STATE OF MAINE

Department of Environmental Protection

Paul R. LePage
GOVERNOR

Patricia W. Aho
COMMISSIONER

July 2, 2013

Ms. Sarah Nicholson, P.E.
Woodard & Curran
One Merchant Plaza, Suite 501
Bangor, ME. 04401

RE: Maine Pollutant Discharge Elimination System Permit #ME0000639
Maine Waste Discharge License Application #W001048-5N-D-R
Mallinckrodt – Final Permit

Dear Ms. Nicholson:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL (permit hereinafter) which was approved by the Department of Environmental Protection. Please read the permit 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: Tanya Hovell, DEP/CMRO
Lori Mitchell, DEP/CMRO
Stacy Ladner, DEP/CMRO

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

DEPARTMENT ORDER

IN THE MATTER OF

MALLINCKRODT US LLC &	)	MAINE POLLUTANT DISCHARGE
U.S. SURGICAL CORPORATION	)	ELIMINATION SYSTEM PERMIT
ORRINGTON, PENOBSCOT COUNTY, MAINE	)	
GROUND WATER REMEDIATION	)	AND
ME0000639	)	WASTE DISCHARGE LICENSE
W0001048-5N-D-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq., and Maine Law 38 M.R.S.A., Section 414-A et. seq., and all applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of MALLINCKRODT US LLC & U.S. SURGICAL CORPORATION (Mallinckrodt/permittee hereinafter), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

Mallinckrodt US LLC (a wholly owned subsidiary of U.S. Surgical Corporation) has filed an application with the Department to renew Maine Waste Discharge License (WDL) #W001048-5N-C-R, which was issued by the Department to HoltraChem Manufacturing Company LLC on April 10, 2000. The WDL authorized the discharge of up to a daily maximum of 250,000 gallons per day (gpd) of treated process and miscellaneous wastewaters from an industrial chemical manufacturing facility to the Penobscot River, Class B, in Orrington, Maine.

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and permit #ME000639 (same as the NPDES permit number) has been and will be utilized as the primary reference number for this facility.

The manufacturing facility ceased operations in calendar year 2000. The wastewater treatment system continued operation thereafter to treat groundwaters associated with a remediation project overseen by the Department's Bureau of Remediation and Waste Management. As an amendment to the December 8, 2003, application for permit renewal, the permittee submitted a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, August 19, 2011, prepared for Mallinckrodt by the consulting firm Woodard & Curran. The report describes the basis for the design of a new ground water treatment plant (GWTP) to treat present and future contaminated ground water flows.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated May 29, 2013, and subject to the terms and conditions contained herein, the Department makes the following CONCLUSIONS:

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

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

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

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

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

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

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

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

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

ACTION

THEREFORE, the Department APPROVES the above noted application of MALLINCKRODT US LLC and U.S. SURGICAL CORPORATION, to discharge treated groundwater to the Penobscot River, Class B, in Orrington, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:.

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 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.A. §10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (effective April 1, 2003)]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS 3RD DAY OF July 2013.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Michael Kuhns
For Patricia W. Aho, Commissioner

Date of initial receipt of application December 10, 2003.

Date of application acceptance December ~~22, 2003~~

Filed
JUL - 5 2013
State of Maine
Board of Environmental Protection

Date filed with Board of Environmental Protection _____

This order prepared by GREGG WOOD, BUREAU OF LAND AND WATER QUALITY

SPECIAL CONDITIONS

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

OUTFALL #001 – Final Effluent - The permittee is authorized to discharge **treated waste waters from Outfall #001** to the Penobscot River. Such discharges shall be limited and monitored by the permittee as specified below[1]

Beginning upon permit issuance and lasting through March 31, 2014

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	60,000 gpd [07]	Report gpd [07]	---	---	Continuous [99/99]	Meter [MT]
1,1-Dichloroethane [34496]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
1,1-Dichloroethene [34499]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
2,4,5-T [39740]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
Acetone [81552]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
Bromodichloromethane [51073]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
Bromoform [32104]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
Carbon disulfide [77041]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]
Carbon tetrachloride [32102]	0.0025 lbs/day[26]	0.0025 lbs/day[26]	5 ug/L[28]	5 ug/L[28]	1/Month [01/30]	Grab [GR]
Chloroform [32106]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Quarter [01/90]	Grab [GR]

SPECIAL CONDITIONS

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

Beginning upon permit issuance and lasting through March 31, 2014

OUTFALL #001 – Final Effluent

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Chloropicrin *[77548]*	0.015 lbs/day*[26]*	0.015 lbs/day*[26]*	30 ug/L*[28]*	30 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Cis-1,2-Dichloroethene *[81686]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Dibromochloromethane *[32105]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Hexachloroethane *[34396]*	0.0025 lbs/day*[26]*	0.0025 lbs/day*[26]*	5 ug/L*[28]*	5 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Manganese (Total) *[82060]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Mercury (Total)[3a] *[71900]*	0.00046 lbs/day*[26]*	0.00085 lbs/day*[26]*	0.91 ug/L*[28]*	1.7 ug/L*[28]*	3/Week *[03/07]*	Grab *[GR]*
Methylene Chloride *[34423]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/30]*	Grab *[GR]*
Cresol (Total) *[79778]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Beginning upon permit issuance and lasting through March 31, 2014

OUTFALL #001 – Final Effluent

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Pentachloroethane *[81501]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU[4] *[12]*	Continuous *[99/99]*	Meter *[MT]*
Tetrachloroethene *[78389]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Trans-1,2-Dichloroethene *[78376]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Trichloroethylene *[39180]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Beginning upon permit issuance and lasting through March 31, 2014

OUTFALL #002 – Internal waste stream - treated ground water. Sampling must be conducted at a point prior to mixing with any other waste stream whether it be treated or untreated. Such discharges shall be limited and monitored by the permittee as specified below[1,5]

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	Report gpd *[07]*	Report gpd *[07]*	---	---	Continuous *[99/99]*	Meter *[MT]*
1,1-Dichloroethane *[34496]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
1,1-Dichloroethene *[34499]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
2,4,5-T *[39740]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Acetone *[81552]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Bromodichloromethane *[51073]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Bromoform *[32104]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Carbon disulfide *[77041]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Carbon tetrachloride *[32102]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Chloroform *[32106]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Beginning upon permit issuance and lasting through March 31, 2014

OUTFALL #002 – Internal waste stream - treated ground water.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified(2)	Daily Maximum as specified(2)	Measurement Frequency as specified	Sample Type as specified
Chloropicrin *[77548]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/30]*	Grab *[GR]*
Cis-1,2-Dichloroethene *[81686]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Dibromochloromethane *[32105]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Hexachloroethane *[34396]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Manganese (Total) *[82060]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Mercury (Total) (3b) *[50286]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Discharge Day *[01/DD]*	Grab *[GR]*
Methylene Chloride *[34423]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Cresol (Total) *[79778]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Beginning upon permit issuance and lasting through March 31, 2014

OUTFALL #002 – Internal waste stream - treated ground water.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Pentachloroethane *[81501]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU[4] *[12]*	Continuous *[99/99]*	Meter *[MT]*
Tetrachloroethene *[78389]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Trans-1,2-Dichloroethene *[78376]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
Trichloroethylene *[31980]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*

