



STATE OF MAINE
DEPARTMENT OF -
ENVIRONMENTAL PROTECTION -



PAUL R. LEPAGE -
GOVERNOR -

PAUL MERCER
COMMISSIONER

September 19, 2016

Dr. Patrick Wiley
Kennebunk Sewer District
71 Water Street
Kennebunk, ME. 04043
pwiley@ksdistrict.org

*Sent via electronic mail
Delivery confirmation requested*

**RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100935
Maine Waste Discharge License (WDL) Application #W002585-6D-H-R
Proposed Draft MEPDES Permit - Renewal**

Dear Dr. Wiley:

Attached is a proposed draft MEPDES permit and Maine WDL which the Department proposes to issue for your facility as a final document after opportunity for your review and comment. By transmittal of this letter, you are provided with an opportunity to comment on the proposed draft permit and its special and standard conditions. If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies and from any other parties who have notified the Department of their interest in this matter.

The comment period begins on September 19, 2016 and ends on October 19, 2016. All comments on the proposed draft permit must be received in the Department of Environmental Protection office on or before the close of business Wednesday, October 19, 2016. Failure to submit comments in a timely fashion will result in the proposed draft/license permit document being issued as drafted.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769
(207) 764-0477 FAX: (207) 760-3143

Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333-0017
Cindy.L.Dionne@maine.gov

If you have any questions regarding the matter, please feel free to contact me.

Sincerely,



Cindy L. Dionne
Division of Water Quality Management
Bureau of Water Quality
ph: 207-557-5950

Enc.

cc: Barry Mower, DEP
Pamela Parker, DEP
Matt Hight, DEP
Lori Mitchell, DEP
Michael Bolduc, Kennebunk Sewer District
Sean Mahoney, CLF
Kathleen Leyden, DACF
Environmental Review, DMR
David Webster, USEPA
David Pincumbe, USEPA
Alex Rosenberg, USEPA
Olga Vergara, USEPA
Marelyn Vega, USEPA
Richard Carvalho, USEPA



DEPARTMENT ORDER

IN THE MATTER OF

KENNEBUNK SEWER DISTRICT)	MAINE POLLUTANT DISCHARGE
KENNEBUNK, YORK COUNTY, MAINE)	ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS)		AND
ME0100935)	WASTE DISCHARGE LICENSE
W002585-6D-H-R)	RENEWAL
APPROVAL)	

In compliance with the applicable provisions of *Pollution Control*, 38 M.R.S. §§ 411 – 424-B, *Water Classification Program*, 38 M.R.S. §§ 464 – 470 and *Federal Water Pollution Control Act*, Title 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of the Kennebunk Sewer District (KSD/permittee), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

On April 7, 2016, the Department accepted as complete for processing an application from KSD for renewal of combination Waste Discharge License (WDL) # W002585-6D-E-R / Maine Pollutant Discharge Elimination System (MEPDES) permit # ME0100935, which was issued by the Department on September 12, 2011 for a five-year term. The September 12, 2011 permit authorized the discharge of secondary treated wastewater from a publicly owned treatment works (POTW) to the tidal portion of the Mousam River, Class SB, in Kennebunk, Maine.

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PERMIT SUMMARY

a. Terms and conditions

This permitting action is different from the September 12, 2011 permit in that it:

1. Eliminates the total suspended solids (TSS) annual mass limit based on new information;
2. Eliminates the dissolved oxygen weekly average limit based on new information;
3. Eliminates the ammonia (as N) limit based on new information;
4. Incorporates monitoring and reporting requirements for the interim mercury limitations established by the Department for this facility pursuant to *Certain deposits and discharges prohibited*, 38 M.R.S. § 420 and *Waste discharge licenses*, 38 M.R.S. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001);
5. Amends the whole effluent toxicity (WET) screening monitoring period from 12 months prior to permit expiration to 24 months prior to permit expiration;
6. Reduces the monitoring and reporting frequency for biochemical oxygen demand (BOD₅) and TSS from 2/Week to 1/Week;
7. Incorporates an Industrial Waste Survey (IWS) into Special Condition D. *Limitations for Industrial Users*;
8. Reduces the monitoring frequency for settleable solids from 5/Week to 3/Week in response to facility testing;
9. Reduces the monitoring frequency for pH from 1/Day to 5/Week in response to facility testing;
10. Establishes effluent monitoring and reporting requirements for total nitrogen (nitrate and nitrite as nitrogen and total Kjeldahl nitrogen as nitrogen);
11. Increases the amount of transported wastes the permittee is authorized to receive to 13,100 gallons per day as requested by KSD.

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CONCLUSIONS

BASED on the findings in the attached and incorporated Fact Sheet dated September 19, 2016, 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. § 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) Where the standards of classification of the receiving waterbody are not met, the discharge will not cause or contribute to the failure of the waterbody to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving waterbody 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 waterbody, 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 *Conditions of licenses*, 38 M.R.S. § 414-A(1)(D).

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ACTION

THEREFORE, the Department APPROVES the application of the KENNEBUNK SEWER DISTRICT to discharge secondary treated wastewater to the Mousam River, Class SB, in Kennebunk, Maine, SUBJECT TO ALL APPLICABLE STANDARDS AND REGULATIONS AND THE FOLLOWING CONDITIONS:

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 becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. *Maine Administrative Procedure Act*, 5 M.R.S. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (amended October 19, 2015).

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS ____ DAY OF _____ 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
PAUL MERCER, Commissioner

Date of initial receipt of application April 7, 2016

Date of application acceptance April 7, 2016

Date filed with Board of Environmental Protection _____

This Order prepared by Cindy L. Dionne, Bureau of Water Quality

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #001A** to the Mousam River in Kennebunk. These limitations and monitoring requirements apply to all flows conveyed through the secondary treatment system at all times except as otherwise noted in the associated footnotes ⁽¹⁾ on pages 7-9.

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow [50050]	Report MGD [03]	---	Report MGD [03]	---	---	---	Continuous [99/99]	Recorder [RC]
BOD ₅ [00310]	328 lbs./day [26]	492 lbs./day [26]	546 lbs./day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Week [01/07]	Composite [24]
BOD ₅ Percent Removal ⁽²⁾ [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
TSS [00530]	328 lbs./day [26]	492 lbs./day [26]	546 lbs./day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Week [01/07]	Composite [24]
TSS Percent Removal ⁽²⁾ [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	3/Week [03/07]	Grab [GR]
Fecal Coliform Bacteria ⁽³⁾ [31616] (Year round)	---	---	---	15/100 ml ⁽⁴⁾ [13]	---	50/100 ml [13]	3/Week [03/07]	Grab [GR]
TRC ⁽⁵⁾ [50060]	---	---	---	0.09 mg/L [19]	---	0.13 mg/L [19]	1/Day [01/01]	Grab [GR]
pH [00400]	---	---	---	---	---	6.0 – 9.0 SU [12]	5/Week [05/07]	Grab [GR]
Mercury (Total) ⁽⁶⁾ [71900]	---	---	---	15.1 ng/L [3M]	---	22.7 ng/L [3M]	1/Year [01/YR]	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).

SPECIAL CONDITIONS

A. 1. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Nitrate + Nitrite (as N) <i>[00630]</i> <i>Annually (May 1 through Oct. 31)</i>	Report lbs./day <i>[26]</i>	---	Report lbs./day <i>[26]</i>	Report mg/L <i>[19]</i>	---	Report mg/L <i>[19]</i>	1/Month <i>[01/30]</i>	24-Hour Composite <i>[24]</i>
Total Kjeldahl Nitrogen (as N) <i>[00625]</i> <i>Annually (May 1 through Oct. 31)</i>	Report lbs./day <i>[26]</i>	---	Report lbs./day <i>[26]</i>	Report mg/L <i>[19]</i>	---	Report mg/L <i>[19]</i>	1/Month <i>[01/30]</i>	24-Hour Composite <i>[24]</i>

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).

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

2. The permittee is authorized to discharge secondary treated municipal wastewaters from **Outfall #001A** to the Mousam River in Kennebunk. Such discharges must be limited and monitored by the permittee as specified below ⁽¹⁾:

SURVEILLANCE LEVEL TESTING – Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2, & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit).

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity⁽⁷⁾ <u>Acute – NOEL</u> <i>Americamysis bahia</i> (Mysid Shrimp) [TDM3E]	---	---	---	Report % [23]	1/Year [02/YR]	Composite [24]
<u>Chronic – NOEL</u> <i>Arbacia punctulata</i> (Sea urchin) [TBH3A]	---	---	---	8.4 % [23]	2/Year [02/YR]	Composite [24]
Analytical chemistry ⁽⁸⁾ [51447]	---	---	---	Report µg/L [28]	1/Year [01/YR]	Composite/Grab [24]

SCREENING LEVEL - Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity⁽⁷⁾ <u>Acute – NOEL</u> <i>Americamysis bahia</i> (Mysid Shrimp) [TDM3E]	---	---	---	Report % [23]	1/Quarter [01/90]	Composite [24]
<u>Chronic – NOEL</u> <i>Arbacia punctulata</i> (Sea urchin) [TBH3A]	---	---	---	8.4 % [23]	1/Quarter [01/90]	Composite [24]
Analytical chemistry ⁽⁸⁾ [51477]	---	---	---	Report µg/L [28]	1/Quarter [01/90]	Composite/Grab [24]
Priority Pollutant ⁽⁸⁾ [50008]	---	---	---	Report µg/L [28]	1/Year [01/YR]	Composite/Grab [24]

Footnotes: See Pages 7-9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

Footnotes

1. **Sampling** – The permittee must conduct all effluent sampling and analysis 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 must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services. Samples that are analyzed by laboratories operated by waste discharge facilities licensed pursuant to *Waste discharge licenses*, 38 M.R.S. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended April 1, 2010). Laboratory facilities that analyze compliance samples in-house are subject to the provisions and restrictions of 10-144 CMR 263. If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR.

Sampling Locations: Any change in sampling location(s) other than those specified below must be reviewed and approved by the Department in writing.

Influent sampling for BOD₅ and TSS must be conducted before the Parshall flume.

Effluent sampling must be conducted after dechlorination.

2. **Percent Removal** – The permittee must achieve a minimum of 85 percent removal of both TSS and BOD₅ for all flows receiving secondary treatment. The percent removal is calculated based on influent and effluent concentration values. The percent removal will be waived if the calculated percent removal is less than 85% and when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility may report “N9” on the monthly DMR.
3. **Fecal coliform bacteria** - Limits and monitoring requirements are in effect on a year-round basis.
4. **Fecal coliform bacteria** – The monthly average limitation is a geometric mean limitation and values must be calculated and reported as such.
5. **TRC** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. The permittee must utilize approved test methods that are capable of bracketing the limitations in this permit.

SPECIAL CONDITIONS

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

Footnotes

6. **Mercury** – The permittee must conduct all mercury monitoring required by this permit or required to determine compliance with interim limitations established pursuant to 06-096 CMR 519 in accordance with the U.S. Environmental Protection Agency (USEPA) “clean sampling techniques” found in USEPA Method 1669, *Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels*. All mercury analysis must be conducted in accordance with USEPA Method 1631, *Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry*. See **Attachment A** of this permit for a Department report form for mercury test results. Compliance with the monthly average limitation established in Special Condition A of this permit will be based on the cumulative arithmetic mean of all mercury tests results that were conducted utilizing sampling Method 1669 and analysis Method 1631E on file with the Department for this facility.

7. **WET Testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions set at levels to bracket the modified acute and chronic critical water quality thresholds of 9.8% and 8.4%, respectively), which provides a point estimate of toxicity in terms of NOEL. 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. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 10.2:1 and 11.9:1, respectively, for Outfall #001A.

Test results must be submitted to the Department no later than the next 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 must evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 9.8% and 8.4%, 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.

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SPECIAL CONDITIONS

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

Footnotes

- a. U.S. Environmental Protection Agency. 2002. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th ed. EPA 821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the acute method manual);
- b. U.S. Environmental Protection Agency. 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, 3rd ed. EPA 821-R-02-014. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the marine chronic method manual).

Results of WET tests must be reported on the “Whole Effluent Toxicity Report-Marine Water” form included as **Attachment B** of this permit each time a WET test is performed.

The permittee must analyze the effluent for the analytical chemistry and priority pollutant parameters specified on the “WET and Chemical Specific Data Report Form” included as **Attachment C** of this permit each time a WET test is performed.

8. **Analytical chemistry and Priority Pollutant testing** – Refers to those pollutants listed in their respective categories on the form included as **Attachment C** of this permit.

Analytical chemistry and priority pollutant test results must be submitted to the Department not later than the next DMR required by the permit, provided, however, that the permittee may review the laboratory reports for up to 10 business days of their availability before submitting them. The permittee must evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health ambient water quality criteria (AWQC) as established in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective July 29, 2012).

Analytical chemistry and priority pollutant testing must be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable, and must be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve the most current minimum reporting levels of detection as specified by the Department.

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The permittee must not discharge effluent that contains a visible oil sheen, foam or floating solids at any time which would impair the uses designated for the classification of the receiving waters.
2. The permittee must not discharge effluent that contains materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the uses designated for the classification of the receiving waters.
3. The permittee must not discharge effluent that causes visible discoloration or turbidity in the receiving waters or otherwise impairs the uses designated for the classification of the receiving waters.
4. The permittee must not discharge effluent that lowers the quality of any classified body of water below such classification, or lowers the existing quality of any body of water if the existing quality is higher than the classification.

