dilution available as the effluent plume rises from the point of discharge to its trapping level, at mean low water level and slack tide for the acute exposure analysis and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE, CORMIX or another predictive model determined by the Department to be appropriate for the site conditions.

Using plan and profile information provided by the permittee and the CORMIX model, the Department has determined the dilution factors for the discharge of 2.5 MGD from the waste water treatment facility are as follows:

Acute = 9.5:1                  Chronic = 64:1                  Harmonic mean = 192:1<sup>(1)</sup>

Footnote:

(1) Pursuant to Department rule Chapter 530, "*Surface Water Toxics Control Program*", §4(2)(c), the harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by a factor of three (3).

The acute factor of 9.5 to 1 represents 10.5% effluent within the near-field zone of dilution, the chronic factor of 64 to 1 represents 1.56% effluent within the near-field zone of dilution, and the harmonic mean factor of 192 to 1 represents 0.52% within the near-field zone of dilution.

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

- c. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS): - The previous permitting action established monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that are based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR Part 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 permitting action established monthly average, weekly average and daily maximum limitations based on a monthly average limit of 2.5 MGD that are being carried forward in this permitting action. The limitations were derived as follows:

$$\begin{aligned}\text{Monthly average: } & (2.5 \text{ MGD})(8.34)(30 \text{ mg/L}) = 626 \text{ lbs/day} \\ \text{Weekly average: } & (2.5 \text{ MGD})(8.34)(45 \text{ mg/L}) = 939 \text{ lbs/day} \\ \text{Daily maximum: } & (2.5 \text{ MGD})(8.34)(50 \text{ mg/L}) = 1,043 \text{ lbs/day}\end{aligned}$$

This permitting action carries forward the requirement for 85% removal for BOD and TSS pursuant to Department rule Chapter 525(3)(III)(a&b)(3).

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

A review of the DMR data for the period June 2001 to June 2005 indicates the discharge from the waste water treatment facility is consistently below 50% of the mass and concentration limits in this permitting action.

- d. Settleable Solids - The previous permit established a daily maximum concentration BPT limit of 0.3 ml/L that is being carried forward in this permitting action. A review of the monthly DMR data for the period January 2001 to June 2005 indicates the daily maximum settleable solids concentration has been 0.0 mg/L approximately 99% of the time with some isolated violations in March 2001, December 2003 and March 2005.



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

- e. Fecal Coliform Bacteria - The previous permitting action established monthly average and daily maximum limits of 14 colonies/100 ml and 43 colonies/100 ml and are based on the New Hampshire's Water Classification Program criteria for the receiving waters (including standards in the National Shellfish Sanitation Program) and requires application of the BPT technology. The limits are being carried forward in this permitting action. It is noted both limitations are more stringent than Maine's limits of 15 colonies/100 ml and 50 colonies/100 ml respectively imposed on dischargers to marine waters. The limitations are seasonal and apply from May 15<sup>th</sup> – September 30<sup>th</sup> of each year. The Department reserves the right to require year-round disinfection to protect the health and welfare of the public.

A review of the monthly DMR data for the period January 2002 to September 2005 indicates the monthly average (geometric mean) bacteria levels have ranged from 1.1 colony/100 ml to 6.3 colonies/100 ml with an arithmetic mean of 2.6 colonies/100 ml. As for the daily maximum, the DMR data indicates the bacteria levels range from 6 colony/100 ml to >120 colonies/100 ml with an arithmetic mean of 35 colonies/100 mL. The DMR data indicates the permittee has been in compliance with

the monthly average limit 100% of the time and in compliance with the daily maximum limit with the exception of three data points evaluated in said timeframe. The three data points not in compliance with the daily maximum limit of 43 colonies/100 mL occurred in the June of 2004 (>120 colonies), August of 2004 (>120 colonies) and September 2005 (112 colonies).