SPECIAL CONDITIONS

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

OUTFALL #001 – Final Effluent - The permittee is authorized to discharge **treated waste waters from Outfall #001** to the Penobscot River. Such discharges shall be limited and monitored by the permittee as specified below[1]

Beginning April 1, 2014 and lasting through the expiration date of the permit.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	60,000 gpd [07]	Report gpd [07]	---	---	Continuous [99/99]	Meter [MT]
Carbon tetrachloride [32102]	0.0025 lbs/day[26]	0.0025 lbs/day[26]	5 ug/L[28]	5 ug/L[28]	1/Month [01/30]	Grab [GR]
Chloropicrin [77548]	0.015 lbs/day[26]	0.015 lbs/day[26]	30 ug/L[28]	30 ug/L[28]	1/Month [01/30]	Grab [GR]
Hexachloroethane [34396]	0.0025 lbs/day[26]	0.0025 lbs/day[26]	5 ug/L[28]	5 ug/L[28]	1/Month [01/30]	Grab [GR]
Mercury (Total) [3a] [71900]	0.00046 lbs/day[26]	0.00085 lbs/day[26]	0.91 ug/L[28]	1.7 ug/L[28]	3/Week [03/07]	Grab [GR]
pH [00400]	---	---	---	6.0 – 9.0 SU[4] [12]	Continuous [99/99]	Meter [MT]

SPECIAL CONDITIONS

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

OUTFALL #002 – Internal waste stream - treated ground water. Sampling must be conducted at a point prior to mixing with any other waste stream whether it be treated or untreated.

Beginning April 1, 2014 and lasting through the expiration date of the permit.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	Report gpd [07]	Report gpd [07]	---	---	Continuous [99/99]	Meter [MT]
Mercury (Total) [3b] [71900]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Discharge Day [01/DD]	Grab [GR]
pH [00400]	---	---	---	6.0 – 9.0 SU[4] [12]	Continuous [99/99]	Meter [MT]

SPECIAL CONDITIONS

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

Beginning upon receipt of any new waste stream for treatment and lasting through at least ten (10) months thereafter. [6]

OUTFALL #001 – Final Effluent - The permittee is authorized to discharge **treated waste waters from Outfall #001** to the Penobscot River. Such discharges shall be limited and monitored by the permittee as specified below[1]

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified[2]	Daily Maximum as specified[2]	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	60,000 gpd [07]	Report gpd [07]	---	---	Continuous [99/99]	Meter [MT]
1,1-Dichloroethane [34496]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
1,1-Dichloroethene [34499]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
2,4,5-T [39740]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Acetone [81552]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Bromodichloromethane [51073]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Bromoform [32104]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Carbon disulfide [77041]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Carbon tetrachloride [32102]	0.0025 lbs/day[26]	0.0025 lbs/day[26]	5 ug/L[28]	5 ug/L[28]	1/Month [01/30]	Grab [GR]
Chloroform [32106]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]

SPECIAL CONDITIONS

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

Beginning upon receipt of any new waste stream for treatment and lasting through at least ten (10) months thereafter. (6)

OUTFALL #001 – Final Effluent

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified(2)	Daily Maximum as specified(2)	Measurement Frequency as specified	Sample Type as specified
Chloropicrin [77548]	0.015 lbs/day[26]	0.015 lbs/day[26]	30 ug/L[28]	30 ug/L[28]	1/Month [01/30]	Grab [GR]
Cis-1,2-Dichloroethene [81686]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Dibromochloromethane [32105]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Hexachloroethane [34396]	0.0025 lbs/day[26]	0.0025 lbs/day[26]	5 ug/L[28]	5 ug/L[28]	1/Month [01/30]	Grab [GR]
Manganese (Total) [82060]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Mercury (Total) (3a) [71900]	0.00046 lbs/day[26]	0.00085 lbs/day[26]	0.91 ug/L[28]	1.7 ug/L[28]	3/Week [03/07]	Grab [GR]
Methylene Chloride [34423]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Cresol (Total) [79778]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]

SPECIAL CONDITIONS

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

Beginning upon receipt of any new waste stream for treatment and lasting through at least ten (10) months thereafter. (6)

OUTFALL #001 – Final Effluent

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified(2)	Daily Maximum as specified(2)	Measurement Frequency as specified	Sample Type as specified
Pentachloroethane [81501]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
pH [00400]	---	---	---	6.0 – 9.0 SU(4) [12]	Continuous [99/99]	Meter [MT]
Tetrachloroethene [78389]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Trans-1,2-Dichloroethene [78376]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]
Trichloroethylene [39180]	Report lbs/day[26]	Report lbs/day[26]	Report ug/L[28]	Report ug/L[28]	1/Month [01/30]	Grab [GR]

SPECIAL CONDITIONS

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

(1) **Effluent sampling** for Outfall #001 shall be conducted at a valved sample point inside the new treatment building just prior to the new 4-inch diameter discharge line. Effluent sampling for Outfall #002 shall be conducted at a valved sample point inside the new treatment building just prior to combining with the other water streams at Outfall #001. Any change in sampling location(s) must be reviewed and approved by the Department in writing.

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

Parameter	RL
1,1-Dichloroethane	3 ug/L
1,1-Dichloroethene	1.0 ug/L
2,4,5-Trichlorophenoxy acetic acid	10 ug/L
Acetone	25 ug/L
Bromodichloromethane	1 ug/L
Bromoform	1 ug/L
Carbon disulfide	5 ug/L
Carbon tetrachloride	1 ug/L
Chloroform	1 ug/L
Chloropicrin	5 ug/L

SPECIAL CONDITIONS

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

Footnotes:

Parameter	RL
Cis-1,2 Dichloroethene	1 ug/L
Dibromochloromethane	1 ug/L
Hexachloroethane	1 ug/L
Manganese (Total)	100 ug/L
Mercury (Total) Method 1631	0.05 ug/L
Mercury (Total) Method 245	0.2 ug/L
Methylene Chloride	5 ug/L
Cresol (Total)	1 ug/L
Pentachloroethane	10 ug/L
Tetrachloroethene	1 ug/L
Trans 1,2-Dichloroethene	1 ug/L
Trichloroethylene	1 ug/L

(3) **Mercury**

a) **Outfall #001** – Sampling and analysis shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

b) **Outfall #002** – 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.

(4) **pH** - Criteria found at 06-096 CMR Department rule Chapter 525 (4)(VIII)(A) (1&2) regarding pH limitations under continuous monitoring is applicable to these discharges when continuous monitoring is utilized.

(5) **Outfall #002** - Additional monitoring may be required by the Department in the Comprehensive Monitoring Plan which may include analysis of separate waste streams prior to co-mingling with other treated or untreated waste streams.

