STATE OF MAINE

Department of Environmental Protection

Paul R. LePage
GOVERNOR

Patricia W. Aho
COMMISSIONER

February 4, 2013

Mr. Alan Hitchcock, P.E.
Caribou Utilities District
176 Limestone Street
P.O. Box 879
Caribou, Maine 04736

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100145
Maine Waste Discharge License (WDL) Application #W001001-6D-I-M
Final MEPDES Permit Minor Revision

Dear Mr. Hitchcock:

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

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

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

Sincerely,

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

Enc.
cc: William Sheehan, DEP/NMRO
Sandy Mojica, USEPA

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

DEPARTMENT ORDER

IN THE MATTER OF

CARIBOU UTILITIES DISTRICT	)	MAINE POLLUTANT DISCHARGE
CARIBOU, AROOSTOOK COUNTY	)	ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	)	AND
ME0100145	)	WASTE DISCHARGE LICENSE
W001001-6D-I-M **APPROVAL**	)	**MINOR REVISION**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, §1251, *et seq.*, and Maine law, 38 M.R.S.A., §414-A *et seq.*, and applicable regulations, the Maine Department of Environmental Protection (Department hereinafter) has considered a request by the CARIBOU UTILITIES DISTRICT (CUD/permittee hereinafter), to modify combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100145/Maine Waste Discharge License (WDL) #W001001-6D-G-R (permit hereinafter) issued by the Department on December 12, 2011, for a five-year term. With its supportive data, agency review comments, and other related materials on file, the Department FINDS THE FOLLOWING FACTS:

MODIFICATION REQUEST

The CUD has requested a modification of the December 12, 2011, permit by modifying the whole effluent toxicity (WET) analytical chemistry and priority testing requirements in the fourth and fifth years of the permit to be consistent with revisions to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, adopted on March 21, 2012.

MODIFICATION SUMMARY

This permitting action is carrying forward all the terms and conditions of the December 12, 2011, permit and the February 6, 2012 modification except that this minor revision is;

1. Modifying the timing of the surveillance and screening level testing requirements based on a revision to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, adopted on March 21, 2012. This minor revision is moving the screening level testing requirements from the fifth year of the term of the permit to the fourth year of the term of the permit and moving the last surveillance level testing requirements from the fourth year of the term of the permit to the fifth year of the term of the permit.

MODIFICATION SUMMARY (cont'd)

2. Eliminating the water quality based concentration limits for total aluminum and total copper based on a revision to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* adopted on March 21, 2012. The revision to the rule eliminated the requirement to establish concentration limits for toxic pollutants unless the concentration limits are required by an applicable effluent guideline adopted by the Department. As of the date of this minor revision, the Department has not adopted said guideline(s).

3. Eliminating the daily maximum water quality based mass limitation for total copper given the most current statistical evaluation conducted by the Department in accordance with the methodology in 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* indicates there are no test results for total copper in the most 60-months that exceed of have a reasonable potential to exceed the acute ambient water quality criteria for total copper.

4. Modifying the reporting requirements for total mercury such that concentration test results are now to be reported in nanograms/L (parts per trillion) rather than micrograms/L (parts per billion) as required in the December 18, 2011 permit renewal.

5. Increasing the 1Q10 and 7Q10 flow values for the Aroostook River at Caribou based on a 2012 updated statistical evaluation of historic river flow data from the USGS flow gauge at Washburn. As a result, this minor revision is modifying the acute and chronic dilution factors for the CUD facility accordingly.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated January 18, 2013, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding natural resource, that water quality will be maintained and protected;

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

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

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

4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted request by the CARIBOU UTILITIES DISTRICT to modify combination MEPDES permit #ME0100145/ WDL#W001001-6D-G-R issued by the Department on December 12, 2011, for a five-year term, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. *"Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits"* revised July 1, 2002, copy attached to MEPDES permit #ME0100145/ WDL#W001001-6D-G-R issued by the Department on December 12, 2011.

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

3. All terms and conditions of MEPDES permit #ME0100145/ WDL#W001001-6D-G-R issued by the Department on December 12, 2011, not modified by this permitting action remain in effect and enforceable.

4. This minor revision becomes effective upon the date of signature below and expires at midnight on December 12, 2012. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of the this permit, the terms and conditions of the 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.A. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (effective April 1, 2003)].

DONE AND DATED AT AUGUSTA, MAINE, THIS 4th DAY OF FEBRUARY, 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Michael Kuhns
For Patricia W. Aho, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Filed
FEB 4 2013
State of Maine
Board of Environmental Protection

Date of initial receipt of application January 9, 2013.
Date of application acceptance January 10, 2013.

Date filed with Board of Environmental Protection _____.

This Order prepared by GREGG WOOD, BUREAU OF LAND & WATER QUALITY
ME0100145 2013 1/19/13

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **secondary treated municipal wastewater via Outfall #001A** to the Aroostook River at Caribou. Such discharges shall be limited and monitored by the permittee as specified below[1]:

	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	1.71 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	642 lbs./day *[26]*	856 lbs./day *[26]*	927 lbs./day *[26]*	45 mg/L *[19]*	60 mg/L *[19]*	65 mg/L *[19]*	2/Week *[02/07]*	24-Hour Composite *[24]*
BOD_5 Percent Removal[2] *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS *[00530]*	642 lbs./day *[26]*	856 lbs./day *[26]*	927 lbs./day *[26]*	45 mg/L *[19]*	60 mg/L *[19]*	65 mg/L *[19]*	2/Week *[02/07]*	24-Hour Composite *[24]*
TSS Percent Removal[2] *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	1/Week *[01/07]*	Grab *[GR]*
***E. coli* Bacteria**[3] **(May 15 – Sept. 30)** *[31633]*	---	---	---	142/100 ml[4] *[13]*	---	949/100 ml *[13]*	2/Week *[02/07]*	Grab *[GR]*
Total Residual Chlorine[5] *[50060]*	---	---	---	0.68 mg/L *[19]*	---	1.0 mg/L *[19]*	5/Week *[05/07]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	5/Week *[05/07]*	Grab *[GR]*
Aluminum *[01105]*	6.3 lbs./day *[26]*	---	---	Report ug/L *[28]*	---	---	1/Year *[01/YR]*	24-Hour Composite *[24]*
Copper (Total) *[01042]*	0.75 lbs./day *[26]*	---	---	Report ug/L *[28]*	---	---	1/Year *[01/YR]*	24-Hour Composite *[24]*
Mercury (Total)[6] *[50286]*	---	---	---	18 ng/L *[3M]*	---	28 ng/L *[3M]*	1/Year *[01/YR]*	Grab *[GR]*

Footnotes: See Pages 7 through 10 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

2. **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), the permittee shall be limited and monitored as follows:

WHOLE EFFLUENT TOXICITY (WET) [7]	Daily Maximum	Minimum Frequency	Sample Type
Acute No Observed Effect Level (A-NOEL)			
Water Flea (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	1/2 Years *[01/2Y]*	24-Hour Composite *[24]*
Brook Trout (*Salvelinus fontinalis*) *[TDA6F]*	Report % *[23]*	1/2 Years *[01/2Y]*	24-Hour Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Water Flea (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	1/2 Years *[01/2Y]*	24-Hour Composite *[24]*
Brook Trout (*Salvelinus fontinalis*) *[TBQ6F]*	Report % *[23]*	1/2 Years *[01/2Y]*	24-Hour Composite *[24]*
Analytical Chemistry[8] [10] *[51168]*	Report µg/L *[28]*	1/2 Years *[01/2Y]*	24-Hour Composite/Grab *[24/GR]*

SPECIAL CONDITIONS

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

3. **SCREENING LEVEL TESTING.** During the period 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, the permittee shall be limited and monitored as follows:

WHOLE EFFLUENT TOXICITY (WET) [7]	Daily Maximum	Minimum Frequency	Sample Type
Acute No Observed Effect Level (A-NOEL)			
Water Flea (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Brook Trout (*Salvelinus fontinalis*) *[TDA6F]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Water Flea (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Brook Trout (*Salvelinus fontinalis*) *[TBQ6F]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Analytical Chemistry [8] [10] *[51168]*	Report µg/L *[28]*	1/Quarter *[01/90]*	24-Hour Composite/Grab *[24/GR]*
Priority Pollutant [9] [10] *[50008]*	Report µg/L *[28]*	1/Year *[01/YR]*	24-Hour Composite/Grab *[24/GR]*

SPECIAL CONDITIONS

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

Footnotes:

1. **Sampling** – Sampling and analysis must be conducted in accordance with; a) methods approved in 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services. Samples that are sent to another POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 or laboratory facilities that analyze compliance samples in-house are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended February 13, 2000).

   All analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. See **Attachment A** of the December 12, 2011, permit for a list of the Department's RLs. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the RL achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL or reporting an estimated value ("J" flagged) is not acceptable and will be rejected by the Department. Reporting analytical data and its use in calculations must follow established Department guidelines specified in this permit or in available Department guidance documents.

2. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of BOD_5 and TSS for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "*NODI-9*" on the monthly Discharge Monitoring Report.

3. **Bacteria Limits** – *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to impose year-round bacteria limitations to protect the health, safety and welfare of the public.

4. **Bacteria Reporting** – The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

5. **TRC Monitoring** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. The permittee shall 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** - All mercury sampling required by this permit or required to determine compliance with interim limitations established pursuant to Department rule Chapter 519, shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry. See **Attachment B** of the December 12, 2011, permit for a Department report form for mercury test results.

   The limitation in the monthly average column in table Special Condition A of this permit is defined as the arithmetic mean of all the mercury tests ever conducted for the facility utilizing sampling Methods 1669 and analysis Method 1631E.

7. **Whole effluent toxicity (WET) testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical acute and chronic thresholds of 1.8% and 1.5% respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 56.8:1 and 66.6:1, respectively.

   a. **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), the permittee shall initiate surveillance level WET testing at a minimum frequency of once every two years for the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*) in a different calendar quarter for each test event.

   b. **Screening level testing**- During the period 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, the permittee shall initiate screening level WET testing at a minimum frequency of twice per year. Acute and chronic testing shall be conducted on the water flea and the brook trout. One test shall be conducted during the period of January – June and the other test shall be conducted six months later.

SPECIAL CONDITIONS

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

WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 1.8% and 1.5%, respectively.

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

a. 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 Freshwater Organisms*, 4th ed. EPA 821-R-02-013. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the freshwater chronic method manual).

Results of WET tests shall be reported on the "WET Results Report – Fresh Waters" form included as **Attachment C** of the December 12, 2011, permit each time a WET test is performed. The permittee is required to analyze the effluent for the parameters specified on the "WET and Analytical Chemistry Results – Fresh Waters" form included as **Attachment A** of the December 12, 2011, permit each time a WET test is performed.

8. **Analytical Chemistry** – Refers to a suite of chemicals in **Attachment A** of the December 12, 2011 permit.

   a. **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), the permittee shall conduct surveillance level analytical chemistry testing at a minimum frequency of once every other year (1/2 Years).

   b. **Screening level testing** - During the period 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, the permittee shall conduct screening level analytical chemistry testing at a minimum frequency of four times per year (4/Year) in successive calendar quarters.

SPECIAL CONDITIONS

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

Footnotes:

Analytical chemistry and/or priority pollutant testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department on the form entitled, "Maine Department of Environmental Protection WET and Chemical-Specific Data Report Form" included as **Attachment A** of the December 12, 2011, permit

9. **Priority Pollutant Testing** – Priority pollutant testing refers to a suite of chemicals in **Attachment A** of the December 12, 2011, permit.

   a. **Surveillance level testing** - Priority pollutant testing is not required for this facility pursuant to Department rule Chapter 530, § 2(D)(1).

   b. **Screening level testing** - During the period 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, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year) in any calendar quarter provided the sample is representative of the discharge and any seasonal or other variations in effluent quality.

10. **Analytical chemistry and priority pollutant tests** - Results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health ambient water quality criteria (AWQC) as established in Department rule 06-096 CMR Chapter 584.

    For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **January 18, 2013**

PERMIT NUMBER: **ME0100145**
WASTE DISCHARGE LICENSE: **W001001-6D–I-M**

NAME AND ADDRESS OF APPLICANT:

CARIBOU UTILITIES DISTRICT
P.O. Box 879
176 Limestone Street
Caribou, Maine 04736

COUNTY: **Aroostook**

NAME AND ADDRESS WHERE DISCHARGE(S) OCCUR(S):

363 Grimes Road
Caribou, Maine 04736

RECEIVING WATER/CLASSIFICATION: **Aroostook River/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Alan Hitchcock, P.E.**
General Manager
(207) 496-0911
e-mail: cud@gwi.net

1. MODIFICATION REQUEST

The Caribou Utility District (CUD/permittee hereinafter) has requested a modification of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100145/Maine Waste Discharge License (WDL) #W001001-6D-G-R (permit hereinafter), by modifying the whole effluent toxicity (WET), analytical chemistry and priority testing requirements in the fourth and fifth years of the permit to be consistent with revisions to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, adopted on March 21, 2012.