C. TREATMENT PLANT OPERATOR

The person who has management responsibility over the treatment facility must hold a Maine **Grade III**, Biological Treatment certificate (or higher) or must be a Maine Registered Professional Engineer pursuant to *Sewage Treatment Operators*, 32 M.R.S. § 4171-4182 and *Regulations for Wastewater Operator Certification*, 06-096 CMR 531 (effective May 8, 2006). All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

D. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the wastewater collection and treatment system by a non-domestic source (user) must not pass through or interfere with the operation of the treatment system. The permittee must conduct an IWS any time a new industrial user proposes to discharge within its jurisdiction; an existing user proposes to make a significant change in its discharge; or at an alternative minimum, once every permit cycle, and submit the results to the Department. The IWS must identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of the federal Clean Water Act, 40 CFR Part 403 (general pretreatment regulations) or *Pretreatment Program*, 06-096 CMR 528 (last amended March 17, 2008).

SPECIAL CONDITIONS

E. 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 7, 2016; 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 must be reported in accordance with Standard Condition D(1)(f), *Twenty-four hour reporting*, of this permit.

F. NOTIFICATION REQUIREMENT

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

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and;
2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance.
3. For the purposes of this section, adequate notice must include information on:
 - (a) The quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
 - (b) Any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

G. WET WEATHER MANAGEMENT PLAN

The treatment facility staff must have a current written 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 plan must conform to Department guidelines for such plans and must 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.

SPECIAL CONDITIONS

G. WET WEATHER MANAGEMENT PLAN (cont'd)

The permittee must review their plan at least annually and record any necessary changes to keep the plan up to date. The Department may require review and update of the plan as it is determined to be necessary.

H. OPERATION & MAINTENANCE (O&M) PLAN

The permittee must maintain a current written comprehensive Operation & Maintenance (O&M) Plan for the facility. The plan must provide a systematic approach by which the permittee must 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 must 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 must be kept on-site at all times and made available to Department and USEPA personnel upon request.

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

I. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY

During the effective period of this permit, the permittee is authorized to receive and introduce into the treatment process or solids handling stream **a daily maximum of 13,100 gallons per day** of transported wastes, subject to the following terms and conditions.

1. "Transported wastes" means any liquid non-hazardous waste delivered to a wastewater treatment facility by a truck or other similar conveyance that has different chemical constituents or a greater strength than the influent described on the facility's application for a waste discharge license. Such wastes may include, but are not limited to septage, industrial wastes or other wastes to which chemicals in quantities potentially harmful to the treatment facility or receiving water have been added.
2. The character and handling of all transported wastes received must be consistent with the information and management plans provided in application materials submitted to the Department.

SPECIAL CONDITIONS

I. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY (cont'd)

3. At no time may the addition of transported wastes cause or contribute to effluent quality violations. Transported wastes may not cause an upset of or pass through the treatment process or have any adverse impact on the sludge disposal practices of the wastewater treatment facility.

Wastes that contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation must be refused. Odors and traffic from the handling of transported wastes may not result in adverse impacts to the surrounding community. If any adverse effects exist, the receipt or introduction of transported wastes into the treatment process or solids handling stream must be suspended until there is no further risk of adverse effects.

4. The permittee must maintain records for each load of transported wastes in a daily log which must include at a minimum the following.
 - (a) The date;
 - (b) The volume of transported wastes received;
 - (c) The source of the transported wastes;
 - (d) The person transporting the transported wastes;
 - (e) The results of inspections or testing conducted;
 - (f) The volumes of transported wastes added to each treatment stream; and
 - (g) The information in (a) through (d) for any transported wastes refused for acceptance.These records must be maintained at the treatment facility for a minimum of five years.
5. The addition of transported wastes into the treatment process or solids handling stream must not cause the treatment facility's design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of transported wastes into the treatment process or solids handling stream must be reduced or terminated in order to eliminate the overload condition.
6. Holding tank wastewater from domestic sources to which no chemicals in quantities potentially harmful to the treatment process have been added must not be recorded as transported wastes but should be reported in the treatment facility's influent flow.
7. During wet weather events, transported wastes may be added to the treatment process or solids handling facilities only in accordance with a current Wet Weather Flow Management Plan approved by the Department that provides for full treatment of transported wastes without adverse impacts.

SPECIAL CONDITIONS

I. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY (cont'd)

8. In consultation with the Department, chemical analysis is required prior to receiving transported wastes from new sources that are not of the same nature as wastes previously received. The analysis must be specific to the type of source and designed to identify concentrations of pollutants that may pass through, upset or otherwise interfere with the facility's operation.
9. Access to transported waste receiving facilities may be permitted only during the times specified in the application materials and under the control and supervision of the person responsible for the wastewater treatment facility or his/her designated representative.
10. The authorization is subject to annual review and, with notice to the permittee and other interested parties of record, may be suspended or reduced by the Department as necessary to ensure full compliance with Chapter 555 of the Department's rules and the terms and conditions of this permit.

J. 06-096 CMR 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TOXICS TESTING

By December 31 of each calendar year, the permittee must provide the Department with a certification describing any of the following that have occurred since the effective date of this permit [*ICIS Code 75305*]. See **Attachment C** of the Fact Sheet for an acceptable certification form to satisfy this Special Condition.

- (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;
- (c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge;

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SPECIAL CONDITIONS

J. 06-096 CMR 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TOXICS TESTING (cont'd)

In addition, in the comments section of the certification form, the permittee must provide the Department with statements describing;

- (d) Changes in stormwater collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge; and
- (e) Increases in the type or volume of transported (hauled) wastes accepted by the facility.

The Department may require that routine surveillance level testing be re-instated if it determines that there have been changes in the character of the discharge or if annual certifications described above are not submitted.

K. MONITORING AND REPORTING

Monitoring results obtained during the previous month must be summarized for each month and reported on separate 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 DMRs 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 must be submitted to the Department-assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Southern Maine Regional Office
Bureau of Water Quality
Division of Water Quality Management
312 Canco Road
Portland, Maine 04103

Alternatively, if the permittee submits an electronic DMR, the completed DMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the **15th day of the month** following the completed reporting period. Hard copy documentation submitted in support of the DMR must be postmarked on or before the **thirteenth (13th) day of the month or hand-delivered** to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15th) day of the month following the completed reporting period. Electronic documentation in support of the DMR must be submitted not later than close of business on the 15th day of the month following the completed reporting period.

SPECIAL CONDITIONS

L. REOPENING OF PERMIT FOR MODIFICATIONS

In accordance with 38 M.R.S. § 414-A(5) and upon evaluation of the test 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 limitations 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.

M. 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 must remain in full force and effect, and must be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

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MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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A. GENERAL PROVISIONS

1. General compliance. All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.

2. Other materials. Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

- (a) They are not
 - (i) Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law; or
 - (ii) Known to be hazardous or toxic by the licensee.
- (b) The discharge of such materials will not violate applicable water quality standards.

3. Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- (a) The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (b) Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

4. Duty to provide information. The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

5. Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

6. Reopener clause. The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

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7. Oil and hazardous substances. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

8. Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Confidentiality of records. 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

10. Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

11. Other laws. The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee of its obligation to comply with other applicable Federal, State or local laws and regulations.

12. Inspection and entry. The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), upon presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B. OPERATION AND MAINTENANCE OF FACILITIES

1. General facility requirements.

- (a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

- maximize removal of pollutants unless authorization to the contrary is obtained from the Department.
- (b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.
 - (c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.
 - (d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.
 - (e) The permittee shall install flow measuring facilities of a design approved by the Department.
 - (f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

2. Proper operation and maintenance. 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. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3. Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Bypasses.

- (a) Definitions.
 - (i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
 - (ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- (b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this section.
- (c) Notice.
 - (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

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- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).
- (d) Prohibition of bypass.
 - (i) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (C) The permittee submitted notices as required under paragraph (c) of this section.
 - (ii) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph (d)(i) of this section.

6. Upsets.

- (a) Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- (b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (c) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (ii) The permitted facility was at the time being properly operated; and
 - (iii) The permittee submitted notice of the upset as required in paragraph D(1)(f) , below. (24 hour notice).
 - (iv) The permittee complied with any remedial measures required under paragraph B(4).
- (d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

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C. MONITORING AND RECORDS

1. General Requirements. This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

2. Representative sampling. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

3. Monitoring and records.

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.
- (c) Records of monitoring information shall include:
 - (i) The date, exact place, and time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii) The date(s) analyses were performed;
 - (iv) The individual(s) who performed the analyses;
 - (v) The analytical techniques or methods used; and
 - (vi) The results of such analyses.
- (d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
- (e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

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D. REPORTING REQUIREMENTS

1. Reporting requirements.

- (a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
 - (i) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
 - (ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D(4).
 - (iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
- (b) Anticipated noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.
- (d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
 - (i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.
 - (ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.
 - (iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.
- (e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (f) Twenty-four hour reporting.
 - (i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance

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has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

2. Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

3. Availability of reports. Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

4. Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(i) One hundred micrograms per liter (100 ug/l);

(ii) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or

(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

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- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (i) Five hundred micrograms per liter (500 ug/l);
 - (ii) One milligram per liter (1 mg/l) for antimony;
 - (iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
 - (iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

5. Publicly owned treatment works.

- (a) All POTWs must provide adequate notice to the Department of the following:
- (i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
 - (ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
 - (iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

E. OTHER REQUIREMENTS

1. Emergency action - power failure. Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

- (a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.
- (b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

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2. Spill prevention. (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminants and shall specify means of disposal and or treatment to be used.

3. Removed substances. Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

4. Connection to municipal sewer. (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

F. DEFINITIONS. For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. Except, however, bacteriological tests may be calculated as a geometric mean.

Average weekly discharge limitation means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Composite sample means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

Continuous discharge means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Daily discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

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Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by approved States as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Flow weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab sample means an individual sample collected in a period of less than 15 minutes.

Interference means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum daily discharge limitation means the highest allowable daily discharge.

New source means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

- (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

Pass through means a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Person means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

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Point source means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works ("POTW") means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

Septage means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

Time weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

Toxic pollutant includes any pollutant listed as toxic under section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing section 405(d) of the CWA. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole effluent toxicity means the aggregate toxic effect of an effluent measured directly by a toxicity test.

ATTACHMENT A



Data Date Range: 22/Mar/2001 - 22/Mar/2016

Facility: KENNEBUNK

Permit Number: ME0100935

Max (ug/l): 0.0168

Average (ug/l): 0.0046

Sample Date	Result (ng/l)	Lsthan	Clean
02/02/2009	2.18	N	T
05/12/2009	3.84	N	T
08/10/2009	16.80	N	T
09/08/2009	5.34	N	T
02/01/2010	3.44	N	T
04/06/2010	3.59	N	T
06/08/2010	4.76	N	T
08/10/2010	10.00	N	T
11/02/2010	4.89	N	T
02/07/2011	2.49	N	T
05/09/2011	2.05	N	T
08/02/2011	4.19	N	T
11/07/2011	4.42	N	T
02/06/2012	3.45	N	T
04/02/2013	2.60	N	T
07/14/2014	2.88	N	T
02/03/2015	1.41	N	T
11/10/2015	5.06	N	T

ATTACHMENT B

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
WHOLE EFFLUENT TOXICITY REPORT
MARINE WATERS**

Facility Name _____ MEPDES Permit # _____
Pipe # _____

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 _____
mm/dd/yy mm/dd/yy

Chlorinated? _____ Dechlorinated? _____

Results	% effluent		Effluent Limitations
	mysisd shrimp	sea urchin	
A-NOEL			A-NOEL
C-NOEL			C-NOEL

Data summary	mysisd shrimp	sea urchin	Salinity Adjustment
	% survival	% fertilized	
QC standard	>90	>70	
lab control			brine
receiving water control			sea salt
conc. 1 (%)			other
conc. 2 (%)			
conc. 3 (%)			
conc. 4 (%)			
conc. 5 (%)			
conc. 6 (%)			
stat test used			

place * next to values statistically different from controls

Reference toxicant	mysisd shrimp	sea urchin
	A-NOEL	C-NOEL
toxicant / date		
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 "ToxSheet (Marine Version), March 2007."

ATTACHMENT C

**Maine Department of Environmental Protection
WET and Chem**

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)
Acute dilution factor
Chronic dilution factor
Human health dilution factor
Criteria type: M(arine) or F(resh)

Flow for Day (MGD)⁽¹⁾ Flow Avg. for Month (MGD)⁽²⁾
Date Sample Collected Date Sample Analyzed

Laboratory _____ Telephone _____
Address _____
Lab Contact _____ Lab ID # _____

Last Revision - July 1, 2015

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

MARINE AND ESTUARY VERSION

Please see the footnotes on the last page.