SPECIAL CONDITIONS

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

Footnotes:

(6) **Outfall #001 – Receipt of new waste stream for treatment** – At least 60 days prior to the commencement of treatment of any new waste stream(s) the permittee shall contact the Department's assigned compliance inspector to provide notice of said receipt and treatment of a new waste stream. For the purposes of this permit, new waste streams are defined as the addition of new extraction wells that result in a new capture zone or an increase in pumping rate from any single well that exceeds the previous historical maximum by more than ten (10) percent. Each time a new waste stream is accepted for treatment, the permittee shall commence monitoring and reporting of effluent test results for all parameters listed in this permit for at least ten (10) consecutive months. Once the permittee has completed the ten consecutive months of testing, the Department will conduct a statistical evaluation in accordance with the statistical approach outlined in the 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 determine which, if any, parameter(s) exceed or have a reasonable potential to exceed the effluent limits established in this permit. For any parameter(s) identified as exceeding or having a reasonable potential to exceed the limits established in this permit, the permittee will be notified in writing by the Department of this determination and the permittee will be required to continue to monitor for said parameter(s) on a 1/Month basis until otherwise specified by the Department. For the remaining parameters, the permittee will be notified in writing by the Department that it is relieved of the requirement for monitoring for these parameters until another new waste stream is accepted for treatment and then the permittee shall revert back to monitoring and reporting for the full suite of parameters in this permit for another ten-month period.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated for the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated for the classification of the receiving waters.

3. The discharge shall not cause visible discoloration or turbidity in the receiving waters, which would impair the usages designated for the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

SPECIAL CONDITIONS

C. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade I P/C** certificate (or Registered Maine Professional Engineer) pursuant to *Sewerage Treatment Operators*, 32 M.R.S.A. §§ 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. 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 December 22, 2003; and amended on August 19, 2011, 2) the terms and conditions of this permit; and 3) only from the outfall(s) identified in this permit. Discharges of waste water from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

E. NOTIFICATION REQUIREMENTS

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

1. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system by a source introducing pollutants to the system at the time of permit issuance.

2. For the purposes of this section, adequate notice shall include information on:

   a. The quality and quantity of waste water introduced to the waste water collection and treatment system; and

   b. Any anticipated impact of the change in the quantity or quality of the waste water to be discharged from the treatment system.

SPECIAL CONDITIONS

F. OPERATIONS AND MAINTENANCE (O&M) PLAN

On or before September 1, 2013, ***(ICIS Code 09699)***, the permittee shall submit to the Department for review and comment, a written comprehensive Operation & Maintenance (O&M) Plan for the new ground water treatment plant (GWTP). Once endorsed by the Department, the permittee shall maintain said plan that provides a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

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

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

By December 31 of each calendar year, the permittee shall provide the Department with a certification describing any of the following that have occurred since the effective date of this permit *[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 wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;

(b) Changes in the operation of the treatment works that may increase the toxicity of the discharge; and

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

The Department reserves the right to establish whole effluent toxicity (WET), analytical chemistry and/or priority pollutant testing pursuant to 06-096 CMR Department rule, Chapter 530, *Surface Water Toxics Control Program*, or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedences of ambient water quality criteria/thresholds.

SPECIAL CONDITIONS

H. MONITORING AND REPORTING

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

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
106 Hogan Road
Bangor, Maine 04401
And
Department of Environmental Protection
Central Maine Regional Office
Bureau of Remediation and Waste Management
Stacey Ladner, Hazardous Waste Project Manager
17 State House Station
Augusta, Maine 04333-0017

H. MONITORING AND REPORTING

Alternatively, if you are submitting an electronic DMR (eDMR), the completed eDMR 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 eDMR must be mailed 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.

I. REOPENING OF PERMIT FOR MODIFICATION

Upon evaluation of the tests results in the Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to establish limitations or require additional monitoring, inspections and/or reporting based on new information. The permittee mas also petition the Department at any time for authorization to permit requirements related to monitoring parameters and/or frequency, effluent limitations or other changes based on new information No such changes shall take effect without a formal modification of this permit issued by the Department.

SPECIAL CONDITIONS

J. SEVERABILITY

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

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **May 29, 2013**

PERMIT NUMBER: **ME0000639**
WASTE DISCHARGE LICENSE: **W001048-5N-D-R**

NAME AND ADDRESS OF APPLICANT:

MALLINCKRODT US LLC & U.S. SURGICAL CORPORATION
c/o Woodard & Curran
One Merchants Plaza, Suite 501
Bangor, Maine 04401

COUNTY: **Penobscot**

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

Former HOLTRACHEM MANUFACTURING FACILITY
99 Industrial Way
Orrington, Maine 04474

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

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Ms. Sarah Nicholson, P.E.**
VP, Woodard & Curran
(207) 945-5105 x2109
e-mail: snicholson@woodardcurran.com

1. APPLICATION SUMMARY

a. Application: Mallinckrodt US LLC and United States Surgical Corporation (Mallinckrodt hereinafter) have filed an application with the Maine Department of Environmental Protection (Department hereinafter) to renew Maine Waste Discharge License (WDL) #W001048-5N-C-R, which was issued by the Department to HoltraChem Manufacturing Company LLC (HMC hereinafter) on April 10, 2000. The WDL authorized the discharge of up to a daily maximum of 250,000 gallons per day (gpd) of treated process and miscellaneous wastewaters from an industrial chemical manufacturing facility to the Penobscot River, Class B, in Orrington, Maine. See **Attachment A** of this Fact Sheet for a location map.

1. APPLICATION SUMMARY (cont'd)

The manufacturing facility ceased operations in September 2000. The wastewater treatment system continued operation thereafter to treat ground waters associated with a remediation project overseen by the Department's Bureau of Remediation and Waste Management. As an amendment to the December 8, 2003, application for permit renewal, the permittee submitted a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, August 19, 2011, prepared for Mallinckrodt by the consulting firm Woodard & Curran. The report describes the basis for the design of a new ground water treatment plant (GWTP) to treat present and future contaminated ground water flows. The permittee is seeking authorization to discharge up to a monthly average flow of 60,000 gpd. The design capacity of the new GWTP is greater than 60 gallons per minute (gpm) or 86,000 gallons per day (gpd). According to the permittee, the system became operational on or about September 1, 2012.

b. Source description & waste water treatment – The April 2000 licensing action contained terms and conditions to limit the quantity of pollutants discharged from a facility that from its construction in 1967 to September 2000, engaged in the manufacture of chlorine and related products including: sodium hydroxide, (caustic soda), sodium hypochlorite (chlorine bleach), hydrochloric acid and chloropicrin.

The former manufacturing facility was sited on a 235-acre parcel of land. The immediate manufacturing operations involved 12 of the acres. The site also includes five separate landfills. Four of the landfills were unlicensed hazardous waste landfills that predated the Department's Hazardous Waste Management Rules and one landfill was an interimly licensed hazardous waste landfill. The landfills were utilized between 1970 and 1983. See **Attachment B** of this Fact Sheet for a site map showing the locations of the landfills. The site also contained six separate leachfields to dispose of sanitary waste waters including mercury residues and laboratory wastes. Only two leachfields, leachfields 1 and 10 remain active as of the date of this permitting action. Through a series of site investigations, the Department has determined that approximately 70 acres of the site were adversely impacted by the former operation.