The permittee has indicated they are evaluating replacing their existing chemical (sodium hypochlorite) disinfection system with an ultraviolet system. Vendors for the ultraviolet systems are hesitant to guarantee the performance of the system given the fecal coliform bacteria limits established in this permit. The permittee has requested the Department consider establishing monthly average and daily maximum limitations of 200 colonies/100 ml and 400 colonies/ 100 mL as was done in the MEPDES permit issued for the Town of Vinalhaven in November of 2002 as they utilize an ultraviolet disinfection system. The MEPDES permit Fact Sheet for the Town of Vinalhaven contained the following text;

*The Department has not established BPT limitations for ultra-violet disinfection systems. Therefore, this permitting action is establishing a seasonal monthly average and daily maximum limits of 200 colonies/100 ml and 400 colonies/100 ml respectively, based on a Department best professional judgment of the level of treatment expected for the ultra-violet disinfection system being designed for the facility. In establishing the limits, the Department consulted with the Maine Department of Marine Resources and considered the standards in the National Shellfish Sanitation Program and the large dilution factors associated with the discharge and considered information provided by manufacturers of ultra-violet disinfection systems.*

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

It is noted the acute and chronic dilution factors for the Town of Vinalhaven are 56:1 and 225:1 respectively. The Town of Kittery's request is being considered by the Department but will take a period of time to approve or deny as the State of Maine is obligated to coordinate the proposal with the State of New Hampshire.

- f. Total Residual Chlorine - The previous permitting action established a daily maximum water quality based concentration limit of 0.12 mg/L and a monthly average technology based concentration limit of 0.1 mg/L. 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 Threshold	Chronic Threshold
Chlorine	0.013 mg/L	0.0075 mg/L	9.5:1	64:1	0.12 mg/L	0.46 mg/L

Example calculation: Acute – 0.013 mg/L (9.5) = 0.12 mg/L

To meet the water quality based limits calculated above, the permittee must dechlorinate the effluent prior to discharge. The Department has established a daily maximum BPT limitation of 0.3 mg/L for facilities that need to dechlorinate their effluent unless calculated water quality based limits are lower than 0.3 mg/L. In the case of the Kittery facility, the calculated acute (daily maximum) water quality based threshold of 0.12 mg/L is lower than the BPT limit of 0.3 mg/L, thus the water quality based limit of 0.12 mg/L is imposed. For the monthly average, the calculated chronic water quality based threshold of 0.46 mg/L is higher than the BPT limit of 0.1 mg/L, thus the BPT limit of 0.1 mg/L is imposed.

- g. pH Range- The previous permitting action erroneously established a water quality based pH range limit of 6.0 –8.2 standard units that is being revised to 6.0 -8.5 standard units. The new pH range limit is based on New Hampshire's most current Class B water quality standards.
- h. Mercury: Pursuant to Maine law, 38 M.R.S.A. §420 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL # W000389-46-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 6.4 parts per trillion (ppt) and 9.7 ppt, respectively, and a minimum monitoring frequency requirement of four tests per year for mercury. The interim mercury limits were scheduled to expire on October 1, 2001. However, effective June 15, 2001, the Maine Legislature enacted Maine law, 38 M.R.S.A. §413, sub-§11 specifying that interim mercury limits and monitoring requirements remain in effect. It is noted that the mercury

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

effluent limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as the limits and monitoring frequencies are regulated separately through Maine law, 38 M.R.S.A. §413 and Department rule Chapter 519. The interim mercury limits remain in effect and enforceable and modifications to the limits and/or monitoring frequencies will be formalized outside of this permitting document pursuant to Maine law, 38 M.R.S.A. §413 and Department rule Chapter 519.

- i. Whole Effluent Toxicity (WET) & Chemical-Specific Testing: Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants* set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

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

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

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

- 1) Level I – chronic dilution factor of  $<20:1$ .
- 2) Level II – chronic dilution factor of  $\geq 20:1$  but  $<100:1$ .
- 3) Level III – chronic dilution factor  $\geq 100:1$  but  $<500:1$  or  $>500:1$  and  $Q \geq 1.0$  MGD
- 4) Level IV – chronic dilution  $>500:1$  and  $Q \leq 1.0$  MGD

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

Department rule Chapter 530 (1)(D) specifies the criteria to be used in determining the minimum monitoring frequency requirements for WET, priority pollutant and analytical chemistry testing. Based on the Chapter 530 criteria, the Kittery facility falls into the Level II frequency category as the facility has a chronic dilution factor  $\geq 20:1$  but  $< 100:1$ . Chapter 530(1)(D)(1) specifies that surveillance and screening level testing requirements are as follows:

Screening level testing – Beginning 12 months prior to permit expiration and every five years thereafter.

Level	WET Testing	Priority pollutant testing	Analytical chemistry
II	2 per year	1 per year	4 per year

Surveillance level testing – Beginning upon issuance of the permit

Level	WET Testing	Priority pollutant testing	Analytical chemistry
II	1 per year	None required	2 per year

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

Department rule Chapter 530(D)(3)(c) states dischargers in Levels II may be reduce surveillance testing for individual WET species or chemicals to once every other year (1/2 Years) provided testing in the preceding 60 months does not indicate any reasonable potential for exceedences.