2. MODIFICATION SUMMARY

This permitting action is carrying forward all the terms and conditions of the December 12, 2011, permit and the February 6, 2012 modification except that this minor revision is;

a. Modifying the timing of the surveillance and screening level testing requirements based on a revision to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, adopted on March 21, 2012. This minor revision is moving the screening level testing requirements from the fifth year of the term of the permit to the fourth year of the term of the permit and moving the last surveillance level testing requirements from the fourth year of the term of the permit to the fifth year of the term of the permit.

b. Eliminating the water quality based concentration limits for total aluminum and total copper based on a revision to 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, adopted on March 21, 2012. The revision to the rule eliminated the requirement to establish concentration limits for toxic pollutants unless required by an applicable effluent guideline adopted by the Department. As of the date of this minor revision, the Department has not adopted said guideline(s).

c. Eliminating the daily maximum water quality based mass limitation for total copper given the most current statistical evaluation conducted by the Department in accordance with the methodology in 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* indicates there are no test results for total copper in the most 60-months that exceed of have a reasonable potential to exceed the acute ambient water quality criteria for total copper.

d. Modifying the reporting requirements for total mercury such that concentration test results are now to be reported in nanograms/L (parts per trillion) rather than micrograms/L (parts per billion) as required in the December 18, 2011 permit renewal.

e. Increasing the 1Q10 and 7Q10 flow values for the Aroostook River at Caribou based on a 2012 updated statistical evaluation by the Department on the historic river flow data from the USGS flow gauge at Washburn. As a result, this minor revision is modifying the acute and chronic dilution factors for the CUD facility accordingly.

3. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Dilution Factors: Dilution factors associated with the monthly average dry weather design criterion for the facility of 1.71 MGD were derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* and were calculated as follows:

Acute: 1Q10 = 147.5 cfs $\Rightarrow \frac{(147.5 \text{ cfs})(0.6464) + 1.71 \text{ MGD}}{1.71 \text{ MGD}} = 57{:}1$

Chronic: 7Q10 = 173.5 cfs $\Rightarrow \frac{(173.5 \text{ cfs})(0.6464) + 1.71 \text{ MGD}}{1.71 \text{ MGD}} = 66{:}1$

Harmonic Mean = 520.5 cfs $\Rightarrow \frac{(520.5 \text{ cfs})(0.6464) + 1.71 \text{ MGD}}{1.71 \text{ MGD}} = 198{:}1$

The Department has determined that the outfall structure associated with the CUD's discharge provides complete and rapid mixing of the effluent with the receiving waters. The critical low flows cited above for the Aroostook River were recalculated by the Department based on a 2012 updated statistical evaluation of historic river flow data from the USGS flow gauge at Washburn.

b. Total Residual Chlorine: The previous permitting action established a monthly average water quality-based concentration limit of 0.73 mg/L, and a daily maximum technology-based concentration limit of 1.0 mg/L, and a minimum monitoring frequency requirement of once per day for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department licensing/permitting actions impose the more stringent of either a water quality-based or BPT based limit. End-of-pipe acute and chronic water quality based concentration thresholds may be calculated as follows:

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	57:1 (A) 66:1 (C)	1.1 mg/L	0.73 mg/L

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. The daily maximum technology-based standard of 1.0 mg/L is equal to the calculated acute water quality-based threshold of 1.0 mg/L and is therefore being carried forward in this permitting action.

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

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

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

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

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

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

Screening level testing – During the period 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 the permittee shall conduct screening level testing as follows:

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

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

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), the permittee shall conduct screening level testing as follows:

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

A review of the data on file with the Department indicates that to date, the permittee has fulfilled the WET and chemical-specific testing requirements of Chapter 530. See **Attachment A** of this Fact Sheet for a summary of the WET test results and **Attachment B** of this Fact Sheet for a summary of the chemical-specific test dates.

Department rule Chapter 530(1)(D)(3)(c) states in part, "*Dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E).*"

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

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

WET evaluation

On 1/11/13, the Department conducted a statistical evaluation on the most recent 60 months of WET data that indicates that the discharge does not exceed or have a reasonable potential (RP) to exceed the acute or chronic critical ambient water quality criteria (AWQC) thresholds (1.8% and 1.5% – mathematical inverse of the acute dilution factor 57:1 and the chronic dilution factor 66:1).

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

Given the absence of exceedences or reasonable potential to exceed critical WET thresholds, the permittee meets the surveillance level monitoring frequency waiver criteria found at Department rule Chapter 530(D)(3)(b). Therefore, this permit is establishing a requirement for the permittee to only conduct screening level testing for both the water flea and the brook trout that shall be conducted in the 12-month period prior to the expiration date of this permit and every five years thereafter.

In accordance with Department rule Chapter 530(2)(D)(4) and Special Condition J, *06-096 CMR 530(2)(D)(4) Statement For Reduced/Waived Toxics Testing* of the December 22, 2011 permit , the permittee must annually submit to the Department a written statement evaluating its current status for each of the conditions listed.

Chemical evaluation

Chapter 530 (promulgated on October 12, 2005) §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 Aroostook River 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.

In a letter dated September 21, 2000, to the Department, the Presque Isle Sewer District (PISD) submitted eight and a half years (1990-1999) of quarterly test results (by season) of the background hardness of Presque Isle Stream in an effort have the Department consider a site specific hardness for hardness dependent metals. The arithmetic mean of the seasonal data points are as follows: Winter (62 mg/L), Spring (34 mg/L), Summer (66 mg/L) and Fall (40 mg/L). The Department took the data submitted by the PISD into consideration and made the determination that for hardness dependent metals, the applicable acute hardness for Presque Isle Stream at the point of discharge is 33 mg/L and the chronic hardness is 40 mg/L, and applicable limits for hardness dependent metals were established in PISD's September 30, 2002, MEPDES permit.

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

The Department has made a best professional judgment that the hardness data for Presque Isle Stream is a conservative assumption for the background hardness in the Aroostook River and is therefore being utilized for establishing limits for hardness dependent metals for dischargers in the Aroostook River watershed. Because only one hardness value can be entered into the Department DETOX program for statistically evaluating chemical specific test results and establishing limitations for pollutant that have a reasonable potential or exceed AWQC, the Department is utilizing a watershed hardness value of 37 mg/L. The value is the arithmetic mean of the acute and chronic hardness values established for PISD's September 30, 2002, MEPDES permit.

Chapter 530 4(E), states "*In allocating assimilative capacity for toxic pollutants, the Department shall hold a portion of the total capacity in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The unallocated reserve must be reviewed and restored as necessary at intervals of not more than five years. The water quality reserve must be not less than 15% of the total assimilative quantity.*" Therefore, the Department reserved 15% of the applicable water quality criteria in the calculations of the December 21, 2011 permitting action.

In May 2012, Maine law 38 M.R.S.A. §464, ¶¶ J was enacted which reads as follows, *"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 exceedance of applicable ambient water quality criteria or a determination by the department of a reasonable potential to exceed ambient water quality criteria.."*

Chapter 530 §(3)(E) states *"... that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action."*

Chapter 530 §4(F) states in part "*Where there is more than one discharge into the same fresh or estuarine receiving water or watershed, the Department shall consider the cumulative effects of those discharges when determining the need for and establishment of the level of effluent limits. The Department shall calculate the total allowable discharge quantity for specific pollutants, less the water quality reserve and background concentration, necessary to achieve or maintain water quality criteria at all points of discharge, and in the entire watershed. The total allowable discharge quantity for pollutants must be allocated consistent with the following principles.*

Evaluations must be done for individual pollutants of concern in each watershed or segment to assure that water quality criteria are met at all points in the watershed and, if appropriate, within tributaries of a larger river.