The following italicized text is taken from the BEP's August 19, 2010, Order of Appeal;

D. "Groundwater Collection and Waste Water Treatment - The Commissioner's Order at pages 34-35, paragraph 7, requires the continued operation of the existing groundwater collection systems and wastewater treatment plant. The provision also includes shut down criteria for when the wastewater treatment plant could be terminated. Ms. Ladner testified that the requirement for treatment of contaminated waters, including language for termination of the system, is typical of remediation orders. Mallinckrodt has not objected to the need for the collection and treatment of groundwater or the operation of a wastewater treatment plant to treat contamination. It has not objected to the shutdown criteria. Mallinckrodt has proposed to build a new wastewater treatment plant on-site.

1. APPLICATION SUMMARY (cont'd)

The requirement for continued operation of the wastewater treatment plant and groundwater collection systems is upheld; however, given that mercury contaminated wastes will remain on-site in Landfills 3, 4 and 5, and possibly elsewhere as discussed in Findings of Fact 10(C) and 10(D) of this Decision, the Board finds that the groundwater collection and treatment system must be revised. Mallinckrodt shall submit, for Department review and approval, a comprehensive groundwater collection and treatment system plan incorporating requirements for groundwater collection at the western end of the Site, in the vicinity of Landfills 2 through 5 and any groundwater determined to be migrating to the Ferry Road residential wells. The groundwater extraction and treatment system must be designed to address mercury contamination as well as organic contaminants including carbon tetrachloride which evidence indicates has leaked and may continue to leach from wastes in the vicinity of Landfill 4. The water collected from the areas around Landfills 3,4 and 5 cannot be used to dilute concentrations of mercury in treated discharge water. Rather, the water from this area must be monitored for compliance with the media protection standards prior to being combined with groundwater collected from the vicinity of Landfill Area 1. The Board finds that the Department will determine when the system may be shut down, and the level of groundwater monitoring required to determine whether the system needs to be reactivated to address contaminated groundwater.

E. *Wastewater Discharge - In his testimony, Dr. Beane expressed concern that the groundwater extraction and treatment system if not designed properly could draw excessive amounts of uncontaminated water from the river into the system, thereby diluting the level of contaminants in the water going to the wastewater treatment facility. In such instances, the wastewater discharge could meet the concentration limit for the discharge but still discharge excessive amounts of mercury to the river. The Board shares this concern. Therefore, discharge limits should be established based upon both concentration of contaminant and the mass of contaminant, Wastewater discharges shall be monitored in such a fashion as to measure continuously the liquid volume rate of discharge, and at least once daily the amount of mercury and other parameters with set discharge limits. The wastewater discharge limits should be set in terms of both concentration and maximum daily and monthly average mass discharge limit for mercury, carbon tetrachloride, trichloroethylene, chloropicrin and other contaminants of concern as the Department deems necessary.*

Additionally, since this Decision requires collection and treatment of contaminated groundwater from the Landfill 4 area, the groundwater from the Landfill 4 area shall not be co-mingled with the groundwater collected from the Landfill 1 area prior to determination of compliance with media protection standards."

The previous licensing action dated April 10, 2000, established limitations and monitoring requirements for two outfalls. Waste streams contributing to Outfall #001 identified in HMC's 4/95 WDL application for renewal included various process waste waters, wash waters and storm water. All process waste waters associated with the operational manufacturing facility were treated in a batch mode of operation and tested

1. APPLICATION SUMMARY (cont'd)

for compliance (internal Outfall #002) and were conveyed to Outfall #001 for discharge to the Penobscot River via a ductile iron pipe measuring 18 inches in diameter with approximately one foot of water over the top of the pipe at mean low water. All these process waste streams have since been eliminated.

The design of the new ground water treatment plant, in basic terms, will consist of two trains, each designed for a flow of at least 30 gpm: 1) flows from the southerly stream interceptor trench (SSIT), stormwater, construction dewatering, remediation side streams, and miscellaneous flows, all of which may require silica and/or gross solids removal via CoMag™ ballasted flocculation treatment, pH adjustment and filtration prior to Mersorb treatment; and 2) extracted groundwater from various areas of the Site, all of which is expected to be free of silica and solids, and will require only simple bag filtration prior to Mersorb treatment.

This permitting action carries forward the two outfall designations as each outfall treats different waste streams and provides for different levels of treatment.
Outfall #001 will discharge all water from the waste water treatment plant. This will include, in addition to the streams identified in Outfall #002, groundwater extracted downgradient of the landfills and is expected to contain mercury and a number of organic contaminants. Initially, this stream will consist of groundwater from a 4-inch diameter extraction well on Landfill 1, designated as MW-601. MW-601 will be serviced by a single well pump discharging to a double walled, pipeline that will transport groundwater from the well to the new GWTP. The flow from the well will be controlled with a flow meter and manual control valve at a rate of between 5 and 30 gpm. This groundwater will flow through a one (1) micron bag filter, up to ten Mersorb vessels, and a final one (1) micron bag filter. Mersorb is a proprietary formulation of granulated activated carbon (GAC) which contains sulfur to enhance the GAC's ability to adsorb mercury. Conventional GAC may be utilized in addition to Mersorb depending on the relative concentration of VOCs and mercury. The treated groundwater will be discharged continuously through a new 4-inch diameter line that discharges to the existing outfall to the Penobscot River. The sampling location for Outfall #001 has is a valved sample point inside the new GWTP, just prior to the new 4-inch diameter discharge line. The October 3, 2011 application amendment indicates potential future groundwater flows from additional extraction wells at Landfills 1, 3 and 4 that have been factored into the treatment plant design.

1. APPLICATION SUMMARY (cont'd)

OUTFALL #002

Groundwater extracted from the SSIT will be pumped from a collection sump and delivered via an underground pipeline to a 10,000 gallon mix tank where reagents may be added to precipitate dissolved silica. A separate stream which includes stormwater and potential wastewater related to site remediation will be pumped via a separate underground line to two 15,000 gallon storage tanks. Water stored in the tanks may be combined with the SSIT stream or treated separately. The first component of the treatment train will be the CoMag system, a process that enhances removal of precipitated solids. Sludge produced by the CoMag system will be further conditioned with polymer and dewatered in a filter press. The solids will be managed in accordance with applicable federal, state and or local rules and regulations. Water processed through the CoMag system will be adjusted to a pH of approximately 10.5 and trace solids will be removed by filtration. The pH will be then adjusted to between 6.0 – 9.0 standard units and dissolved contaminants will be removed in a separate bank of up to ten Mersorb vessels. The treated wastewater will be discharged as Outfall #002, inside the new GWTP. The sampling location for Outfall #002 is a valved sample point inside the new treatment building, just prior to combining with the other water streams at Outfall #001.

a. Regulatory authority- On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and permit #ME000639 (same as the NPDES permit number) will be utilized as the primary reference number for the former HoltraChem facility.

b. Regulatory history – Relevant regulatory actions for the former HoltraChem facility include, but are not limited to, the following;

December 21, 1971 - Sobin Chlor-Alkali, Inc. filed a document, *Registration For The Discharge of Mercury and Mercury Compounds Into Waters Of The State* with the State of Maine's Environmental Improvement Commission. The document (registration #Hg 8) stated that between July 15 and December 21, 1971, the manufacturing facility in Orrington had discharged a minimum and maximum concentrations of elemental mercury of 2.2 ug/L and 14 ug/L respectively. The document also indicated that those minimum and maximum concentrations resulted in mass discharges ranging from 0.087 lbs/day to 0.348 lbs/day respectively, based on a maximum discharge flow rate of 4.6 million gallons per day.