WHOLE EFFLUENT TOXICITY		Effluent Limits, %		Receiving Water or Ambient	Effluent Concentration (ug/L or as noted)	WET Result, % Do not enter % sign	Reporting Limit Check	Possible Exceedence ⁽⁷⁾	
		Acute	Chronic					Acute	Chronic
	Mysid Shrimp								
	Sea Urchin								
WET CHEMISTRY									
	pH (S.U.) ⁽⁹⁾								
	Total Organic Carbon (mg/L)			NA					
	Total Solids (mg/L)			NA					
	Total Suspended Solids (mg/L)			NA					
	Salinity (ppt.)								
ANALYTICAL CHEMISTRY ⁽³⁾									
	Also do these tests on the effluent with WET. Testing on the receiving water is optional	Reporting Limit	Effluent Limits, ug/L				Reporting Limit Check	Possible Exceedence ⁽⁷⁾	
			Acute ⁽⁶⁾	Chronic ⁽⁶⁾				Health ⁽⁶⁾	Acute
	TOTAL RESIDUAL CHLORINE (mg/L) ⁽⁹⁾	0.05			NA				
	AMMONIA	NA			(8)				
M	ALUMINUM	NA			(8)				
M	ARSENIC	5			(8)				
M	CADMIUM	1			(8)				
M	CHROMIUM	10			(8)				
M	COPPER	3			(8)				
M	CYANIDE, TOTAL	5			(8)				
	CYANIDE, AVAILABLE ^(3a)	5			(8)				
M	LEAD	3			(8)				
M	NICKEL	5			(8)				
M	SILVER	1			(8)				
M	ZINC	5			(8)				

Maine Department of Environmental Protection
WET and Chem

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PRIORITY POLLUTANTS ⁽⁴⁾		Effluent Limits				Reporting Limit Check	Possible Exceedence ⁽⁷⁾		
	Reporting Limit	Acute ⁽⁶⁾	Chronic ⁽⁶⁾	Health ⁽⁶⁾	Acute		Chronic	Health	
M	ANTIMONY	5							
M	BERYLLIUM	2							
M	MERCURY (5)	0.2							
M	SELENIUM	5							
M	THALLIUM	4							
A	2,4,6-TRICHLOROPHENOL	5							
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	20							
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-BROMOPHENYLPHENYL ETHER	5							
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	5							
BN	BENZO(G,H,I)PERYLENE	5							
BN	BENZO(K)FLUORANTHENE	5							
BN	BIS(2-CHLOROETHOXY)METHANE	5							
BN	BIS(2-CHLOROETHYL)ETHER	6							
BN	BIS(2-CHLOROISOPROPYL)ETHER	6							
BN	BIS(2-ETHYLHEXYL)PHTHALATE	10							
BN	BUTYLBENZYL PHTHALATE	5							
BN	CHRYSENE	5							
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							
BN	FLUORANTHENE	5							

Maine Department of Environmental Protection
WET and Chem

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BN	FLUORENE	5												
BN	HEXACHLOROBENZENE	5												
BN	HEXACHLOROBUTADIENE	5												
BN	HEXACHLOROCYCLOPENTADIENE	10												
BN	HEXACHLOROETHANE	5												
BN	INDENO(1,2,3-CD)PYRENE	5												
BN	ISOPHORONE	5												
BN	N-NITROSODI-N-PROPYLAMINE	10												
BN	N-NITROSODIMETHYLAMINE	5												
BN	N-NITROSODIPHENYLAMINE	5												
BN	NAPHTHALENE	5												
BN	NITROBENZENE	5												
BN	PHENANTHRENE	5												
BN	PYRENE	5												
P	4,4'-DDD	0.05												
P	4,4'-DDE	0.05												
P	4,4'-DDT	0.05												
P	A-BHC	0.2												
P	A-ENDOSULFAN	0.05												
P	ALDRIN	0.15												
P	B-BHC	0.05												
P	B-ENDOSULFAN	0.05												
P	CHLORDANE	0.1												
P	D-BHC	0.05												
P	DIELDRIN	0.05												
P	ENDOSULFAN SULFATE	0.1												
P	ENDRIN	0.05												
P	ENDRIN ALDEHYDE	0.05												
P	G-BHC	0.15												
P	HEPTACHLOR	0.15												
P	HEPTACHLOR EPOXIDE	0.1												
P	PCB-1016	0.3												
P	PCB-1221	0.3												
P	PCB-1232	0.3												
P	PCB-1242	0.3												
P	PCB-1248	0.3												
P	PCB-1254	0.3												
P	PCB-1260	0.2												
P	TOXAPHENE	1												
V	1,1,1-TRICHLOROETHANE	5												
V	1,1,1,2-TETRACHLOROETHANE	7												
V	1,1,2-TRICHLOROETHANE	5												
V	1,1-DICHLOROETHANE	5												
V	1,1-DICHLOROETHYLENE (1,1-dichloroethene)	3												
V	1,2-DICHLOROETHANE	3												
V	1,2-DICHLOROPROPANE	6												
V	1,2-TRANS-DICHLOROETHYLENE (1,2-trans-dichloroethene)	5												
V	1,3-DICHLOROPROPYLENE (1,3-dichloropropene)	5												
V	2-CHLOROETHYLVINYL ETHER	20												
V	ACROLEIN	NA												
V	ACRYLONITRILE	NA												
V	BENZENE	5												

**Maine Department of Environmental Protection
WET and Chem**

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

V	BROMOFORM	5								
V	CARBON TETRACHLORIDE	5								
V	CHLOROBENZENE	6								
V	CHLORODIBROMOMETHANE	3								
V	CHLOROETHANE	5								
V	CHLOROFORM	5								
V	DICHLOROBROMOMETHANE	3								
V	ETHYLBENZENE	10								
V	METHYL BROMIDE (Bromomethane)	5								
V	METHYL CHLORIDE (Chloromethane)	5								
V	METHYLENE CHLORIDE	5								
V	TETRACHLOROETHYLENE (Perchloroethylene or Tetrachloroethene)	5								
V	TOLUENE	5								
V	TRICHLOROETHYLENE (Trichloroethene)	3								
V	VINYL CHLORIDE	5								

Notes:

- (1) Flow average for day pertains to WET/PP composite sample day.
- (2) Flow average for month is for month in which WET/PP sample was taken.
- (3) Analytical chemistry parameters must be done as part of the WET test chemistry.
- (3a) Cyanide, Available (Cyanide Amenable to Chlorination) is not an analytical chemistry parameter, but may be required by certain discharge permits .
- (4) Priority Pollutants should be reported in micrograms per liter (ug/L).
- (5) Mercury is often reported in nanograms per liter (ng/L) by the contract laboratory, so be sure to convert to micrograms per liter on this spreadsheet.
- (6) Effluent Limits are calculated based on dilution factor, background allocation (10%) and water quality reserves (15% - to allow for new or changed discharges or non-point sources).
- (7) Possible Exceedence determinations are done for a single sample only on a mass basis using the actual pounds discharged. This analysis does not consider watershed wide allocations for fresh water discharges.
- (8) These tests are optional for the receiving water. However, where possible 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.
- (9) pH and Total Residual Chlorine must be conducted at the time of sample collection. Tests for Total Residual Chlorine need be conducted only when an effluent has been chlorinated or residual chlorine is believed to be present for any other reason.

Comments:

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
WASTE DISCHARGE LICENSE**

PROPOSED DRAFT FACT SHEET

Date: **SEPTEMBER 19, 2016**

MEPDES PERMIT: **ME01000935**
WASTE DISCHARGE LICENSE: **W002585-6D-H-R**

NAME AND ADDRESS OF APPLICANT:

**KENNEBUNK SEWER DISTRICT
P.O. BOX 648, 71 WATER STREET
KENNEBUNK, ME 04043-0648**

COUNTY: **YORK**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**71 WATER STREET
KENNEBUNK, MAINE 04043**

RECEIVING WATER / CLASSIFICATION: **MOUSAM RIVER/CLASS SB**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

**MR. PATRICK WILEY, PhD, ASST. MANAGER
KENNEBUNK SANITARY DISTRICT
(207) 985-4741
pwiley@ksdistrict.org**

1. APPLICATION SUMMARY

- a. On April 7, 2016, the Department of Environmental Protection (Department) accepted as complete for processing an application from the Kennebunk Sewer District (KSD/permittee) for renewal of combination Waste Discharge License (WDL) # W002585-6D-E-R / Maine Pollutant Discharge Elimination System (MEPDES) permit # ME0100935, which was issued by the Department on September 12, 2011 for a five-year term. The September 12, 2011 permit authorized the discharge of secondary treated wastewater from a publicly owned treatment works (POTW) to the tidal portion of the Mousam River, Class SB, in Kennebunk, Maine.

2. PERMIT SUMMARY

- a. Terms and conditions

This permitting action is different from the September 12, 2011 permit in that it:

1. Eliminates the total suspended solids (TSS) annual mass limit based on new information;
2. Eliminates the dissolved oxygen weekly average limit based on new information;
3. Eliminates the ammonia (as N) limit based on new information;
4. Incorporates monitoring and reporting requirements for the interim mercury limitations established by the Department for this facility pursuant to *Certain deposits and discharges prohibited*, 38 M.R.S. § 420 and *Waste discharge licenses*, 38 M.R.S. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001);
5. Amends the whole effluent toxicity (WET) screening monitoring period from 12 months prior to permit expiration to 24 months prior to permit expiration;
6. Reduces the monitoring and reporting frequency for biochemical oxygen demand (BOD₅) and TSS from 2/Week to 1/Week;
7. Incorporates an Industrial Waste Survey (IWS) into Special Condition D. *Limitations for Industrial Users*;
8. Reduces the monitoring frequency for settleable solids from 5/Week to 3/Week in response to facility testing;

2. PERMIT SUMMARY

a. Terms and conditions (cont'd)

9. Reduces the monitoring frequency for pH from 1/Day to 5/Week in response to facility testing;
10. Establishes effluent monitoring and reporting requirements for total nitrogen (nitrate and nitrite as nitrogen and total Kjeldahl nitrogen as nitrogen);
11. Increases the amount of transported wastes the permittee is authorized to receive to 13,100 gallons per day as requested by KSD.

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

June 20, 1994 – The Department issued WDL #W002585-46-B-R for a five-year term.

October 2, 1996 - The U.S. Environmental Protection Agency (USEPA) issued a renewal of National Pollutant Discharge Elimination System (NPDES) permit #ME0100935 for a five-year term.

November 3, 1997 – The Department administratively modified the 6/20/94 WDL by establishing revised monthly average (geometric mean) and daily maximum technology based limitations for fecal coliform bacteria.

April 30, 1999 – The Department issued WDL modification W002585-5L-C-M. The modification established limitations and monitoring requirements for whole effluent toxicity (WET) species as well as monthly average and or daily maximum water quality based limits for ammonia, copper, cyanide, lead and nickel.

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 EPA to administer the NPDES permitting program. From that date forward, the permitting program has been referred to as the MEPDES permit program and permit #ME0100935 (same as the NPDES permit number) has been used as the primary reference number for the KSD facility.

March 11, 2002 – The Department administratively modified the 6/20/94 WDL by requiring year-round disinfection as opposed to seasonal (May 15th – September 30th) disinfection.

November 2005 – The Department issued a document entitled Draft Mousam River Estuary Modeling Report, November 2005, for public review and comment.

2. PERMIT SUMMARY (cont'd)

April 10, 2006 – The Department administratively modified 6/20/94 WDL by establishing limitations and monitoring requirements for whole effluent toxicity (WET) and chemical specific parameters pursuant to a new Department rules Chapter 530, *Surface Water Toxics Control Program* and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*.

September 18, 2006 – The Department issued combination MEPDES permit #ME0100935/WDL #W002585-5L-D-R for a five-year term.

June 24, 2011 – The KSD submitted a timely and complete application to the Department for the renewal of the MEPDES permit for the waste water treatment facility.

September 12, 2011 – The Department issued combination MEPDES permit #ME0100935/WDL #W002585-6D-E-R for a five-year term.

November 4, 2013 – The Department issued minor revision #ME0100935 / # W002585-6D-G-M for the amendment of the acute WET limit and monitoring frequency requirement.

April 7, 2016 – The permittee submitted a timely and complete General Application to the Department for renewal of the September 12, 2011 permit (including subsequent minor permit revisions and permit modifications). The application was accepted for processing on the same day and was assigned WDL #W002585-6D-H-R / MEPDES #ME0100935.

- c. Source Description: The facility located at 71 Water Street in the Town of Kennebunk treats domestic, industrial, and commercial wastewater generated by approximately 3,100 users within the District's boundaries. There are no significant industrial users (contributing more than 10% of the volume of wastewater received by the treatment facility) currently contributing to the waste stream treated at the facility.

The KSD maintains a 99% separated sewage collection system that is approximately 40 miles in length with 28 pump stations. All pump stations have back-up power via on-site emergency generators or are fitted with receptacles such that a portable generator can be used to supply power in the event of a power failure.

The previous permit authorized the District to receive up to 6,000 gallons per day (gpd) of septage. See Section 6.p. of this Fact Sheet.

A map showing the location of the facility and the receiving water is included as Fact Sheet **Attachment A**.

2. PERMIT SUMMARY (cont'd)

- d. Wastewater Treatment: Wastewater conveyed to the treatment facility receives a preliminary level of treatment via a step-screen and grit removal followed by flow measurement via a 9-inch Parshall flume. After flow measurement, wastewater receives a primary level of treatment via two primary clarifiers measuring 45 feet in diameter with sidewall depths of 12 feet. The primary clarifiers are operated in parallel. After primary treatment, water receives a secondary level of treatment via three trains of three high density rotating biological contactors (RBC's), each being approximately 12 feet in diameter, 23 feet long and having a surface area of approximately 100,000 square feet. After biological treatment wastewater is conveyed to two secondary clarifiers each measuring 45 feet in diameter with sidewall depths of 14 feet.

As part of a recent upgrade to the facilities, a recycle stream from the secondary clarifiers was added so that the RBC basins also act as activated sludge tanks. Therefore, a hybrid secondary system that contains both attached growth (on the RBCs) and suspended growth (in the RBC basins) has been created. This was done with the intent to improve the treatment performance of the former system. Also included in the facility improvements was the addition of chlorine contact tanks.