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

The total assimilative capacity, less the water quality reserve and background concentration, may be allocated among the discharges according to the past discharge quantities for each as a percentage of the total quantity of discharges, or another comparable method appropriate for a specific situation and pollutant. Past discharges of pollutants must be determined using the average concentration discharged during the past five years and the facility's licensed flow.

On January 11, 2013, the Department conducted statistical evaluations based on 15% of the ambient water quality criteria reserve being withheld (Report ID 422) and 0% of the reserve of the criteria being withheld (Report ID 489) to determine if the unallocated assimilative capacity would avoid an exceedance or avoid a reasonable potential to exceed applicable ambient water quality criteria for toxic pollutants. Report ID 489 indicates Fort Fairfield no longer has a reasonable potential to exceed the chronic ambient water quality criteria for ammonia or copper. Therefore, the Department is utilizing the full 15% of the unallocated assimilative capacity in the statistical evaluation when establishing limits for toxic pollutants in waste discharge licenses for facilities in the Aroostook River watershed.

The amount of allowable discharge quantity may be no more than the past discharge quantity calculated using the statistical approach referred to in section 3(E) [Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control"] of the rule, but in no event may allocations cause the water quality reserve amount to fall below the minimum referred to in 4(E) [15% of the total assimilative capacity]. Any difference between the total allowable discharge quantity and that allocated to existing dischargers must be added to the reserve.

See **Attachment C** of this Fact Sheet for Department guidance that establishes protocols for establishing waste load allocations. The guidance states that the most protective of water quality becomes the facility's allocation. According to the 1/11/13 statistical evaluation (Report ID #489), the pollutants of concern for the CUD (aluminum and copper) are to be limited based on the segment allocation method.

Chapter 530 §(3)(D)(1) states "*For specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded. With regard to concentration limits, the Department may review past and projected flows and set limits to reflect proper operation of the treatment facilities that will keep the discharge of pollutants to the minimum level practicable.*" However, in May 2012, Maine law 38 M.R.S.A. §464, ¶¶ K was enacted which reads as follows, "*Unless otherwise required by an applicable effluent limitation guideline adopted by the department, any limitations for metals in a waste discharge license may be expressed only as mass-based limits.*" As of the date of this minor revision, the Department has not adopted said guideline(s).

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

Segment allocation methodology

Historical Average:

For the segment allocation methodology, the historical average quantity (mass) for each pollutant of concern for each facility is calculated utilizing the arithmetic mean of the concentrated values reported for each pollutant, a conversion factor of 8.34 lbs/gallon and the monthly average permit limit for flow. The historical mass discharged for each pollutant for each facility is mathematically summed to determine the total mass discharged for each pollutant in the watershed. Based on the individual dischargers historical average each discharger is assigned a percentage of the whole which is then utilized to determine the percent of the segment allocation for each pollutant for each facility. For the permittee's facility, historical averages for aluminum and copper were calculated as follows:

Aluminum

Mass limits

Mean concentration (n=8) = 134 ug/L or 0.134 mg/L
Permit flow limit = 1.71 MGD
Historical average mass = (0.134 mg/L)(8.34)(1.71 MGD) = 1.91 lbs/day

The 1/11/13 statistical evaluation indicates the historical average mass of aluminum discharged by the permittee's facility is 7.68% of the aluminum discharged by the facilities on the Aroostook River and its tributaries. The Department has calculated a chronic assimilative capacity 83.1 lbs/day of aluminum at Fort Fairfield, the most downstream discharger on the Aroostook River. The chronic assimilative capacity (AC) at Fort Fairfield was calculated based on 90% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 0% reduction for reserve, totaling 10%), critical low flow (7Q10 = 190.1 cfs). It is noted the assimilative capacity allocated to the Little Madawaska (critical low flows 1Q10 = 26 cfs, 7Q10 = 28 cfs) to account for the discharge from the Limestone Water & Sewer District (LWSD) is no longer applicable as the discharge has since been removed from the Little Madawaska River and re-routed to the Aroostook River. The calculations for aluminum are as follows:

Chronic:

7Q10 @ Fort Fairfield = 190.1 cfs or 122.9 MGD
AWQC = 87 ug/L
87 ug/L(0.90) = 78.3 ug/L or 0.0783 mg/L

Chronic AC = (122.9 MGD)(8.34 lbs/gal)(0.0783 mg/L) = 80.3 lbs/day

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

Segment allocation methodology

Therefore, the mass segment allocations for aluminum for the permittee can be calculated as follows:

Monthly average: (Chronic assimilative capacity mass)(% of total aluminum discharged)
(80.3 lbs/day)(0.0768) = **6.3 lbs/day**

Copper

Mass limits

Mean concentration (n=8) = 14.2 ug/L or 0.0142 mg/L
Permit flow limit = 1.71 MGD
Historical average mass = (0.0142 mg/L)(8.34)(1.71 MGD) = 0.203 lbs/day

The 1/11/13 statistical evaluation indicates the historical average mass of copper discharged by the permittee's facility is 20.34% of the copper discharged by the facilities on the Aroostook River and its tributaries. The Department has calculated a chronic assimilative capacity of 3.81 lbs/day of copper at Fort Fairfield, the most downstream discharger on the Aroostook River. The chronic assimilative capacity (AC) at Fort Fairfield was calculated based on 90% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 0% reduction for reserve, totaling 10%), critical low flow (7Q10 = 190.1 cfs). The calculations for copper are as follows:

Chronic:

7Q10 @ Fort Fairfield = 190.1 cfs or 122.9 MGD
AWQC = 3.99 ug/L(based on a hardness 0f 37 mg/L)
3.99 ug/L(0.90) = 3.59 ug/L or 0.00359 mg/L

Chronic AC = (122.9 MGD)(8.34 lbs/gal)(0.00359 mg/L) = 3.68 lbs/day

Therefore, the mass segment allocation for copper for the permittee can be calculated as follows:

Monthly average: (Chronic assimilative capacity mass)(% of total copper discharged)
(3.68 lbs/day)(0.2034) = **0.75 lbs/day**

4. ANTI-DEGREDATION - IMPACT ON RECEIVING WATER QUALITY

Maine's anti-degradation policy is included in 38 M.R.S.A., Section 464(4)(F) and addressed in the *Conclusions* section of this permit. Pursuant to the policy, where a new or increased discharge is proposed, the Department shall determine whether the discharge will result in a significant lowering of existing water quality. Increased discharge means a discharge that would add one or more new pollutants to an existing effluent, increase existing levels of pollutants in an effluent, or cause an effluent to exceed one or more of its current licensed discharge flow or effluent limits, after the application of applicable best practicable treatment technology.