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

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

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

Chapter 530 §4(C), states “*The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions.*” The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations. The Department has no information on the background levels of metals in the water column in the Piscataqua River. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.

Chapter 530 §4(E), states “*In allocating assimilative capacity for toxic pollutants, the Department shall hold a portion of the total capacity in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The unallocated reserve must be reviewed and restored as necessary at intervals of not more than five years. The water quality reserve must be not less than 15% of the total assimilative quantity*”. Therefore, the Department is reserving 15% of the applicable water quality criteria is being used in the calculations of this permitting action.

### WET Evaluation

On December 9, 2005, the Department conducted a statistical evaluation on the aforementioned WET tests results. The statistical evaluation indicates the discharge from the Kittery waste water treatment facility does not exceed or have a reasonable potential to exceed the critical acute and chronic water quality thresholds of 10% and 1.6 % respectively (mathematical inverse of the acute and chronic dilution factors of 9.5:1 and 64:1 respectively), for any of the WET species specified for testing in Chapter 530. Therefore, no numeric limitations for any WET species are being established in this permitting action.

As for testing frequencies Chapter 530 §(2)(D)(3)(c) states in part that for Level II facilities “*...may reduce WET and chemical testing to once every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedences.*” Therefore, based on the results of the 12/9/05 statistical evaluation, the permittee qualifies for the testing reduction. This permitting action is establishing surveillance level testing as follows:

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

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

Level	WET Testing
II	1/2 Years

Surveillance level tests are to be conducted in a different calendar quarter of each year.

Chapter 530 §(2)(D) states:

- (4) *All dischargers having waived or reduced testing must file statements with the Department on or before December 31 of each year describing the following.*
- (a) *Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;*
  - (b) *Changes in the operation of the treatment works that may increase the toxicity of the discharge; and*
  - (c) *Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.*

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

Beginning 12 months prior to the expiration date of the permit and every five years thereafter, the permittee shall conduct screening level WET testing as follows:

Level	WET Testing
II	2/Year

There shall be at least six months between testing events.

Chemical specific evaluation

The 12/9/05 statistical evaluation indicates the discharge does not exceed or have a reasonable potential to exceed any acute, chronic or human health ambient water quality criteria (AWQC) for any of the chemicals tested to date. Therefore, no numeric limitations for any chemicals are being established in this permitting action.

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

As for testing frequencies Chapter 530 §(2)(D)(3)(c) states in part that for Level II facilities "...may reduce WET and chemical testing to once every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedences." It is noted Chapter 530 §(2)(D)(1) does not require priority pollutant testing during the surveillance level testing years. Based on the results of the 12/9/05 statistical evaluation, the permittee qualifies for the reduced testing. Therefore, surveillance level analytical chemistry is being established as follows:

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

Level	Analytical Chemistry
II	1/2 Years

For screening level testing, Chapter 530 §(2)(D)(1) requires that beginning 12 months prior to the expiration date of the permit, chemical testing shall be conducted at a frequency of 1/Year for priority pollutant testing and 1/Quarter for analytical chemistry. Therefore, screening level chemical is being established as follows:

Screening level testing – Beginning 12 months prior to permit expiration and every five years thereafter.

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

It is noted however that if future WET or chemical testing indicates the discharge exceeds critical water quality thresholds or AWQC, this permit will be reopened pursuant to Special Condition N, *Reopening of Permit For Modification*, of this permit to establish applicable limitations and monitoring requirements.

**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 waterbody to meet Maine's standards for Class SC classification or New Hampshire's standards for Class B classification.

**8. PUBLIC COMMENTS**

Public notice of this application was made in the Portsmouth Herald newspaper on February 17, 2006. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or request a public hearing, pursuant to Chapter 522 of the Department's rules.

## 9. DEPARTMENT CONTACTS

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

Gregg Wood  
Division of Water Quality Management  
Bureau of Land and Water Quality  
Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333-0017 Telephone (207) 287-3901  
e-mail: [gregg.wood@maine.gov](mailto:gregg.wood@maine.gov)

## 10. RESPONSE TO COMMENTS

During the period of February 23, 2006 through the date of issuance of this permit, the Department solicited comments on the proposed draft MEPDES permit/WDL for the discharge from the Town of Kittery's waste water treatment facility. The Department did not receive comments from the permittee, state or federal agencies, or interested parties that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.