The permittee disinfects the wastewater with sodium hypochlorite and dechlorinates with sodium bisulfite prior to being discharged to the Mousam River. During wet weather events that exceed the dry weather capacity of the secondary treatment system, the permittee is able to route excess flows to a stormwater clarifier. The Stormwater Clarifier has a capacity of approximately 93,000 gallons. Once excess flows abate, wastewater from the Stormwater Clarifier is pumped back to the influent wetwell to receive secondary treatment. During significant wet weather events when the Stormwater Clarifier capacity is exceeded, flows from the Stormwater Clarifier are diverted to the chlorine contact tank mixing chamber for disinfection, dechlorination and blended with secondary flows prior to discharge. Blended flows are required to meet effluent water quality standards as permitted in Special Condition A.1. Control of the system is aided by an oxidation reduction potential (ORP) meter and continuous monitoring of chlorine residual levels. The outfall pipe measures 18 inches in diameter and extends out into the receiving water such that there is approximately 1.0 foot of water over the crown of the pipe at mean low water.

The facility also has sludge storage tanks for processing sludge generated on site. The sludge is dewatered by two Huber Rotamat® ROS3 Q440 Inclined screw presses and shipped offsite for composting.

See **Attachment B** of this Fact Sheet for a facility schematic.

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3. CONDITIONS OF PERMIT

Conditions of licenses, 38 M.R.S. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require the 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. § 420 and Department rule *Surface Water Toxics Control Program*, 06-096 CMR 530 (effective March 21, 2012), 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 July 29, 2012), 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. § 469(8) states “All estuarine and marine waters lying within the boundaries of York County and that are not otherwise classified are Class SB waters.” *Standards for classification of estuarine and marine waters*, 38 M.R.S. § 465-B(2) describes the standards for Class SB waters.

5. RECEIVING WATER QUALITY CONDITIONS

The *State of Maine 2012 Integrated Water Quality Monitoring and Assessment Report*, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act lists the receiving water in the vicinity of the discharge under the following:

“Category 4-A: Estuarine and Marine Waters with Impaired Use, TMDL Completed” for elevated fecals. The TMDL was approved in 2009.

“Category 5-A: Estuarine and Marine Waters Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)” for “Municipal point source, Nonpoint source, Sediment Oxygen Demand.” The Impaired Use is listed as Marine Life Use Support.

The Maine Department of Marine Resources (MEDMR) Pollution Area #7 (See **Attachment D** of this Fact Sheet) *Little River to Cape Arundel (Wells, Kennebunk, and Kennebunkport)* is currently closed to the harvesting of shellfish. The MEDMR closes or restricts areas based on ambient water quality data that indicate the area did not meet or marginally met the standards in the National Shellfish Sanitation Program. In addition, MEDMR closes areas by default in the vicinity of outfall pipes associated with treated sanitary wastewater discharges in the event of a failure of the disinfection system.

Compliance with the limitations established in the permit ensures that the discharge of treated wastewater will not cause or contribute to exceedance of water quality standards.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

- a. Flow: The monthly average design flow capacity of the wastewater treatment facility (WWTF) is 1.31 million gallons per day (MGD). The daily maximum design capacity and peak flow capacity to the wastewater treatment facility is 2.31 MGD. Peak flows above 2.31 MGD are diverted to the Stormwater Clarifier for solids capture and equalization or overflows to combine with the secondary effluent before entering the chlorine contact tank mixing chamber for disinfection, dechlorination and effluent flow metering. Flow equalized in the Stormwater Clarifier that does not discharge to the chlorine contact take is reintroduced to the influent wetwell as part of the influent flow to the WWTF.

The Department reviewed 52 Discharge Monitoring Reports (DMRs) that were submitted for the period of October 1, 2011 through February 1, 2016. A review of data indicates the following:

Flow

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	Report	0.46 – 1.18	0.7
Daily Maximum	Report	0.51 – 2.56	1.2

- b. Dilution Factors: The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in *Surface Water Toxics Control Program*, 06-096 CMR 530 (last amended March 21, 2012). Where freshwater river flow is dominant and instantaneous mixing across the width can be assumed, dilution must be calculated as in subsection §4(B). Where appropriate, other methods such as dye studies or water quality methods may be used.

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

The Department has made the determination that at the point of discharge, freshwater river flow is dominant. Therefore the dilution factors for the facility have been calculated based on 1.31 MGD and applicable river flows as follows:

$$\text{Acute: } 1\text{Q}10 = 18.7 \text{ cfs}^{(1,2)} \Rightarrow \frac{(18.7 \text{ cfs})(0.6464) + (1.31 \text{ MGD})}{(1.31 \text{ MGD})} = 10.2:1$$

$$\text{Chronic: } 7\text{Q}10 = 22 \text{ cfs}^{(3)} \Rightarrow \frac{(22 \text{ cfs})(0.6464) + (1.31 \text{ MGD})}{(1.31 \text{ MGD})} = 11.9:1$$

$$\text{Harmonic Mean: } = 66 \text{ cfs}^{(4)} \Rightarrow \frac{(66 \text{ cfs})(0.6464) + (1.31 \text{ MGD})}{(1.31 \text{ MGD})} = 33.6:1$$

Notes:

- (1) Estimated 1Q10 based on 85% of the 7Q10.
- (2) Chapter 530, §(4)(B)(1) states that 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. Based on information provided by KSD as to the configuration, location and observed hydraulic issues associated with the outfall pipe, the Department has made the determination that the discharge does receive rapid and complete mixing with the receiving water, therefore 100% of the 1Q10 is applicable in acute statistical evaluations pursuant to Chapter 530.
- (3) Based on a Department analysis of flow records for the Mousam River for the period 1999-2004. See the discussion on page 11 of a Department document entitled Draft Mousam River Estuary Modeling Report, November 2005.
- (4) The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the U.S. EPA publication, "*Technical Support Document for Water Quality-Based Toxics Control*" (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow on which human health dilutions are based in a riverine 7Q10 flow situation.

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

- c. Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS): Previous permitting action established, and this permitting action is carrying forward, monthly average and weekly average BOD₅ and TSS concentration limits of 30 milligrams per liter (mg/L) and 45 mg/L, respectively, which were based on secondary treatment requirements pursuant to 40 CFR 133.102 and 06-096 CMR 525(3)(III). Previous permitting action also established, and this permitting action is carrying forward, daily maximum BOD₅ and TSS concentration limits of 50 mg/L based on a Department best professional judgement (BPJ) of BPT for secondary treated wastewater.

The previous permitting action established monthly average and weekly average mass limits based on a monthly average design limit of 1.31 MGD, and the corresponding concentration limits cited above.

Mass limitations were derived as follows:

Monthly Average	(30 mg/L)(8.34 lbs./gallon)(1.31 MGD) =	328 lbs./day
Weekly Average	(45 mg/L)(8.34 lbs./gallon)(1.31 MGD) =	492 lbs./day
Daily Maximum	(50 mg/L)(8.34 lbs./gallon)(1.31 MGD) =	546 lbs./day

This permitting action is also carrying forward the requirement for a minimum of 85% removal of BOD₅ & TSS pursuant to 06-096 CMR 525(3)(III)(a)(3) and (b)(3).

A summary of BOD₅ data as reported on the DMRs submitted to the Department for the period of October 1, 2011 through February 1, 2016 is as follows:

BOD₅ Mass

Value	Limit (lbs./day)	Range (lbs./day)	Average (lbs./day)
Monthly Average	328	31 – 118	60
Weekly Average	492	38 – 218	79
Daily Maximum	546	43 – 385	104

BOD₅ Concentration

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	6 - 22	10
Weekly Average	45	6 - 45	3
Daily Maximum	50	7 - 80	16

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

A summary of TSS data as reported on the DMRs (n = 52) submitted to the Department for the period of October 1, 2011 through February 1, 2016 is as follows:

TSS Mass

Value	Limit (lbs./day)	Range (lbs./day)	Average (lbs./day)
Monthly Average	328	18 – 68	34
Weekly Average	492	19 – 150	50
Daily Maximum	546	21 – 205	65

TSS Concentration

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	3 – 11	5
Weekly Average	45	3 – 14	7
Daily Maximum	50	4 – 20	9

Minimum monitoring frequency requirements in MEPDES permits are prescribed by 06-096 CMR Chapter 523§5(i). The USEPA has published guidance entitled, *Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies* (USEPA Guidance April 1996). In addition, the Department has supplemented the USEPA guidance with its own guidance entitled, *Performance Based Reduction of Monitoring Frequencies - Modification of EPA Guidance Released April 1996* (Maine DEP May 22, 2014). Both documents are being utilized to evaluate the compliance history for each parameter regulated by the previous permit to determine if a reduction in the monitoring frequencies is justified.

Although USEPA's 1996 Guidance recommends evaluation of the most current two years of effluent data for a parameter, the Department is considering 52 months of data (October 1, 2011 through February 1, 2016). A review of the mass monitoring data for BOD₅ & TSS indicates the ratios (expressed in percent) of the long term effluent average to the monthly average limits can be calculated as 18% for BOD₅ and 10% for TSS. According to Table I of the USEPA Guidance and Department Guidance, the monitoring requirement can be reduced to 1/Month for BOD₅ and TSS. However, taking into consideration both the USEPA and Department Guidance, this permitting action is reducing the monitoring frequency for BOD₅ and TSS from 2/Week to 1/Week.

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

- d. Total Suspended Solids (TSS) Annual Mass Limit: Previous permitting action established the TSS annual average mass limit of 186 lbs./day, based on a flow of 1.31 MGD and a concentration of 17 mg/L.

A review of the DMR data for the period October 1, 2011 through March 1, 2016 indicates the following:

TSS Annual Average

Year	Annual Monthly Average Limit (lbs./day)	Annual Monthly Average (lbs./day)
2011	186	42
2012		37
2013		30
2014		36
2015		29

KSD is discharging an average of 19% of the annual limit that was established in the previous permit. This permitting action is eliminating the annual average TSS mass limit due to new information that suggests TSS from the permittee is not causing or contributing to dissolved oxygen (DO) non-attainment in the Mousam River estuary. Please see the Nitrogen section in this Fact Sheet for more information.

- e. BOD and TSS % Removal: A review of the DMR data for the period October 1, 2011 through March 1, 2016 indicates the facility has been in compliance with said limitations 100% of the time as values have been reported as follows:

BOD % Removal (DMRs=52)

Value	Limit (%)	Range (%)	Mean
Monthly Average	85	92 – 98	96

TSS % Removal (DMRs=52)

Value	Limit (%)	Range (%)	Mean
Monthly Average	85	96 - 99	98

The monitoring frequency of 1/Month in the previous permitting action is being carried forward in the permitting action.

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

- f. Settleable Solids: The previous permitting action established a daily maximum concentration limit of 0.3 mL/L for settleable solids and is considered by the Department as a best professional judgement of BPT for secondary treated wastewater. A review of the DMR data for the period of October 1, 2011 through February 1, 2016 (n = 52) indicates the daily maximum settleable solids concentration values ranged from 0.01 mL/L to 0.20 mL/L. Due to the compliance record for this parameter, and in accordance with Department guidance, this permitting action is reducing the monitoring frequency from 5/Week to 3/Week.

- g. Fecal Coliform Bacteria: The previous permitting action established, and this permitting action is carrying forward, seasonal monthly average and daily maximum concentration limits of 15 colonies/100 ml and 50 colonies/100 ml, respectively, for fecal coliform bacteria, which are consistent with the National Shellfish Sanitation Program. Bacteria limits are applicable year round to protect the health, safety and welfare of the public.

A summary of effluent fecal coliform bacteria data as reported on the DMRs for the period October 2011 through March 2016 (applicable months only) follows:

Fecal coliform bacteria (DMR = 52)

Value	Limit (col/100 mL)	Range (col/100 mL)	Mean (col/100 mL)
Monthly Average	15	0 – 2	1
Daily Maximum	50	0 – 32	<5

This permitting action is carrying forward the minimum monitoring frequency requirement for fecal coliform bacteria of three times per week (3/week).

- h. Total Residual Chlorine (TRC): The previous permitting action established a daily maximum water quality-based concentration limit of 0.13 mg/L and a monthly average concentration of 0.09 mg/L as well as a minimum monitoring frequency requirement of once per day at all times during the year. This permitting action is carrying forward the monitoring frequency of 1/Day. The Department specifies TRC limitations in order 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 either water quality-based or BPT-based limits. End-of-pipe acute and chronic water quality-based concentration thresholds may be calculated as follows:

	Criterion	Dilution Factors	Calculated Threshold
Acute	0.013 mg/L	10.2:1	0.13 mg/L
Chronic	0.0075 mg/L	11.9:1	0.09 mg/L

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

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. This permitting action is carrying forward the water quality-based concentration limits of 0.13 mg/L and 0.09 mg/L as they are more stringent than the BPT-based threshold of 1.0 mg/L.

A summary of TRC data as reported on the monthly DMRs (n = 52) for the period of October 1, 2011 – March 1, 2016 is as follows:

TRC

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Daily Maximum	0.13	0.02 – 0.10	0.05
Monthly Average	0.09	0.01 – 0.03	0.02

- i. **pH:** The previous permitting action established a technology based pH range limitation of 6.0 – 9.0 standard units pursuant to 06-096 CMR 525(3)(III)(c), which is being carried forward in this permitting action. A review of the DMR data for the period of October 1, 2011 – March 1, 2016 (n = 52) indicates the pH range was 6.0 – 7.5 standard units. Due to the compliance record for this parameter, and in accordance with Department guidance, this permitting action is reducing the monitoring frequency from 1/Day to 5/Week.
- j. **Dissolved oxygen (DO)** – The previous permitting action established a seasonal water quality based (June 1st – October 15th) dissolved oxygen limitation of greater than or equal to 8 mg/L as a minimum weekly average limitation.