This permitting action revises previously established water quality based effluent limitations for total copper. The rationale for these actions is contained in Section 3 of this Fact Sheet. Based on the information provided in the referenced section, the Department has made the determination that the discharge approved by this permit will not result in a significant lowering of water quality. As permitted, the Department has determined the existing and designated water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the Aroostook River to meet standards for Class C classification.

5. DEPARTMENT CONTACTS

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

Gregg Wood
Division of Water Quality Management
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7693 Fax: (207) 287-3435
e-mail: gregg.wood@maine.gov

ATTACHMENT A

WET TEST REPORT

Data for tests conducted for the period

18/Jan/2008 - 18/Jan/2013

CARIBOU NPDES= ME010014 Effluent Limit: Acute (%) = 1.788 Chronic (%) = 1.521

Species	Test	Percent	Sample date	Critical %	Exception	RP
TROUT	A_NOEL	100	10/13/2009	1.788		
TROUT	A_NOEL	100	01/18/2011	1.788		
TROUT	A_NOEL	50	07/19/2011	1.788		
TROUT	C_NOEL	100	10/13/2009	1.521		
TROUT	C_NOEL	50	01/18/2011	1.521		
TROUT	C_NOEL	50	07/19/2011	1.521		
WATER FLEA	A_NOEL	100	02/03/2008	1.788		
WATER FLEA	A_NOEL	100	10/13/2009	1.788		
WATER FLEA	A_NOEL	100	07/21/2010	1.788		
WATER FLEA	A_NOEL	100	01/18/2011	1.788		
WATER FLEA	A_NOEL	100	07/19/2011	1.788		
WATER FLEA	C_NOEL	100	02/03/2008	1.521		
WATER FLEA	C_NOEL	25	10/13/2009	1.521		
WATER FLEA	C_NOEL	100	07/21/2010	1.521		
WATER FLEA	C_NOEL	100	01/18/2011	1.521		
WATER FLEA	C_NOEL	10	07/19/2011	1.521		

ATTACHMENT B

PRIORITY POLLUTANT DATA SUMMARY

Date Range: 18/Jan/2008 - 18/Jan/2013

Facility Name: **CARIBOU** NPDES: **ME0100145**

Test Date	Monthly (Flow MGD)	Daily (Flow MGD)	Total Test Number	Test # By Group M	V	BN	P	O	A	Clean	Hg
02/03/2008	0.76	0.82	21	10	0	0	0	11	0	F	0
10/13/2009	0.72	0.67	21	10	0	0	0	11	0	F	0
07/21/2010	1.11	1.09	21	10	0	0	0	11	0	F	0
01/18/2011	0.64	0.58	133	14	28	46	25	9	11	F	0
05/17/2011	1.58	0.89	11	10	0	0	0	1	0	F	0
07/19/2011	2.05	1.00	21	10	0	0	0	11	0	F	0
10/03/2011	0.86	0.84	11	10	0	0	0	1	0	F	0
02/06/2012	0.50	0.47	2	2	0	0	0	0	0	F	0

Key:

A = Acid O = Others P = Pesticides

BN = Base Neutral M = Metals V = Volatiles

ATTACHMENT C

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMORANDUM

DATE: October 2008

TO: Interested Parties

FROM: Dennis Merrill, DEP

SUBJECT: DEP's system for evaluating toxicity from multiple discharges

****

Following the requirements of DEP's rules, Chapter 530, section 4(F), the Department is evaluating discharges of toxic pollutants into a freshwater river system in order to prevent cumulative impacts from multiple discharges. This is being through the use of a computer program known internally as "DeTox". The enclosed package of information is intended to introduce you to this system.

Briefly, the DeTox program evaluates each wastewater facility within a watershed in three different ways in order to characterize its effluent: 1) the facility's past history of discharges, 2) its potential toxicity at the point of discharge on an individual basis, and 3) the facility's contribution to cumulative toxicity within a river segment in conjunction with other facilities. The value that is most protective of water quality becomes the value that is held in the DeTox system as an allocation for the specific facility and pollutant.

The system is not static and uses a five-year "rolling" data window. This means that, over time, old test results drop off and newer ones are added. The intent of this process is to maintain current, uniform facility data to estimate contributions to a river's total allowable pollutant loading prior to each permit renewal.

Many facilities are required to do only a relatively small amount of pollutant testing on their effluent. This means, statistically, the fewer tests done, the greater the possibility of effluent limits being necessary based on the facility's small amount of data. To avoid this situation, most facilities, especially those with low dilution factors, should consider conducting more than the minimum number of tests required by the rules.

Attached you will find three documents with additional information on the DeTox system:

- Methods for evaluating the effects of multiple discharges of toxic pollutants
- Working definitions of terms used in the DeTox system
- Reviewing DeTox Reports
- Prototype facility and pollutant reports

If you have questions as you review these, please do not hesitate to contact me at Dennis.L.Merrill@maine.gov or 287-7788.

Maine Department of Environmental Protection

Methods for evaluating the effects of multiple discharges of toxic pollutants.

Reference: DEP Rules, Chapter 530, section 4(F)

To evaluate discharges of toxic pollutants into a freshwater river system and prevent cumulative impacts from multiple discharges, DEP uses a computer program called "DeTox that functions as a mathematical evaluation tool.

It uses physical information about discharge sources and river conditions on file with the Department, established water quality criteria and reported effluent test information to perform these evaluations. Each toxic pollutant and associated water quality criterion for acute, chronic and/or human health effects is evaluated separately.

Each facility in a river drainage area has an assigned position code. This "address" is used to locate the facility on the river segment and in relation to other facilities and tributary streams. All calculations are performed in pounds per day to allow analysis on a mass balance. Pollutants are considered to be conservative in that once in the receiving water they will not easily degrade and have the potential to accumulate.

The process begins with establishing an assimilative capacity for each pollutant and water quality criterion at the most downstream point in the river segment. This calculation includes set-aside amounts for background and reserve quantities and assumed values for receiving water pH, temperature and hardness. The resulting amount of assimilative capacity is available for allocation among facilities on the river.

Each facility is evaluated to characterize its past discharge quantities. The historical discharge, in pounds per day, is figured using the average reported concentration and the facility's permitted flow. As has been past practice, a reasonable potential (RP) factor is used as a tool to estimate the largest discharge that may occur with a certain degree of statistical certainty. The RP factor is multiplied by the historical average to determine an allocation based on past discharges. The RP factor is also multiplied by the single highest test to obtain a maximum day estimate. Finally, the direct average without RP adjustment is used to determine the facility's percent contribution to the river segment in comparison to the sum of all discharges of the pollutant. This percent multiplied by the total assimilative capacity becomes the facility's discharge allocation used in evaluations of the segment loadings.