2. PERMIT SUMMARY

October 13, 1976 - The Department issued WDL #1048 to IMC Chemical Group, Inc. which authorized the discharge of waste waters containing mercury.

June 30, 1977 - The Department amended WDL #1048. The licensee requested the modification to cover a major expansion and production increase at the facility. The monthly average and daily maximum mass limitations for mercury remained the same as the 10/13/76 WDL.

October 22, 1980 - The Department amended WDL #1048 to remove the limitations and monitoring requirements for sodium chlorate and sodium dichromate.

October 28, 1981 - The Department issued a renewal of WDL #1048 in the name of LCP Chemicals - Maine, Inc. Mercury limitations were carried forward from the 10/13/76 licensing action.

July 14, 1982 - The Department modified WDL #1048 by eliminating the monitoring requirement for suspended solids but retained the suspended solids limitation.

December 13, 1989 - LCP, Inc. entered into a Consent Agreement with the Board of Environmental Protection and Maine Attorney General's office to resolve violations of LCP's water Discharge License. The Consent Agreement required LCP to pay a monetary penalty and implement corrective measures and improvements of its waste water treatment facility including the requirement for a Spill Prevention and Countermeasure Control (SPCC) plan; the design of a final effluent treatment system to adjust and continuously monitor for pH and collect flow-proportional effluent samples and record daily total flow discharged.

May 3, 1990 - The U.S. Environmental Protection Agency (EPA) issued a public notice draft National Pollutant Discharge Elimination System (NPDES) permit #ME0000639.

May 17, 1990 - The Department issued WDL #W001048-44-B-R to LCP Chemicals carrying forward all the license limits and monitoring requirements of the 10/28/81 license.

June 18, 1990 - Pursuant to Section 401 of the Clean Water Act (CWA), the Department issued a water quality certification for public notice draft NPDES permit #ME0000639, dated 5/30/90.

July 2, 1990 - The EPA issued NPDES permit #ME0000639 to LCP Chemicals.

April 26, 1993 - LCP Chemicals submitted a letter to EPA requesting a modification of NPDES permit #ME0000639. The permittee requested a change in reporting whole effluent toxicity (WET) test results from an endpoint of LC50 to an endpoint of no observed effect concentration (NOEC). In addition, the permittee requested that Outfall #003 (storm water) be removed from the permit and be covered under a General StormWater Permit.

2. PERMIT SUMMARY (cont'd)

April 11, 1994 - The HMC filed an application with the Department to transfer WDL #W001048-44-B-R from LCP Chemicals to the HMC.

June 17, 1994 - The Department issued Order #W001048-44-B-T transferring WDL #W001048-44-B-R to the HMC.

December 28, 1994 - The Department issued a letter to EPA supporting HMC's permit modification request of 4/26/93.

January 1995 - The HMC submitted an application to the EPA for renewal of NPDES permit #ME0000639.

April 5, 1995 - The EPA issued a public notice draft permit modification of NPDES permit #ME0000639. The modification approved the permittee's request of 4/26/93.

April 28, 1995 - The HMC submitted an application to the Department for the renewal of WDL #W001048-44-B-R.

May 25, 1995 - The EPA issued an administrative modification of NPDES permit #ME0000639 by issuing a new cover page with a name change for the permit to reflect the fact that HMC purchased LCP Chemicals.

June 7, 1995 - The EPA deemed HMC's 1/95 application submission for the renewal of NPDES permit #ME0000639 complete for processing.

June 14, 1995 - The HMC issued a letter to EPA withdrawing the portion of the 4/26/93 permit modification that sought to have Outfall #003 (storm water) covered under a General Storm Water permit. The withdrawal resulted from the fact that random sampling of the outfall by EPA personnel in the spring of 1995 indicated that detectable levels of mercury were present in the discharge.

June 28, 1995 - The Department issued a Section 401 water quality certification, with conditions, of the 4/5/95 NPDES permit modification.

June 29, 1995 - The EPA issued a permit modification of NPDES permit #ME0000639. The modification changed the name from LCP Chemicals to HMC and deleted WET limits and replaced them with a once per year reporting requirement.

August 8, 1995 - A meeting between HoltraChem personnel, HoltraChem's consultant and legal counsel, Department personnel and an attorney from the State's Attorney's General Office was held in the Department's Southern Maine Regional Office to discuss a strategy for permitting/licensing Outfall #003 in the pending permit/license renewals. All parties agreed that in light of the then current Maine law, 38 M.R.S.A., §420(1) prohibiting new discharges of mercury, the discharge of detectable levels of mercury via Outfall #003 would best be managed/regulated under the on-going federal Resource Conservation Recovery Act (RCRA) Corrective Action Program.

2. PERMIT SUMMARY (cont'd)

August 24, 1995 - The HMC's legal counsel issued a letter to the Department confirming the agreement from the 8/8/95 meeting and the company's commitment to address the discharge of mercury from Outfall#003 under the RCRA Corrective Action Process.

August 28, 1996 - The Department issued a letter to the HMC stating that based on five quarterly Whole Effluent Toxicity (WET) tests and five chemical specific (priority pollutant) tests conducted in 1995 and 1996, no reasonable potential to violate water quality criteria existed for the effluent discharged from Outfall #001.

April 9, 1997 - Pursuant to Section 308 of the Clean Water Act, the EPA issued a letter to the HMC requesting additional information regarding dry weather and wet weather sampling for mercury at Outfall #003.

May 1, 1997 - The HMC submitted a letter to the Department and EPA proposing to accept lower monthly average and daily maximum license/permit limitations for mercury based on a statistical past demonstrated performance evaluation of the process waste water effluent data for 1994-1996.
June 1997 - The State legislature enacted a law that amended Maine law 38 M.R.S.A., Section 420 regarding the discharges of mercury. The law established more stringent limitations for the discharge of mercury and a compliance schedule to meet the new limits for certain facilities meeting specific criteria.

December 1997 - The HMC and the Department entered into an Administrative Consent Agreement and Enforcement Order to resolve violations of HMC's water discharge license and discharges of hazardous waste without a license.

June 1999 - The State legislature enacted a law that amended Maine law 38 M.R.S.A. Section 420 regarding the discharges of mercury. The law required the Department to propose new water quality standards for mercury- and required the Department to establish interim discharge limitations and pollution prevention plans for facilities discharging mercury.

September 15, 1999 - Per a request by the Department, the HMC submitted additional information (a supplement to the 4/28/95 WDL application) on a new waste water treatment facility.

April 10, 2000 – The Department issued WDL #W001048-5N-C-R, to HoltraChem Manufacturing Company LLC with an expiration date of December 31, 2003.

December10, 2003 – Mallinckrodt Inc. submitted a timely and complete application to the Department to renew the WDL issued on April 10, 2000.