A review of the monthly DMR data for the period October 2011 – October 2015 indicates the permittee has been in compliance with said limit(s) 100% of the time as values have been reported as follows:

Dissolved oxygen (DMRs=12)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Weekly Average	8.0	8.4 – 11.0	9

This permitting action is eliminating the seasonal water quality based dissolved oxygen limit due to new information that suggests that effluent DO levels from the permittee are not causing or contributing to DO non-attainment in the Mousam River estuary. Please see the Nitrogen section in this Fact Sheet for more information.

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

- k. Ammonia – The previous permitting action established seasonal (June – October) water quality based mass and concentration limits for ammonia based on recommendations in the Department’s 2004 Waste Load Allocation (WLA) report. The report recommended imposition of the concentration limit and the mass limit was derived based on the 1.31 MGD monthly average dry-weather flow design capacity of the biological (secondary) treatment component of the wastewater treatment facility. The calculation is as follows:

$$(1.31 \text{ MGD})(8.34 \text{ lbs./gal})(7 \text{ mg/l}) = 76 \text{ lbs./day}$$

A review of the monthly DMR data for the period October 2011 – October 2015 indicates the permittee has been in compliance with said limit(s) 100% of the time as values have been reported as follows:

Ammonia (DMRs=21)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Daily Maximum	7.0	0.4 – 3.6	2

Ammonia (DMRs=21)

Value	Limit (lbs./day)	Range (lbs./day)	Mean (lbs./day)
Monthly Average	76	3.3 – 25.5	13

KSD is discharging an average of 18% of the monthly average mass limit (76 lbs.) and approximately 32% of the daily maximum concentration limit (7.0 mg/L) that was established based on the Department’s 2004 WLA report. This permitting action is eliminating both ammonia limits due to new information that suggests ammonia from the permittee is not causing or contributing to DO non-attainment in the Mousam River estuary. It should be noted that analytical chemistry analysis performed during Surveillance or Screening level testing includes Ammonia. Please see the Nitrogen section in this Fact Sheet for more information.

Whole Effluent Toxicity, Priority Pollutant, and Analytical Chemistry Testing

38 M.R.S. § 414-A and 38 M.R.S. § 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. 06-096 CMR 530 sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and narrative and numeric water quality criteria are met. 06-096 CMR 584 sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

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

WET, priority pollutant and analytical chemistry testing, as required by 06-096 CMR 530, is included in this permit in order to characterize the effluent. 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 the mysid shrimp (*Americamysis bahia*) and the sea urchin (*Arbacia punctulata*). Chemical-specific monitoring 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. Priority pollutant testing refers to the analysis for levels of priority pollutants listed under “Priority Pollutants” on the form included as Attachment C of the permit. Analytical chemistry refers to those pollutants listed under “Analytical Chemistry” on the form included as Attachment C of the permit.

06-096 CMR 530(2)(A) specifies the dischargers subject to the rule as:

All licensed dischargers of industrial process wastewater or domestic wastes discharging to surface waters of the State must meet the testing requirements of this section. Dischargers of other types of wastewater are subject to this subsection when and if the Department determines that toxicity of effluents may have reasonable potential to cause or contribute to exceedences of narrative or numerical water quality criteria.

KSD discharges domestic (sanitary) wastewater to surface waters and is therefore subject to the testing requirements of the toxics rule.

06-096 CMR 530(2)(B) categorizes dischargers subject to the toxics rule into one of four levels (Levels I through IV).

The four categories for dischargers are as follows:

Level I	Chronic dilution factor of <20:1
Level II	Chronic dilution factor of $\geq 20:1$ but <100:1.
Level III	Chronic dilution factor $\geq 100:1$ but <500:1 or >500:1 and $Q \geq 1.0$ MGD
Level IV	Chronic dilution factor >500:1 and $Q \leq 1.0$ MGD

Based on the criteria, the permittee’s facility is considered a Level I discharger as the chronic dilution of the receiving water is < 20:1. 06-096 CMR 530(2)(D) specifies routine WET, priority pollutant, and analytical chemistry test schedules for Level I dischargers as follows.

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

Surveillance level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
I	2 per year	Not Required	4 per year

Screening level testing

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

This permit 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.

1. Whole Effluent Toxicity (WET) Evaluation: 06-096 CMR 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.

On March 9, 2016, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department for KSD in accordance with the statistical approach outlined above. The 3/9/16 statistical evaluation indicates that one test result (12/3/12) demonstrated a reasonable potential to exceed the chronic ambient water quality threshold of 8.4% for the sea urchin. See **Attachment E** of this Fact Sheet for a summary of the WET test results.

As a result, this permit is carrying forward the chronic limit of 8.4% as well as the routine surveillance level monitoring frequency of 2/Year. This permit is also carrying forward the 1/Year reporting condition for Surveillance level acute NOEL testing on the mysid shrimp as established in the November 4, 2013 minor revision.

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

m. Analytical Chemistry & Priority Pollutant Testing Evaluation:

06-096 CMR 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 limited information on the background levels of metals in the water column in the Mousam River estuary in the vicinity of the permittee's outfall. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.

06-096 CMR 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...Notwithstanding the above, for the purpose of calculating waste discharge license limits for toxic substances, the department may use any unallocated assimilative capacity that the Department has set aside for future growth if the use of that unallocated assimilative capacity would avoid an exceedence of applicable ambient water quality criteria or a determination by the Department of a reasonable potential to exceed applicable water quality criteria.”

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

Given that the total assimilative quantity is at full capacity, and that KSD is the only discharger in this segment of the Mousam River, the reserve of 15% is not being withheld.

On May 17, 2016, the Department conducted a statistical evaluation of the most recent 60 months of chemical-specific test results on file with the Department. The evaluation indicated that the discharge exceeded the chronic and acute AWQC for cyanide (as amenable) on three test dates in 2015 (8/5/15, 9/10/15, and 9/24/15). See **Attachment F** of this Fact Sheet for test dates and results for the pollutants of concern.

06-096 CMR 530(3)(D) states:

Where the need for effluent limits has been determined, limits derived from acute water quality criteria must be expressed as daily maximum values. Limits derived from chronic or human health criteria must be expressed as monthly average values.

The permittee initiated a Toxicity Reduction Evaluation (TRE) in regards to the August 5, 2015 cyanide results. In a letter dated November 2, 2015, KSD presented their TRE plan to investigate the elevated cyanide results. KSD followed up with a summary letter dated December 4, 2015. See **Attachment G** of this Fact Sheet for a copy of the 11/2/15 and 12/4/15 letters.

06-096 CMR 530(3)(C) states:

When considering the need for license limits, the Department may exclude from evaluations tests in a series done for an individual pollutant or WET test during five years only if the discharger satisfactorily demonstrates through implementation of a TRE pursuant to this subsection that the cause(s) for a high result have been identified and corrected. Additionally, test subsequent to the high test(s) must not show reasonable potential for exceedance of water quality criteria.

KSD has stated that they believe that they have discovered the underlying cause for the elevated cyanide results. Subsequently, there have been two data sets (October 8, 2015 and November 9, 2015) that have shown no reasonable potential to exceed AWQC for cyanide. Therefore, the Department is not establishing a limit for cyanide at this time.

- n. Mercury: Pursuant to 38 M.R.S. § 420 and 38 M.R.S. § 413 and 06-096 CMR 519, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W002585-46-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 15.1 nanograms per liter (ng/L) and 22.7 ng/L, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury.

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

38 M.R.S. § 420(1-B)(B)(1) provides that a facility is not in violation of the AWQC for mercury if the facility is in compliance with an interim discharge limit established by the Department. A review of the Department’s database for the period February 2009 through November 2015 is as follows:

Mercury (n = 18)

Value	Limit (ng/L)	Range (ng/L)	Mean (ng/L)
Monthly Average	15.1	1.41 – 16.80	4.6
Daily Maximum	22.7		

On February 6, 2012, the Department issued a minor revision to the September 12, 2011 permit thereby revising the minimum monitoring frequency requirement from four times per year to once per year pursuant to 38 M.R.S. § 420(1-B)(F). This minimum monitoring frequency is being carried forward in this permitting action.

- o. Nitrogen: The USEPA requested the Department evaluate the reasonable potential for the discharge of total nitrogen to cause or contribute to non-attainment of applicable water quality standards in marine waters, namely DO and marine life support.

Three distinct numeric data sets are available for use in a reasonable potential calculation for KSD. The most recent are from 2013 and 2015. A third data set is from 1995. Unfortunately, even if combined, the sample size is small (n<10). The Department does not believe that the available numerical data is a large enough sample to support a representative and defensible reasonable potential analysis at this time.

The Department does have limited biological indicator data that suggests elevated nitrogen concentrations at estuary locations downstream/seaward of the discharge point and marginal DO non-attainment. Previous attempts to assess the source of DO non-attainment did not focus on nutrient enrichment and resulted in permitting limits for ammonia, TSS, and a requirement for DO addition.

Eelgrass

Three known surveys have been completed within the Mousam River estuary to document presence/absence of eelgrass. The first survey occurred in the 1970’s by Timson of the Maine Geological Survey, and the second (1995) and third (2010) by the Maine Department of Marine Resources (DMR). The Timson survey extended upstream as far as approximately 0.4 km below the discharge point, and at that upper extent delineated fresh/brackish marsh and fluvial channel at the transition of freshwater to estuarine zones. Neither DMR survey identified the presence of eelgrass within the Mousam River, and although it is not known if these surveys extended as far upstream as the Kennebec discharge point, it is unlikely that any eelgrass would exist in proximity to the discharge point due to the low salinity of the ambient environment.

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

DO

An unattended sonde was deployed 1.1 miles below the discharge point for a period of eight days during July-August 2013, and set to log at 15 minute intervals. These data indicate marginal dissolved oxygen non-attainment (below 85% saturation) that appeared both associated with a location upstream of the deployment site as well as the light/dark cycle, indicating the influence of productivity on the dissolved oxygen signal. Dissolved oxygen values additionally demonstrated diel swings indicative of nutrient enrichment, as explained by the Department's Division of Environmental Assessment (DEA),

“The DO signal we have observed suggests nutrient enrichment and associated productivity, with fairly sharp/brief DO non-attainment excursions in the early morning associated with plant respiration. A productivity dominated DO signal is characterized by early morning DO sags followed by progressively elevated daytime DO peaks in excess of 100% saturation. This signal is driven by the net photosynthetic (plant-related) DO production during daylight hours and net respiration during non-daylight hours. This type of signal is not uncommon in estuaries, which are generally considered to be productive systems.”

Chlorophyll *a*

2013 chlorophyll *a* concentrations from two samples collected 1.1 miles downstream of the discharge point demonstrate comparable values as at the Head of Tide location, though it should be noted that these samples were not collected during a low flow event. No chlorophyll *a* data are available from 2015.

As stated earlier, previous attempts to resolve DO-related issues in the receiving water (derived from the 2004 WLA) by the Department were not focused on nutrient enrichment. As such, limited numeric data (effluent, ambient and downstream of the outfall) is available.

However, the Department believes that the limited numerical data along with the biological data does indicate that nutrient enrichment is occurring in the vicinity of the Kennebunk discharge.

DEA has expressed the opinion that some nutrient enrichment/increased productivity may be inherent in upper estuary systems and is in the process of assessing upper estuary conditions in other similar systems that do not have discharges associated with them as a control.

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

Based on the need for additional information regarding the receiving water body as well as the effluent, the Department has established a seasonal, effluent monitoring requirement for total nitrogen (TKN and NO_3+NO_2) so that it may accurately characterize KSD's contribution to the receiving water. The facility is aware that the Department will be collecting data in the summer of 2017 to further our understanding of the receiving water (ambient as well as downstream) and their contribution to it. The permittee is also aware that they must operate their facility to optimize nitrogen removal to the best of their ability.

The Department will review the results from these testing regimes and re-assess the overall condition of the lower Mousam River and the relative influence of the KSD discharge. The Department reserves the right to reopen the permit to establish necessary limits as stated in permit Special Condition L. *Reopening of Permit for Modifications*, "the Department may, at any time and with notice to the permittee, modify this permit to: (include effluent limitations necessary to control specific pollutants..."

- p. Transported Wastes: The previous permitting action authorized the permittee to receive and introduce up to 6,000 gpd of septage from local septage haulers into the wastewater treatment process or solids handling stream. *Standards For The Addition of Transported Wastes to Wastewater Treatment Facilities*, CMR 555 (last amended March 9, 2009), limits the quantity of transported wastes received at a facility to 1% of the design capacity of the treatment facility if the facility utilizes a side stream or storage method of introduction into the influent flow, or 0.5% of the design capacity of the facility if the facility does not utilize the side stream or storage method of introduction into the influent flow. In their application for permit renewal, KSD requested the Department increase the daily quantity of septage it is authorized to receive and treat to 13,100 gallons per day. With a design capacity of 1.31 MGD, 13,100 gpd represents 1% of said capacity.

The Department has determined that under normal operating conditions, the receipt and treatment of 13,100 gpd of transported wastes to the facility will not cause or contribute to upset conditions of the treatment process.