Additionally, individual facility discharges are evaluated as single sources, as they have been in the past to determine if local conditions are more limiting than a segment evaluation.

With all of this information, facilities are evaluated in three ways. The methods are:

1. The facility's past history. This is the average quantity discharged during the past five years multiplied by the applicable RP factor. This method is often the basis for an allocation when the discharge quantity is relatively small in comparison to the water quality based allocation.
2. An individual evaluation. This assumes no other discharge sources are present and the allowable quantity is the total available assimilative capacity. This method may be used when a local condition such as river flow at the point of discharge is the limiting factor.
3. A segment wide evaluation. This involves allocating the available assimilative capacity within a river segment based on a facility's percent of total past discharges. This method would be used when multiple discharges of the same pollutant to the same segment and the available assimilative capacity is relatively limited.

The value that is most protective of water quality becomes the facility's allocation that is held in the system for the specific facility and pollutant. It is important to note that the method used for allocation is facility and pollutant specific and different facilities on the same segment for the same pollutant can have different methods used depending on their individual situations.

Discharge amounts are always allocated to all facilities having a history of discharging a particular pollutant. This does not mean that effluent limits will be established in a permit. Limits are only needed when past discharge amounts suggest a reasonable potential to exceed a water quality based allocation, either on an individual or segment basis. Similar to past practices for single discharge evaluations, the single highest test value is multiplied by a RP factor and if product is greater than the water quality allowance, an effluent limit is established. It is important to remember an allocation is "banking" some assimilative capacity for a facility even if effluent limits are not needed.

Evaluations are also done for each tributary segment with the sum of discharge quantities in tributaries becoming a "point source" to the next most significant segment. In cases where a facility does not use all of its assimilative capacity, usually due to a more limiting individual water quality criterion, the unused quantity is rolled downstream and made available to other facilities.

The system is not static and uses a five-year rolling data window. Over time, old tests drop off and newer ones are added on. These changes cause the allocations and the need for effluent limits to shift over time to remain current with present conditions. The intent is to update a facility's data and relative contribution to a river's total assimilative capacity prior to each permit renewal. Many facilities are required to do only minimal testing to characterize their effluents. This creates a greater degree of statistical uncertainty about the true long-term quantities. Accordingly, with fewer tests the RP factor will be larger and result in a greater possibility of effluent limits being necessary. To avoid this situation, most facilities, especially those with relatively low dilution factors, are encouraged to conduct more that a minimum number of tests. It is generally to a facility's long-term benefit to have more tests on file since their RP factor will be reduced.

Maine Department of Environmental Protection

Working Definitions of Terms Used in the DeTox System.

Allocation. The amount of pollutant loading set aside for a facility. Separate amounts are set for each *water quality criterion.* Each pollutant having a history of being discharged will receive an allocation, but not all allocations become *effluent limits.* Allocation may be made in three ways: *historical allocation, individual allocation* or *segment allocation.*

Assimilative capacity. The amount of a pollutant that river segment can safely accept from point source discharges. It is determined for the most downstream point in a river segment using the *water quality criterion* and river flow. Separate capacities are set for acute, chronic and human health criteria as applicable for each pollutant. Calculation of this capacity includes factors for *reserve* and *background* amounts.

Background. A concentration of a pollutant that is assumed to be present in a receiving water but not attributable to discharges. By rule, this is set as a rebuttable presumption at 10% of the applicable *water quality criterion.*

Effluent limit. A numeric limit in a discharge permit specifically restricting the amount of a pollutant that may be discharged. An effluent limit is set only when the highest discharge, including an adjustment for *reasonable potential,* is greater than a facility's water quality based *allocation* for a pollutant.

Historical allocation (or *RP history*). One of three ways of developing an *allocation.* The facility's average history of discharges, in pounds at design flow, is multiplied by the appropriate *reasonable potential* factor. An allocation using this method does not become an *effluent limit.*

Historical discharge percentage. For each pollutant, the average discharge concentration for each facility in a segment is multiplied by the permitted flow (without including a *reasonable potential* factor). The amounts for all facilities are added together and a percent of the total is figured for each facility. When a facility has no detectable concentrations, that pollutant is assumed to be not present and it receives no percentage.

Individual allocation. One of three ways of developing an *allocation.* The facility's single highest discharge on record multiplied by the appropriate *reasonable potential* factor is compared to a water quality based quantity with an assumption that the facility is the only point source to that receiving water. If the RP-adjusted amount is larger, the water quality amount may become an *effluent limit.*

Less than. A qualification on a laboratory report indicating the concentration of a pollutant was below a certain concentration. Such a result is evaluated as being one half of the Department's reporting limit in most calculations.

Reasonable potential (RP). A statistical method to determine the highest amount of a pollutant likely to be present at any time based on the available test results. The method produces a value or RP factor that is multiplied by test results. The method relies on an EPA guidance document, and considers the coefficient of variation and the number of tests. Generally, the fewer number of tests, the higher the RP factor.

Reserve. An assumed concentration of a pollutant that set aside to account for non-point source of a pollutant and to allow new discharges of a pollutant. By rule this is set at 15% of the applicable *water quality criterion.*

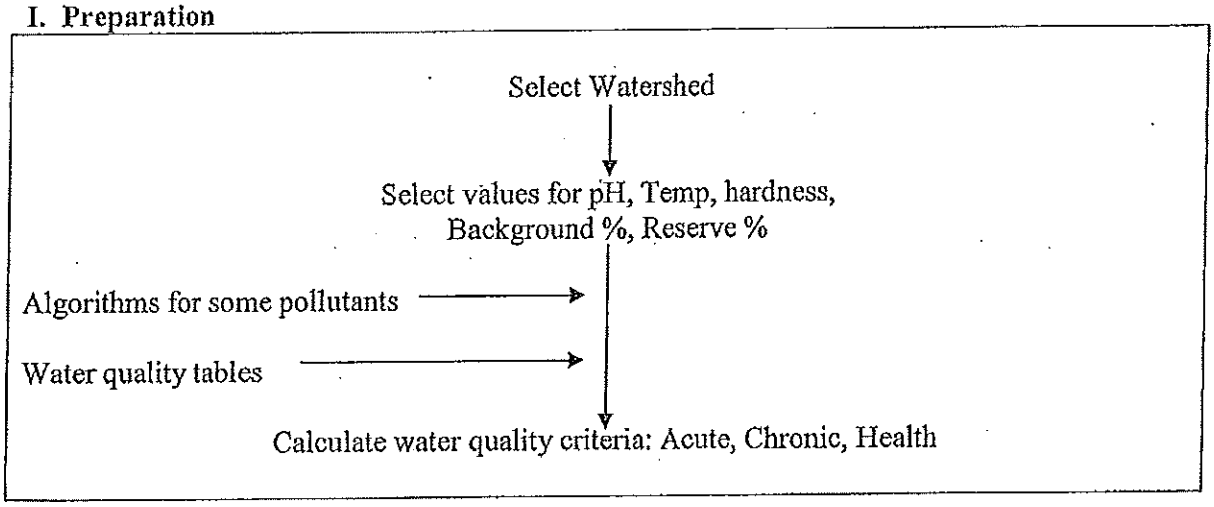
Segment allocation. One of three ways of developing an *allocation.* The amount is set by multiplying a facility's *historical discharge percentage* for a specific pollutant by the *assimilative capacity* for that pollutant and criterion. A facility will have different allocation percentages for each pollutant. This amount may become an *effluent limit.*

Tributary. A stream flowing into a larger one. A total pollutant load is set by adding the all facilities *allocations* on the tributary and treating this totaled amount as a "point source" to the next larger segment.