2. PERMIT SUMMARY (cont'd)

November 24, 2008 – The Department issued a Compliance Order to United States Surgical Corporation and Mallinckrodt designating the former HoltraChem site in Orrington, Maine as an Uncontrolled Hazardous Substance Site. In general, the Order required Mallinckrodt to submit to the Department for review and approval; 1) a Dismantling Plan, 2) a Corrective Measures Implementation Plan, 3) a modification to the existing Sediment Prevention Plan, and 4) a revised Comprehensive Monitoring Plan. The Order also required continued operation of the wastewater treatment plant and groundwater collections systems.

December 19, 2008 – Mallinckrodt filed an appeal with the Board of Environmental Protection (BEP) of the Compliance Order issued by the Department on November 24, 2008.

August 19, 2010 – The BEP issued an Order of Appeal that modified the terms and conditions of the Department Compliance order issued on November 24, 2008.

September 17, 2010 – Mallinckrodt filed a Petition For Review of Final Agency Action (M.R.CIV.P.80C) With Independent Claim For Relief with the Superior Court in Bangor, Maine.

October 3, 2011 – Mallinckrodt amended its December 2003 application for WDL renewal by submitting a copy of a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, dated August 19, 2011. The report contained the design basis for a new waste water treatment system to be constructed by July 2012, to treat all contaminated surface and ground waters that are collected pursuant to the BEP Order of Appeal dated August 19, 2010.

3. CONDITIONS OF PERMIT

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

3. CONDITIONS OF PERMIT (cont'd)

Maine law 38 M.R.S.A. §414-A(1)(D). *Conditions of Licenses* states " *The department shall issue a license for the discharge of any pollutants only if it finds that the discharge will be subject to effluent limitations that require application of the best practicable treatment. "Effluent limitations" means any restriction or prohibition including, but not limited to, effluent limitations, standards of performance for new sources, toxic effluent standards and other discharge criteria regulating rates, quantities and concentrations of physical, chemical, biological and other constituents that are discharged directly or indirectly into waters of the State. "Best practicable treatment" means the methods of reduction, treatment, control and handling of pollutants, including process methods, and the application of best conventional pollutant control technology or best available technology economically achievable, for a category or class of discharge sources that the department determines are best calculated to protect and improve the quality of the receiving water and that are consistent with the requirements of the Federal Water Pollution Control Act, as amended, and published in 40 Code of Federal Regulations. If no applicable standards exist for a specific activity or discharge, the department must establish limits on a case-by-case basis using best professional judgment, after consultation with the applicant and other interested parties of record. In determining best practicable treatment for each category or class, the department shall consider the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge and the economic feasibility of such alternatives. "*

Maine law, 38 M.R.S.A. §420(1-B) *Certain deposits and discharges prohibited*, states in part *"No person, firm, corporation or other legal entity shall place, deposit, discharge or spill, directly or indirectly, into the ground water, inland surface waters or tidal waters of this State, or on the ice thereof, or on the banks thereof so that the same may flow or be washed into such waters, or in such manner that the drainage therefrom may flow into such waters, any of the following substances:*

Mercury - Facilities discharging mercury into the waters of the State shall make reasonable progress to develop, incorporate and continuously improve pollution prevention practices, and implement economically achievable future improvements in wastewater technology, in order to reduce their dependence upon mercury products, reduce or remove discharges of mercury over time, and help in the restoration of the waters of the State. This subsection establishes ambient water quality criteria for mercury that identify that level of mercury considered safe for human health and the environment.

A. The ambient criteria for mercury are as follows:

(1) Ambient water quality criteria for aquatic life:

(a) Freshwater acute: 1.7 micrograms per liter;
(b) Freshwater chronic: 0.91 micrograms per liter;
(c) Saltwater acute: 2.1 micrograms per liter; and
(d) Saltwater chronic: 1.1 micrograms per liter; and

(2) Fish tissue residue criterion for human health: 0.2 milligrams per kilogram in the edible portion of fish.

3. CONDITIONS OF PERMIT (cont'd)

B. A facility is not in violation of the ambient criteria for mercury if:

(1) The facility is in compliance with an interim discharge limit established by the department pursuant to section 413, subsection 11; or

(2) The facility is in compliance with a remediation or corrective action plan, license or order approved either by the department pursuant to section 1301, 1304, 1319, 1364 or 1365, or by the United States Environmental Protection Agency under federal law with the concurrence of the department. "

4. RECEIVING WATER STANDARDS

Maine law, 38 M.R.S.A., Section 467(7)(A)(6) indicates the Penobscot River main stem, from the Maine Central Railroad bridge in Bangor to a line extended in an east-west direction from the confluence of Reeds Brook in Hampden, is classified as a Class B waterway. The Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained. Maine law, 38 M.R.S.A., Section 465(3) describes standards for classification of Class B waters as follows;

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

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of Escherichia coli bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures.

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

5. RECEIVING WATER CONDITIONS

Table Category 5-D entitled, *Rivers and Streams Impaired By Legacy Pollutants* , in a document entitled, 2010 Maine Integrated Water Quality Report, [referred to as the 305(b) report] published by the Department states the designated use of fishing (consumption) is impaired in a ten mile segment of the Penobscot River between the Veazie Dam and Reed Brook due to the presence of PCBs in fish tissue. The Department is not aware of any information that indicates the discharge from the Mallinckrodt waste water treatment facility is causing or contributing to the impairment.

In addition, the Report lists all freshwaters in Maine in "*Category 4-A: Rivers and Streams With Impaired Use, TMDL Completed.* Impairment in this context refers to the designated use of recreational fishing due to elevated levels of mercury in some fish caused by atmospheric deposition. As a result, the State has established a fish consumption advisory for all freshwaters in Maine. The Report states that a regional scale TMDL has been approved.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #002 (internal waste stream)

In the October 3, 2011, application amendment, the permittee requested the Department establish reporting requirements rather than numeric limitations for all parameters for Outfall #002 as it is an internal waste stream and not the final effluent from the facility. The Department is granting the permittee's request as the final effluent from Outfall #001 is limited and monitored to determine compliance numeric limitations established for Outfall #001. Anti-backsliding is not applicable to Outfall #002 given the limitations established for this outfall in the previous permit were based on an operational manufacturing facility that no longer exists.

a. Flow – The April 10, 2000, WDL (previous WDL hereinafter) established a daily maximum flow limit of 150,000 gpd (0.15 MGD) along with a continuous monitoring requirement. According to the WDL, the daily maximum limit was established based on the design capacity of the waste water treatment system constructed at that time to treat for mercury.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

Flow (DMRs = 25)

Value	Limit (gpd)	Range (gpd)	Mean (gpd)
Daily maximum	150,000	10,000 – 21,000	11,900

In the October 3, 2011, application amendment, the permittee indicated the design basis for the new groundwater treatment system is 60,000 gpd (40 gpm) as an average flow and 86,000 gpd (60 gpm) as a maximum flow. This permitting action is establishing monthly average and daily maximum reporting requirements for flow.

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

OUTFALL #002 (internal waste stream)

b. Mercury (total) - The previous WDL established two tiers of monthly average and daily maximum technology based limitations for total mercury along with a 1/Day monitoring requirement. In addition, the WDL established reporting requirements for the total mass of mercury discharged on a monthly basis and a running cumulative total for the mass discharged for a calendar year.