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 standards for Class SB classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the *York County Coast Star* newspaper on or about February 11, 2016. 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 must 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

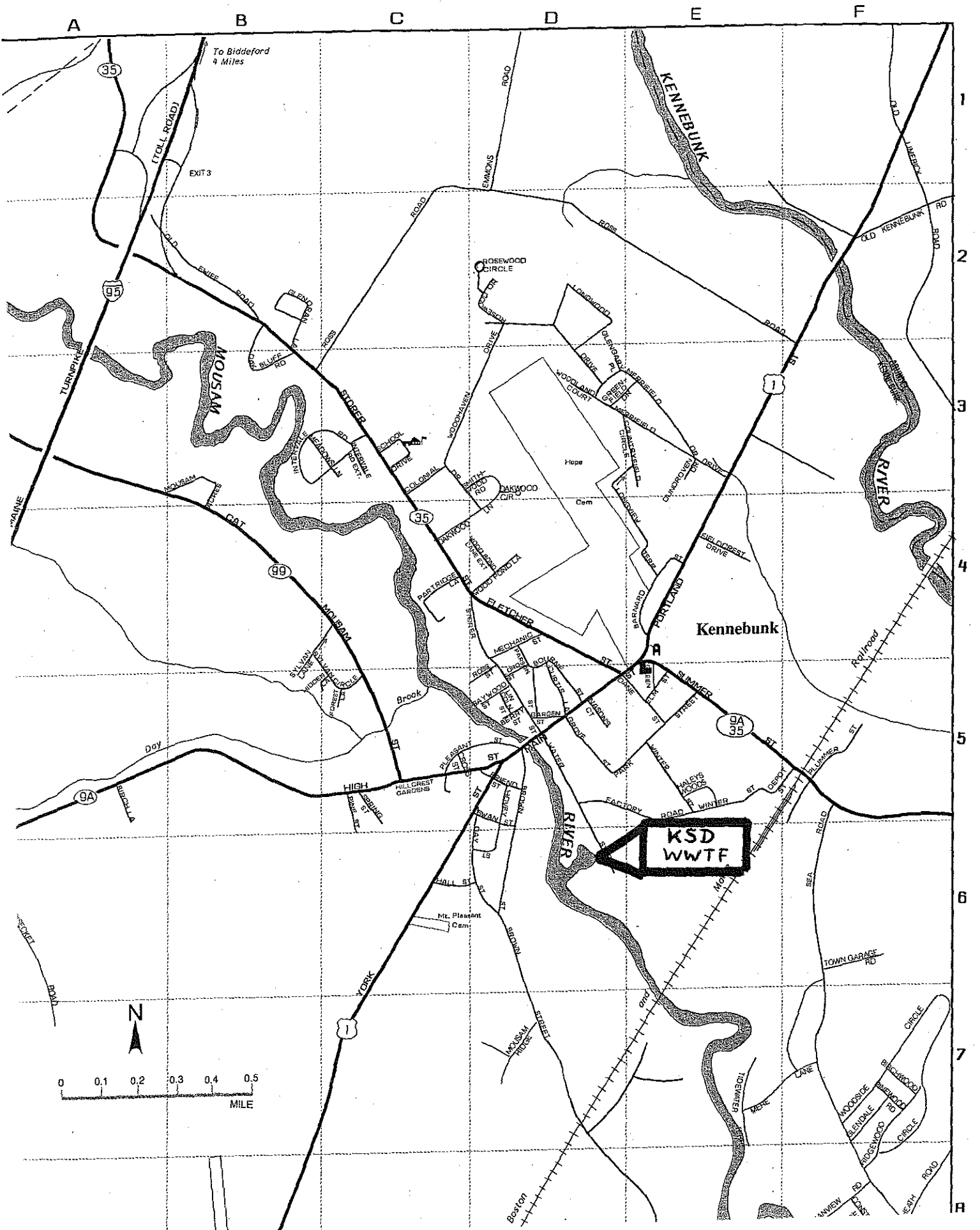
Additional information concerning this permitting action may be obtained from, and written comments sent to:

Cindy L. Dionne
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 557-5950
e-mail: Cindy.L.Dionne@maine.gov

10. RESPONSE TO COMMENTS

Reserved until the end of the formal 30-day public comment period.

ATTACHMENT A

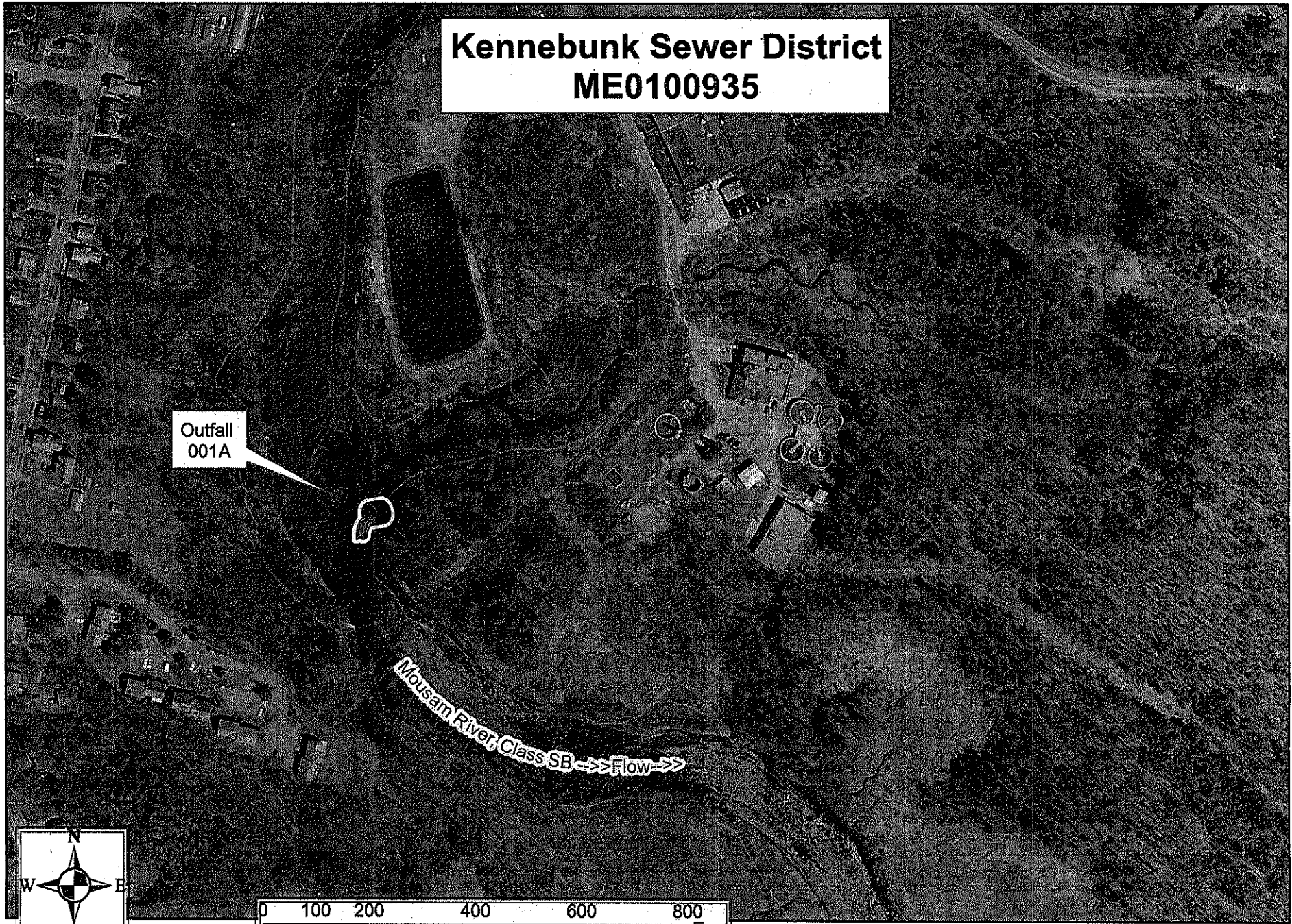


Kennebunk Sewer District ME0100935

Outfall
001A



Mousam River, Class SB → Flow →

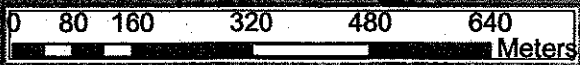


**Kennebunk
POTW
Location**

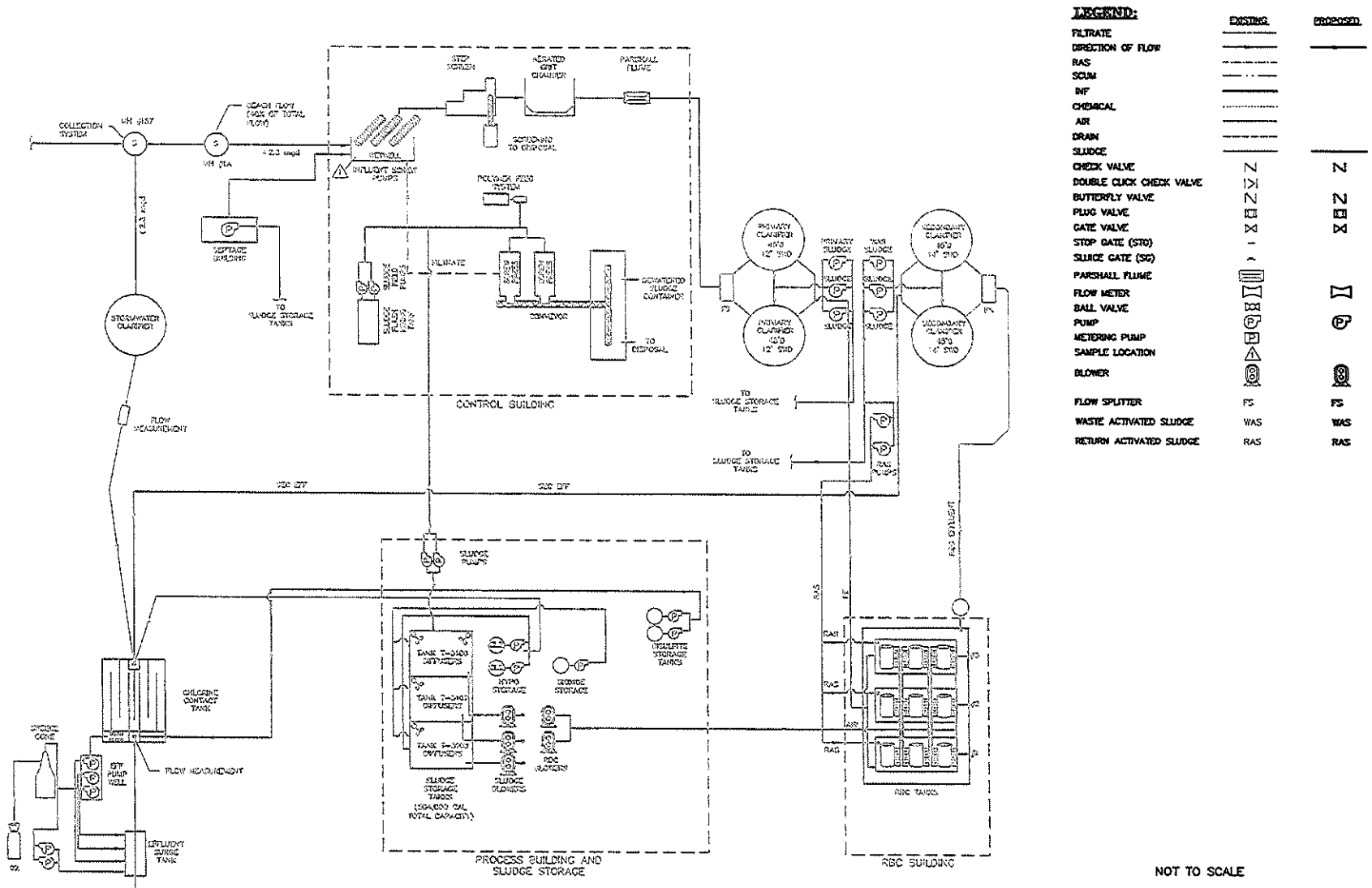
**Kennebunk
Outfall
Location
001A**

Mousam River Class SB

**Kennebunk
Outfall Proposed
Location
001B**



ATTACHMENT B



LEGEND:

	EXISTING	PROPOSED
FLTRATE	---	---
DIRECTION OF FLOW	---	---
RAS	---	---
SCUM	---	---
INF	---	---
CHEMICAL	---	---
AIR	---	---
DRAIN	---	---
SLUDGE	---	---
CHECK VALVE	Z	Z
DOUBLE CLICK CHECK VALVE	Z Z	Z Z
BUTTERFLY VALVE	⊗	⊗
PLUG VALVE	⊕	⊕
GATE VALVE	⊗	⊗
STOP GATE (STG)	⊗	⊗
SLUDGE GATE (SG)	⊗	⊗
PARSHALL FLUME	⊗	⊗
FLOW METER	⊗	⊗
BALL VALVE	⊗	⊗
PUMP	⊗	⊗
METERING PUMP	⊗	⊗
SAMPLE LOCATION	⊗	⊗
BLOWER	⊗	⊗
FLOW SPLITTER	⊗	⊗
WASTE ACTIVATED SLUDGE	WAS	WAS
RETURN ACTIVATED SLUDGE	RAS	RAS

NOT TO SCALE

DATE 01/29/15	UNDERWOOD engineers	PROCESS FLOW SCHEMATIC WASTEWATER TREATMENT FACILITY KENNEBUNK SEWER DISTRICT KENNEBUNK, MAINE	FIG. 3
PROJECT 1776			

ATTACHMENT C

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

MEPDES# _____ Facility Name _____

Since the effective date of your permit, have there been;		NO	YES Describe in comments section
1	Increases in the number, types, and flows of industrial, commercial, or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic?	<input type="checkbox"/>	<input type="checkbox"/>
2	Changes in the condition or operations of the facility that may increase the toxicity of the discharge?	<input type="checkbox"/>	<input type="checkbox"/>
3	Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge?	<input type="checkbox"/>	<input type="checkbox"/>
4	Increases in the type or volume of hauled wastes accepted by the facility?	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS:

Name (printed): _____

Signature: _____ Date: _____

This document must be signed by the permittee or their legal representative.