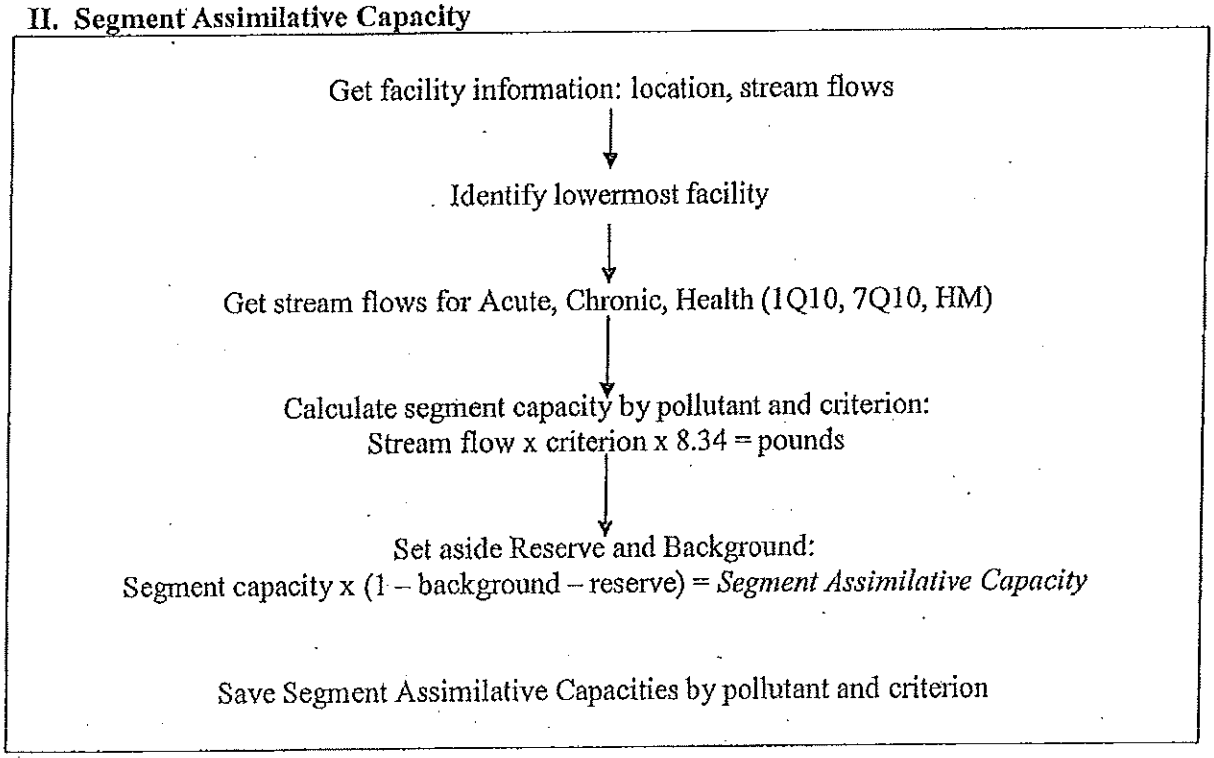
Water quality criteria. Standards for acceptable in-stream or ambient levels of pollutants. These are established in the Department's Chapter 584 and are expressed as concentrations in ug/L. There may be separate standards for acute and chronic protection aquatic life and/or human health. Each criterion becomes a separate standard. Different stream flows are used in the calculation of each.

Maine Department of Environmental Protection
General Processing Steps in "DeTox"