The Fact Sheet of the April 10, 2000, WDL contained the following italicized text stating the basis for the limitations for mercury – *"Maine law, 38 M.R.S.A., §420, sub-§l-A (June 1999) states "A person, firm, corporation or other legal entity who, on January 1, 1971,was discharging any of the substances mentioned in this subsection in connection with an industrial process shall not be deemed in violation of this subsection if on or before December 31, 1971, filed with the board a statement indicating the amount of the substance so discharged on that date may not be in violation of this subsection as long as any discharge of mercury by that person, firm, corporation or other legal entity is less than 454 grams or one pound per year after January 1, 2000 and less than 45 grams, or 0.1 pounds per year after January 1, 2002. This paragraph of the law is repealed on January 1, 2004." It should be noted that in the HMC's case, these limitations are applicable to the final outfall to the Penobscot River which is designated as Outfall #001 in this license.*

The former owner of the HMC facility filed the proper paperwork with this Department on December 21, 1971.

The previous license did establish monthly average and daily maximum mass limits for Outfall #002 of 0.0456 lbs/day and 0.1048 lbs/day respectively, based on best available technology economically achievable (BAT) production based standards set forth in 40 CFR, Part 415, Subpart F (§415.63). The standards were developed in the 1970's. The new waste water treatment system installed in November of 1999 is expected to treat (by January 1, 2002) waste waters to two to three orders of magnitude (100 - 1000 times) lower than the 1970's BAT standards. Therefore, based on the expected performance of the system and to be consistent with the tiered reductions specified in Section 420 of Maine law, the HMC has voluntarily proposed to accept tiered reductions in the monthly average and daily maximum mass limits.

The monthly average and daily maximum technology based mass limitations for mercury were as follows:

Date	Monthly Average (lbs/day)	Daily Maximum (lbs/day)
Jan. 1, 2000 – Dec. 31, 2001	0.00456	0.01048
Jan. 1, 2002 – Dec. 31, 2003	0.000456	0.001048

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

OUTFALL #002 (internal waste stream)

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

Mercury (DMRs = 25)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	0.000456	0.000001 – 0.00001	0.0000045
Daily maximum	0.001048	0.000004 – 0.000023	0.000015

Mercury (DMRs = 25, 2)

Value	Limit (lbs)	Range (lbs)	Mean (lbs)
Monthly total	Report	0.000053 – 0.000191	0.00014
Annual total	Report	0.001374- 0.002288	0.0018

A review of the data indicates the permittee has been in substantial compliance with the limitations established in the April 10, 2000 permit for Outfall #002. As with flow, this permitting action is eliminating the numeric values and requiring "report" only. In addition, this permitting action is eliminating the limitations and reporting requirements for the total quantity of mercury discharged each month and discharged on an annual basis given the law in which the limitations were based was repealed on January 1, 2004.

c. Total suspended solids (TSS) – The previous licensing action established monthly average and daily maximum technology based limitations of 146 lbs/day and 292 lbs/day along with a 1/Month monitoring requirement. The limits were derived based on best practicable treatment (BPT) production standards set forth in National Effluent Guidelines and Standards (NEGS) as published in 40 Code of Federal Regulations (CFR) Part 415 ~ *Inorganic Chemicals Manufacturing Point Source Category,* Subpart F ~ *Chlor~Alkali Subcategory (Chlorine and Sodium or Potassium Hydroxide Production)* §415.62). The technology based limitations were calculated utilizing a total production figure of 228 tons/day.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

TSS (DMRs = 24)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	146	0.075 – 2.49	0.61
Daily maximum	292	0.075 – 2.49	0.61

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

OUTFALL #002 (internal waste stream)

The manufacturing facility is no longer operational and is not subject to 40 CFR Part 415 limitations and monitoring requirements. In addition, the permittee has demonstrated it has substantially complied with the limitations by reporting values two orders of magnitude below the permit limitations. Given these facts and the fact TSS is not a toxic pollutant, the limitations and monitoring requirements are being eliminated in this permitting action.

d. Total residual chlorine (TRC) – The previous licensing action established monthly average and daily maximum technology based limitations of 0.87 lbs/day and 1.46 lbs/day along with a 1/Month monitoring requirement. The limits were derived based on BPT production standards set forth in NEGS as published in 40 CFR, Part 415, Subpart F, §415.62. The technology based limitations were calculated utilizing a total production figure of 228 tons/day.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

TRC (DMRs = 25)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	0.87	0 – 0	0
Daily maximum	1.46	0 - 0	0

The manufacturing facility is no longer operational and not subject to 40 CFR Part 415 limitations and monitoring requirements. In addition, the permittee has not detected TRC levels for the past two years. Given these facts, the limitations and monitoring requirements are being eliminated in this permitting action.

e. Temperature –The previous licensing action established a daily maximum temperature limit of 120°F along with a 1/Week monitoring requirement. The Fact Sheet of the WDL indicates the limit was proposed by the permittee in its April 1995 application as a temperature that was representative of treated process waste water discharged from Outfall #002.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates the Department granted the permittee the authority to cease monitoring for temperature shortly after the closure of the manufacturing facility as the process waste water was the source of the heat. As a result, the daily maximum temperature limit and monitoring requirement is being eliminated in this permitting action.

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

OUTFALL #002 (internal waste stream)

f. pH – The previous licensing action established a daily maximum technology based pH range limitation of 6.0 – 9.0 standard units along with a continuous monitoring requirement. The limits were derived based on BPT standard set forth in NEGS as published in 40 CFR, Part 415, Subpart F, §415.62.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

pH (DMRs = 25)

Value	Limit (su)	Low (su)	High (su)
Daily maximum	6.0 – 9.0	6.3	8.6

The manufacturing facility is no longer operational and is not subject to 40 CFR Part 415 limitations and monitoring requirements. However, being that pH adjustment is an integral part of the treatment process for waste waters discharged from Outfall #002, the pH limitations are being carried forward in this permitting action.

Beginning upon issuance of this permit, this permit is establishing monthly average and daily maximum reporting requirements for mass and concentration for a number of additional pollutants. The parameters to be monitored are consistent with the parameters in *Attachment #2, Numeric Media Protection Standards (MPS),* of the November 24, 2008, Compliance Order issued by the Department. The parameters to be monitored on a 1/Quarter basis through March 31, 2014, are as follows; 1,1-dichloroethane, 1,1-dichloroethene, 2,4,5-trichlorophenoxy acetic acid, acetone, bromodichloromethane, bromoform, carbon disulfide, carbon tetrachloride, chloroform, chloropicrin, cis 1,2 dichloroethene, dibromochloromethane, hexachloroethane, manganese, methylene chloride, total cresol, pentachloroethane, tetrachloroethene, trans 1,2-dichloroethene and trichloroethylene.

OUTFALL #001 – Final effluent

g. Flow – The previous WDL established a monthly average flow limit of 150,000 gpd (0.15 MGD) and a daily maximum flow limit of 250,000 gpd (0.25 MGD) along with a continuous monitoring requirement. According to the WDL, the monthly average limit was established based on the design capacity of new waste water treatment system constructed at that time to treat for mercury. The daily maximum flow limit was carried forward from a May 17, 1990, WDL.