This form may be used to meet the requirements of Chapter 530.2(D)(4). This Chapter requires all dischargers having waived or reduced toxic testing to file a statement with the Department describing changes to the waste being contributed to their system as outlined above. As an alternative, the discharger may submit a signed letter containing the same information.

Scheduled Toxicity Testing for the next calendar year

Test Conducted	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
WET Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Priority Pollutant Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytical Chemistry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other toxic parameters ¹	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please place an "X" in each of the boxes that apply to when you will be conducting any one of the three test types during the next calendar year.

¹ This only applies to parameters where testing is required at a rate less frequently than quarterly.

ATTACHMENT D

NOTICE OF EMERGENCY RULE-MAKING

AGENCY: Department of Marine Resources
STATUTORY AUTHORITY: 12 M.R.S.A. §§6172, 6192, 6193 & 6194
Struck text is being removed, and underlined text is being added

BASIS STATEMENT

The Commissioner of the Maine Department of Marine Resources amends the emergency DMR Regulation 95.10 X, Closed Area No. 7, Little River and Mousam River (Wells and Kennebunk), amended on April 20, 2007. This amendment changes the title from Little River and Mousam River to Little River to Cape Arundel, and moves the Kennebunk River from Area No. 8 and places it in this rule. This amendment does not make any changes in classifications; it is an administrative change in title only. As authorized by 12 M.R.S.A. §§6172, 6192, 6193 & 6194 the Commissioner of Marine Resources adopts emergency amendments to Chapter 95.10(X).

RULE TITLE AND SUBJECT: DMR Regulation 95.10 X, Closed Area No. 7, Little River and Mousam River (Wells and Kennebunk), amended April 20, 2007, is amended as follows:

TITLE & TEXT OF RULE: DMR Chapter Regulation 95.10(X), Closed Area No. 7, Little River and Mousam River to Cape Arundel (Wells, Kennebunk and Kennebunkport)

Effective immediately, because of pollution, it shall be unlawful to dig, take or possess any clams, quahogs, oysters or mussels taken from the shores, flats and waters of the Little River (Wells), the Mousam River (Kennebunk) and the Kennebunk River (Kennebunk and Kennebunkport), and the coastal vicinity: inside and shoreward of a line beginning at the easternmost tip of the jetties at the mouth of the Webhannet River (Wells), then running northeast to Fishing Rock (Kennebunk), then running ~~northwest~~ east to the south tip of ~~Oaks Neck (Kennebunk)~~ Cape Arundel (Kennebunkport).

EFFECTIVE DATE: May 27, 2009

EFFECTIVE TIME: 12:25 PM

AGENCY CONTACT PERSON: Amy M. Fitzpatrick, Department of Marine Resources,
194 McKown Point Road, W. Boothbay Harbor, Maine 04575
http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm
EMAIL: Amy.Fitzpatrick@maine.gov



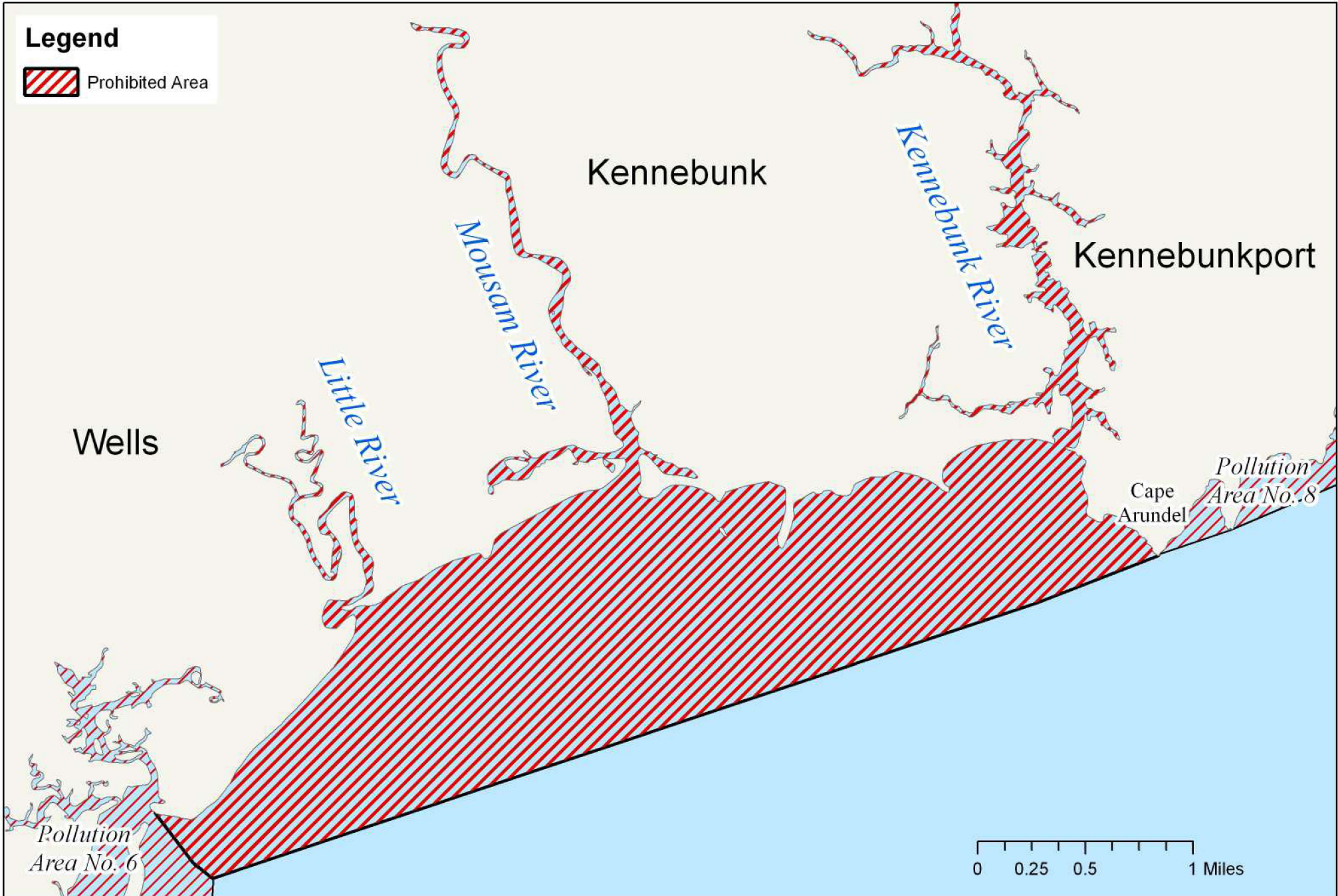
Maine Department of Marine Resources

Pollution Area No. 7



05.27.09

Little River to Cape Arundel (Wells, Kennebunk, and Kennebunkport)



ATTACHMENT E

FACILITY WET EVALUATION REPORT



Facility: KENNEBUNK **Permit Number:** ME0100935 **Report Date:** 5/17/2016
Receiving Water: MOUSAM RIVER **Rapidmix:** Y
Dilution Factors: 1/4 Acute: N/A Acute: 10.227 Chronic: 11.8558
Effluent Limits: Acute (%): 9.778 Chronic (%): 8.435 **Date range for Evaluation: From** 17/May/2011 **To:** 17/May/2016

Test Type: A_NOEL

Test Species: MYSID SHRIMP	Test Date	Result (%)	Status
	09/12/2011	57.100	OK
	02/06/2012	100.000	OK
	12/03/2012	100.000	OK
	09/09/2013	100.000	OK
	03/03/2014	100.000	OK
	11/03/2014	50.000	OK
	02/02/2015	100.000	OK
	05/11/2015	100.000	OK
	08/05/2015	100.000	OK
	11/09/2015	100.000	OK

Species Summary:

Test Number: 10 **RP:** 1.200 **Min Result (%):** 50.000 **RP factor (%):** 41.667 **Status:** OK

Test Type: C_NOEL

Test Species: SEA URCHIN	Test Date	Result (%)	Status
	09/12/2011	100.000	OK
	02/06/2012	100.000	OK
	06/11/2012	100.000	OK
	12/03/2012	11.900	RP
	09/09/2013	50.000	OK
	03/03/2014	50.000	OK
	06/02/2014	100.000	OK
	11/03/2014	100.000	OK
	02/02/2015	25.000	OK
	05/11/2015	100.000	OK
	08/05/2015	50.000	OK
	11/09/2015	25.000	OK

ATTACHMENT F

Data Date Range: 18/Mar/2011 - 18/Mar/2016

Showing only those values not reported as a less than result

Facility name: **KENNEBUNK**Permit Number: **ME0100935****Parameter:** ALUMINUM**Test date** **Result (ug/l)** **Lsthan**

05/09/2011	27.000	N
09/12/2011	30.000	N
02/06/2012	61.000	N

Parameter: AMMONIA**Test date** **Result (ug/l)** **Lsthan**

05/09/2011	6000000.000	N
07/12/2011	3300.000	N
08/02/2011	2300.000	N
02/06/2012	5000.000	N
12/03/2012	2200.000	N
06/04/2013	420.000	N
07/02/2013	3500.000	N
08/06/2013	3100.000	N
09/09/2013	860.000	N
10/08/2013	860.000	N
03/03/2014	2400.000	N
06/02/2014	3000.000	N
07/15/2014	3500.000	N
08/20/2014	2700.000	N
09/09/2014	1600.000	N
10/07/2014	2600.000	N
11/03/2014	1700.000	N
05/11/2015	4.100	N
06/02/2015	2900.000	N
07/08/2015	3400.000	N
08/05/2015	3300.000	N
09/02/2015	2000.000	N
10/07/2015	2000.000	N
11/09/2015	1500.000	N

Parameter: ARSENIC**Test date** **Result (ug/l)** **Lsthan**

09/09/2013	2.900	N
03/03/2014	1.300	N
06/02/2014	2.000	N
11/03/2014	2.500	N
05/11/2015	1.700	N
08/05/2015	3.000	N
11/09/2015	3.300	N

Parameter: COPPER**Test date** **Result (ug/l)** **Lsthan**

05/09/2011	7.200	N
07/12/2011	16.000	N
08/02/2011	8.700	N
09/12/2011	13.000	N
02/06/2012	20.000	N
12/03/2012	10.000	N
09/09/2013	15.800	N
03/03/2014	17.900	N

Data Date Range: 18/Mar/2011 - 18/Mar/2016

Showing only those values not reported as a less than result

Facility name: **KENNEBUNK**Permit Number: **ME0100935**

Parameter:	Test date	Result (ug/l)	Lsthan
CYANIDE	06/02/2014	15.900	N
	11/03/2014	11.500	N
	05/11/2015	13.300	N
	08/05/2015	10.100	N
	11/09/2015	15.400	N
CYANIDE AS AMENABLE	05/09/2011	20.000	N
	08/02/2011	40.000	N
	08/05/2015	40.000	N
	09/10/2015	15.000	N
	09/24/2015	31.000	N
	LEAD	08/05/2015	39.000
09/10/2015		15.000	N
09/24/2015		31.000	N
MERCURY	09/09/2013	0.270	N
	03/03/2014	0.272	N
	06/02/2014	0.284	N
	11/03/2014	0.719	N
	05/11/2015	0.215	N
	08/05/2015	0.243	N
	11/09/2015	0.305	N
	05/09/2011	0.002	N
	08/02/2011	0.004	N
NICKEL	11/07/2011	0.004	N
	02/06/2012	0.003	N
	04/02/2013	0.003	N
	07/14/2014	0.003	N
	02/03/2015	0.001	N
	11/10/2015	0.005	N
	09/09/2013	2.850	N
	03/03/2014	2.130	N
	06/02/2014	2.200	N
	11/03/2014	1.620	N
SALINITY	05/11/2015	1.890	N
	08/05/2015	2.220	N
	11/09/2015	2.210	N
	05/09/2011	28.000	N
	09/12/2011	25.000	N
02/06/2012	27.000	N	
12/03/2012	400.000	N	

Data Date Range: 18/Mar/2011 - 18/Mar/2016

Showing only those values not reported as a less than result

Facility name: **KENNEBUNK**Permit Number: **ME0100935**

Parameter:	TOC	08/05/2015	590.000	N
		Test date	Result (ug/l)	Lsthan
		05/09/2011	11000.000	N
		09/12/2011	13000.000	N
		02/06/2012	12000.000	N
		12/03/2012	9600.000	N
		09/09/2013	13000.000	N
		03/03/2014	12000.000	N
		06/02/2014	11000.000	N
		11/03/2014	11000.000	N
		05/11/2015	9200.000	N
		08/05/2015	12000.000	N
		11/09/2015	11000.000	N
Parameter:	TSS	Test date	Result (ug/l)	Lsthan
		05/09/2011	5100.000	N
		09/12/2011	8000.000	N
		12/03/2012	2600.000	N
		09/09/2013	5200.000	N
		06/02/2014	5200.000	N
		11/03/2014	6400.000	N
Parameter:	ZINC	Test date	Result (ug/l)	Lsthan
		05/09/2011	43.000	N
		09/12/2011	33.000	N
		02/06/2012	60.000	N
		12/03/2012	26.000	N
		09/09/2013	26.100	N
		03/03/2014	50.200	N
		06/02/2014	40.300	N
		11/03/2014	27.500	N
		05/11/2015	44.500	N
		08/05/2015	30.400	N
		11/09/2015	40.500	N

ATTACHMENT G



**Kennebunk
Sewer
District**

71 Water Street, P.O. Box 648, Kennebunk, ME 04043 Phone: 207.985.4741 Fax: 207.985.4743

November 2, 2015

Mr. Hight:

Cyanide analyses were performed on grab samples collected from the Kennebunk Sewer District (KSD) effluent outfall on August 5th 2015 in conjunction with whole effluent toxicity (WET) testing. Results from these analyses reported that **total and amenable cyanide** concentrations exceeded the acute and chronic effluent discharge limits. The elevated cyanide results have prompted KSD to increase sampling frequency to determine if the exceedence was an isolated incident, as suggested by the Toxics Control Program Reference Manual provided by the Maine Department of Environmental Protection (DEP). The purpose of this memo is to (1) inform the Maine DEP that KSD has begun the initial stages required for a Toxicity Reduction Evaluation (TRE), (2) present and discuss cyanide results since the initial exceedence, and (3) outline future sampling plans.