I. Preparation

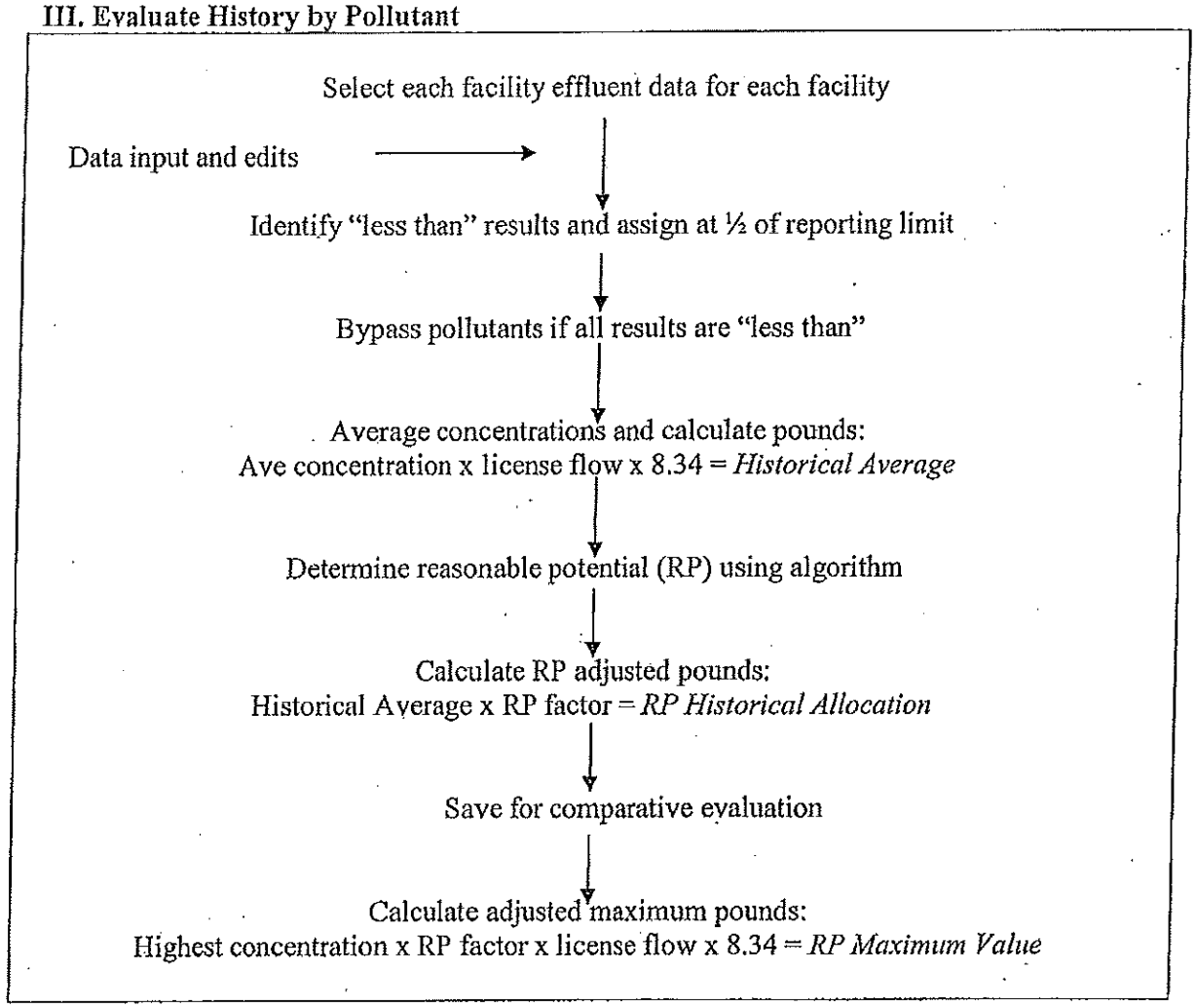


II. Segment Assimilative Capacity

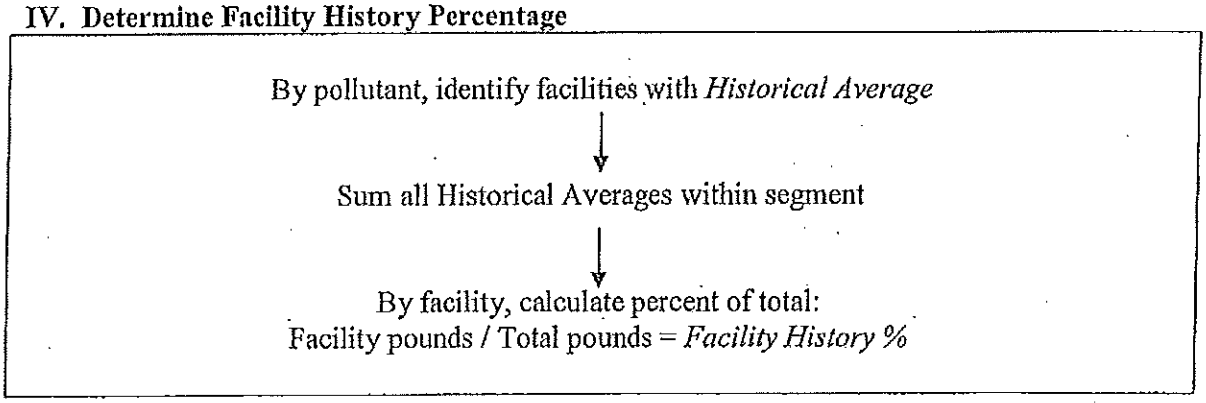


Maine Department of Environmental Protection
General Processing Steps in "DeTox"

III. Evaluate History by Pollutant



IV. Determine Facility History Percentage



Maine Department of Environmental Protection
General Processing Steps in "DeTox"

V. Segment Allocation

By pollutant and criterion, select *Segment Assimilative Capacity*

↓

Select individual *Facility History %*

↓

Determine facility allocation:
Assimilative Capacity x Facility History % = *Segment Allocation*

↓

Save for comparative evaluation

VI. Individual Allocation

Select individual facility and dilution factor (DF)

↓

Select pollutant and water quality criterion

↓

By pollutant and criterion, calculate individual allocations:
[DF x 0.75 x criterion] + [0.25 x criterion] = Individual Concentration

↓

Determine individual allocation:
Individual Concentration x license flow x 8.34 = *Individual Allocation*

↓

Save for comparative evaluation

VII. Make Initial Allocation

By facility, pollutant and criterion, get:
Individual Allocation, Segment Allocation, RP Historical Allocation

↓

Compare allocation and select the smallest

↓

Save as *Facility Allocation*

VIII. Evaluate Need for Effluent Limits

By facility, pollutant and criterion select
Segment Allocation, *Individual Allocation* and *RP Maximum value*

↓

If *RP Maximum value* is greater than either *Segment Allocation* or *Individual Allocation*, use lesser value as *Effluent Limit*

↓

Save *Effluent Limit* for comparison

IX. Reallocation of Assimilative Capacity

Starting at top of segment, get *Segment Allocation*, *Facility Allocation* and *Effluent Limit*

↓

If *Segment Allocation* equals *Effluent Limit*, move to next facility downstream

↓

If not, subtract *Facility Allocation* from *Segment Allocation*

↓

Save difference

↓

Select next facility downstream

↓

Figure remaining *Segment Assimilative Capacity* at and below facility, less tributaries

↓

Add saved difference to get an adjusted *Segment Assimilative Capacity*

↓

Reallocate *Segment Assimilative Capacity* among downstream facilities per step V

↓

Repeat process for each facility downstream in turn

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: March 2012 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's ("DEP") Commissioner: (1) in an administrative process before the Board of Environmental Protection ("Board"); or (2) in a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S.A. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S.A. § 480-HH(1) or a general permit for a tidal energy demonstration project (38 M.R.S.A. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This INFORMATION SHEET, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S.A. §§ 341-D(4) & 346, the *Maine Administrative Procedure Act*, 5 M.R.S.A. § 11001, and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 CMR 2 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days of the date on which the Commissioner's decision was filed with the Board will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by the Board's receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner a copy of the appeal documents and if the person appealing is not the applicant in the license proceeding at issue the applicant must also be sent a copy of the appeal documents. All of the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time submitted:

1. *Aggrieved Status.* The appeal must explain how the person filing the appeal has standing to maintain an appeal. This requires an explanation of how the person filing the appeal may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing on the appeal is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
7. *New or additional evidence to be offered.* The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered by the Board in an appeal only when the evidence is relevant and material and that the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2.

Other Considerations in Appealing a Decision to the Board

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed the license normally remains in effect pending the processing of the appeal. A license holder may proceed with a project pending the outcome of an appeal but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

What to Expect Once You File a Timely Appeal with the Board

The Board will formally acknowledge receipt of an appeal, including the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, and any materials submitted in response to the appeal will be sent to Board members with a recommendation from DEP staff. Persons filing appeals and interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, a license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2; 5 M.R.S.A. § 11001; & M.R. Civ. P 80C. A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. Failure to file a timely appeal will result in the Board's or the Commissioner's decision becoming final.

An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S.A. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452 or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.