Initial Exceedence: Sample Collected on 8/5/15

A grab sample was collected in a plastic bottle provided by Katahdin Analytical Services that contained a sodium hydroxide (NaOH) preservative. The sample was refrigerated at 4° C, transported to Katahdin Analytical Services by a courier, and analyzed for total and amenable cyanide using EPA Method 335.4. The **total and amenable cyanide** from these analyses were reported as **39 µg l⁻¹** and **40 µg l⁻¹**, respectively, which exceeded the acute and chronic effluent discharge limits calculated using the effluent flow from the sample collection day (**0.663 MGD**) and dilution factors (**10.2 acute; 11.9 chronic**).

Sample Collected on 9/10/15

A sample was collected from the effluent outfall using the same protocol described in the previous section. The results for **total and amendable cyanide** from this analysis were both **15 µg l⁻¹**, which did not exceed the acute or chronic discharge limits given the effluent flow rate (**0.530 MGD**) on the sample collection day. However, more analyses were performed in accordance with an EPA recommendation to continue sampling for two months following the initial exceedence.

Sample Collection on 9/24/15

Influent, secondary effluent prior to chlorination and effluent from the KSD outfall were collected during this sampling event. Sampling influent enabled KSD to determine if cyanide was entering the plant from the collection system or being generated during the treatment process. Analyzing secondary wastewater before and after disinfection provided insight regarding possible cyanide formation due to chlorination. Samples were collected from each location with and without preservative to assess if the NaOH is producing artificially high results, as it has shown to be a source of interference when using method 335.4 (Giudice et al., 2011).

A clear correlation between cyanide concentration, chlorination and NaOH preservative could not be established (**Table 1**). However, total and amenable cyanide was not detected in the influent, suggesting that cyanide is generated during the treatment process. This phenomena has been reported elsewhere (Zheng et al., 2004a), and has been linked to the concentration of nitrite and extent of nitrification taking place during secondary treatment (Zheng et al., 2004b).

Table 1. Results from analyses performed on 9/24/15 suggest that cyanide formation is not clearly linked to interference from NaOH preservatives or chlorination processes. However, cyanide in the influent was below the detection limit, which supports the hypothesis that it is generated somewhere in the treatment process.

Analysis	Influent, $\mu\text{g l}^{-1}$	Secondary before Chlorination, $\mu\text{g l}^{-1}$	Effluent Outfall, $\mu\text{g l}^{-1}$
Total CN, Preserved	ND(5.0)*	27	31
Total CN, Unpreserved	ND(5.0)	39	30
Amenable CN, Preserved	ND(5.0)	27	31
Amenable CN, Unpreserved	ND(5.0)	35	25

Sample Collection on 10/8/15

The next round of cyanide testing was performed on influent, primary effluent, secondary effluent before chlorination and effluent outfall samples with and without preservative. The objective of this sampling regime was to (1) identify where cyanide is being formed in the process train and (2) reaffirm that NaOH preservative does not produce artificially high results. Results from these analyses reported no detectable cyanide anywhere in the facility using a practical quantitation limit (PQL) of $5.0 \mu\text{g l}^{-1}$ (Table 2). More samples are scheduled for analysis in November 2015 to further investigate this phenomenon.

Table 2. No cyanide was detected on any samples collected throughout the treatment process on 10/8/15. More sampling events are schedule in November to further investigate the situation.

Analysis	Influent, $\mu\text{g l}^{-1}$	Primary Effluent, $\mu\text{g l}^{-1}$	Secondary before Chlorination, $\mu\text{g l}^{-1}$	Effluent Outfall, $\mu\text{g l}^{-1}$
Total CN, Preserved	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Total CN, Unpreserved	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Amenable CN, Preserved	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Amenable CN, Unpreserved	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)

Possible explanation for cyanide exceedences

KSD has developed a systematic approach to better understand the likely pathway of cyanide production in recent samples. The aim of this approach is to determine if cyanide is generated during the treatment process or if it is an artifact of sample analysis. The follow sections describe these modes of cyanide production and how we intend to determine the likely source.

Cyanide production and nitrite accumulation

Research by Zheng et al. (2004b) noted that cyanide formation can occur through a nitrosation, which is a reaction between nitrite and organic compounds in the wastewater. This would explain the absence of cyanide in the influent, as the predominant form of nitrogen in raw wastewater is ammonia. Ammonia is then converted to nitrite and nitrate during secondary treatment due to nitrification, which would provide substrate for nitrosation reactions that can facilitate cyanide formation. However, no strong relationship exists ($r^2 = 0.22$) between nitrite concentration and the amount of cyanide detected in the wastewater (Figure 1). These data suggest that cyanide detected in solution may be an artifact of the analysis.

* ND(5.0) means that cyanide was not detected above the practical quantitation level of $5.0 \mu\text{g l}^{-1}$.

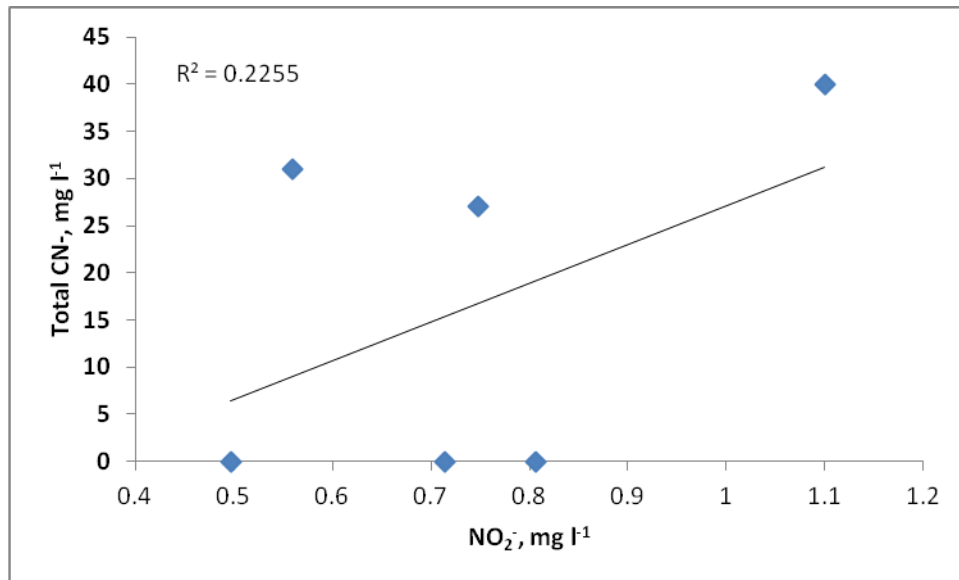


Figure 1. Comparison between total cyanide and nitrite concentration in wastewater samples. The weak correlation coefficient does not establish a clear relationship between nitrosation and cyanide production.

Cyanide production during sample distillation

Several authors have noted that cyanide analyses performed on wastewater effluents are often inaccurate due to analytical interferences (Zheng et al., 2004b; Giudice et al., 2011; American Public Health Association, 2012). Specifically, nitrate and nitrite may form cyanide through reaction with organic compounds during the distillation step of method 335.4 (US EPA, 1993). This would explain the detection of cyanide in KSD effluent, as conversion of ammonia to nitrite and nitrate via nitrification occurred during secondary treatment. Similarly, the lack of cyanide detected in the KSD influent is likely due to the low concentration of nitrite and nitrate in solution. However, this does not explain the results from October 8th, as no cyanide was detectable in any samples, despite consistent nitrite and nitrate concentrations of the effluent. Future samples will have sulfamic acid added during sample collection to eliminate interferences caused by nitrite and nitrate.

Future Sampling

Additional samples will be collected to determine if cyanide is produced during the treatment process or stems from analytical interference. The following sampling protocol will be implemented to make this determination:

1. Samples will be collected at every step of the treatment process to determine if cyanide is generated during the treatment process;
2. Samples will be collected with and without sulfamic acid to assess potential interference caused by nitrite and nitrate;
3. Different analytical procedures for total and amenable cyanide will be performed to establish consistent results irrespective of method.

References

American Public Health Association (2012) Standard Methods for the Examination of Water and Wastewater, 22nd ed.; American Public Health Association: Washington, D.C.; American Water Works Association: Denver, Colorado; Water Environment Federation: Alexandria, Virginia.

Giudice, B. D., Jorgenson, B., & Bryan, M. (2011) Problems Associated with Using Current EPA Approved Total Cyanide Analytical Methods for Determining Municipal Wastewater Treatment Plant NPDES Permit Compliance.

US Environmental Protection Agency (US EPA) Determination of total cyanide by semi-automated colorimetry, version 1.0. 1993.

Zheng, A., Dzombak, D. A., Luthy, R. G., Kavanaugh, M. C., & Deeb, R. A. (2004a). The occurrence of cyanide formation in six full-scale publicly owned treatment works. *Water environment research*, 76(2), 101-112.

Zheng, A., Dzombak, D. A., & Zheng, R. G. (2004b). Effects of nitrosation on the formation of cyanide in publicly owned treatment works secondary effluent. *Water environment research*, 76(3), 197-204.



**Kennebunk
Sewer
District**

71 Water Street, P.O. Box 648, Kennebunk, ME 04043 Phone: 207.985.4741 Fax: 207.985.4743

December 4, 2015

Mr. Hight:

On November 4th 2015, the Kennebunk Sewer District (KSD) presented the Maine Department of Environmental Protection (DEP) with an initial Toxicity Reduction Evaluation (TRE) report detailing our sampling activities in response to **total** and **amenable cyanide** exceedences measured on August 5th 2015. Since providing the initial report, additional analyses were conducted at every step of the treatment process to determine the origin of the cyanide. Samples were collected and stored with preservative, with preservative and sulfamic acid, and without any preservative. The rationale for adding sulfamic acid was to eliminate potential interference from nitrite and nitrate, which has shown to produce artificially high cyanide results. Comparing results between these treatments enabled KSD to determine if the cyanide measured in recent samples was an artifact of the analytical procedure.

The results from the most recent sampling event support the hypothesis that previous cyanide exceedences were caused by nitrite and nitrate interference. Specifically, samples treated with sulfamic acid did not contain any detectable amount of cyanide, which was not consistent amongst treatments (**see table below**). Additionally, the greatest concentration of cyanide detected in samples *without* sulfamic acid occurred following secondary treatment, which is where nitrification processes occur that generate the nitrite and nitrate responsible for the analytical interference.

Analysis	Influent, $\mu\text{g l}^{-1}$	Primary Effluent, $\mu\text{g l}^{-1}$	Secondary before Chlorination, $\mu\text{g l}^{-1}$	Effluent Outfall, $\mu\text{g l}^{-1}$
Total CN, Preserved	ND(5.0)	ND(5.0)	33	14
Amenable CN, Preserved	ND(5.0)	ND(5.0)	33	14
Total CN, Unpreserved	ND(5.0)	15	39	38
Amenable CN, Unpreserved	ND(5.0)	9.7	32	29
Total CN, Preserved, Sulfamic Acid Addition	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Amenable CN, Preserved, Sulfamic Acid Addition	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)

In light of these findings, KSD has modified its cyanide sample collection technique to eliminate this type of interference in the future. We also feel that additional sampling to identify the source of cyanide is no longer necessary given that interference from nitrite and nitrate have been systematically isolated to be the likely source of cyanide detected in previous samples.

Please do not hesitate to contact me by phone (207-502-5725) or via email (pwiley@ksdistrict.org) if you would like to discuss these data further.

Respectfully,

A handwritten signature in black ink, appearing to read "Patrick Wiley". The signature is fluid and cursive, with the first name "Patrick" and last name "Wiley" clearly distinguishable.

Patrick Wiley, Ph.D.
Assistant District Manager