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

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

Flow (DMRs = 25)

Value	Limit (gpd)	Range (gpd)	Mean (gpd)
Monthly Average	150,000	9,000 – 19,000	15,640
Daily maximum	250,000	18,000 – 56,000	26,720

In the October 3, 2011, application amendment, the permittee indicated the design basis for the new groundwater treatment system is 60,000 gpd (40 gpm) as an average flow and 86,000 gpd (60 gpm) as a maximum. Therefore, this permitting action is establishing a monthly average flow limit of 60,000 gpd along with a daily maximum reporting requirement.

h. Dilution Factors: Dilution factors associated with the permitted discharge flow of 60,000 gpd (0.060 MGD) from the facility were derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* are calculated as follows:

Modified Acute[(1)] = 814 cfs $\Rightarrow \frac{(814 \text{ cfs})(0.6464) + (0.060 \text{ MGD})}{(0.060 \text{ MGD})} = 8{,}770{:}1$

Acute: 1Q10 = 3,256 cfs $\Rightarrow \frac{(3{,}256 \text{ cfs})(0.6464) + (0.060 \text{ MGD})}{(0.060 \text{ MGD})} = 35{,}079{:}1$

Chronic: 7Q10 =3,830 cfs $\Rightarrow \frac{(3{,}830 \text{ cfs})(0.6464) + (0.060 \text{ MGD})}{(0.060 \text{ MGD})} = 41{,}263{:}1$

Harmonic Mean: = 9,101 cfs $\Rightarrow \frac{(9{,}101 \text{ cfs})(0.6464) + (0.060 \text{ MGD})}{(0.060 \text{ MGD})} = 98{,}049{:}1$

Footnotes:

(1) Chapter 530(4)(a) states that analyses using numeric acute criteria for aquatic life must be based on 1/4 of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone. The 1Q10 is the lowest one day flow over a ten year recurrence interval. The regulation goes on to say that where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design, up to and including all of it. Based on Department information as to the mixing characteristics of the discharge, and a 1997 dye study, the Department has made the determination that the discharge does not receive rapid and complete mixing with the receiving water. Therefore, the default stream flow of 1/4 of the 1Q10 is applicable in acute statistical evaluations pursuant to Department Rule Chapter 530.

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

OUTFALL #001 – Final effluent

Footnotes:

(2) The harmonic mean dilution factor is approximated by multiplying the 7Q10 value by a factor of 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

i. Mercury (Total) – The previous WDL established two tiers of monthly average and daily maximum technology based limitations for total mercury. In addition to the monthly average and daily maximum mass limitations, the previous WDL established limitations for the total mass of mercury discharged each month as well as annually. The limits were as follows:

Date	Monthly Average (lbs/day)	Daily Maximum (lbs/day)
Jan. 1, 2000 – Dec. 31, 2001	0.00456	0.01048
Jan. 1, 2002 – Dec. 31, 2003	0.000456	0.001048

Date	Monthly mass (lbs)	Annual mass (lbs)
Jan. 1, 2000 – Dec. 31, 2001	Report	1.0
Jan. 1, 2002 – Dec. 31, 2003	Report	0.1

The Fact Sheet of the April 10, 2000, WDL contained the following italicized text stating the basis for the limitations for mercury - *As with internal Outfall #002, the previous license did establish monthly average and daily maximum mass limits for Outfall #001 of 0.0456 lbs/day and 0.1048 lbs/day respectively, based on best available technology economically achievable (BAT) production based standards set forth in 40 CFR, Part 415, Subpart F (§415.63). However, Maine law, 38 M.R.S.A., §420, sub-§l-A (June 1999) imposes annual quantity limits as well. To be consistent with the reduction in limits for Outfall #002, the HMC has voluntarily proposed to accept a tiered reduction in the monthly average and daily maximum mass limits for Outfall #001 as follows:*

	Monthly Avg. lbs/day	*Daily Max. lbs/day*	*Annual Total lbs/year*
1/01/00 - 12/31/01	*0.00456*	*0.01048*	*1.0*
1/01/02 - 12/31/03	*0.000456*	*0.001048*	*0.1*

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

OUTFALL #001 – Final effluent

To gain a perspective on the concentrations being discharged, the Department back-calculated the concentration utilizing the flows and mass of mercury cited above. The calculations are as follows:

Monthly Average: $\frac{0.000456 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 0.0009 \text{ mg/L or } 0.9 \text{ ug/L}$

Daily Maximum: $\frac{0.001048 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 0.0021 \text{ mg/L or } 2.1 \text{ ug/L}$

The source of the waste water being treated at the facility now, and in the near future, is predominately ground water and storm water and not process waste waters from a manufacturing facility. Therefore, the facility is no longer subject to BAT production standards found at 40 CFR Part 415, Subpart F or Maine law, 38 M.R.S.A., §420, sub-§l-A that established annual limitations as it was repealed in January 2004.

Therefore, the Department must rely on; 1) Federal regulation 40 CFR, §122(l) that contains the criteria for what is often referred to as the anti-backsliding provisions of the Federal Water Pollution Control Act (Clean Water Act), 2) applicable sections of Maine law 38 M.R.S.A §420(1-B) or 3) other final agency actions issued by the Department.

1. Antibacksliding - Federal regulation 40 CFR, §122(l) states in general, the regulation states that except for provisions specified in the regulation, effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit. Applicable exceptions include (a) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation (b) a permittee has installed best practicable treatment but has been unable to achieve compliance with technology based limitations and (c) information is available which was not available at the time of the permit issuance (other than revised regulations, guidance or test methods) and which would justify the application of less stringent effluent limitations at the time of permit issuance.

   Therefore, in keeping with antibacksliding provisions, the monthly average and daily maximum mass limits of 0.000456 lbs/day and 0.001048 lbs/day respectively, established in the previous licensing action are to be taken into consideration in deriving applicable limitations in this permitting action. It is noted the permittee has been in compliance with said technology based mass limitations.

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

OUTFALL #001 – Final effluent

2. Best practicable treatment - Maine 38 M.R.S.A §420(1-B) states, *Facilities discharging mercury into the waters of the State shall make reasonable progress to develop, incorporate and continuously improve pollution prevention practices, and implement economically achievable future improvements in wastewater technology, in order to reduce their dependence upon mercury products, reduce or remove discharges of mercury over time, and help in the restoration of the waters of the State.*

   On September 12, 2011, the Department conducted a statistical evaluation of the monthly average and daily maximum flow and mercury data reported to the Department on monthly DMRs for the three-year period May 2009 – May 2011 to determine the 99% confidence level. The results were as follows:

	Monthly Average	Daily Maximum
Flow	18,400 gpd	37,700 gpd
Mercury (total)	0.000024 lbs/day	0.00015 lbs/day

   To gain a perspective on the concentrations being discharged, the Department back-calculated the concentration utilizing the flows and mass of mercury cited above. The calculations are as follows:

   Monthly Average: $\frac{0.000024 \text{ lbs/day}}{(0.018400 \text{ MGD})(8.34 \text{lbs/gal})} = 0.00016$ mg/L or 0.16 ug/L

   Daily Maximum: $\frac{0.00015 \text{ lbs/day}}{(0.03770 \text{ MGD})(8.34 \text{ lbs/gal})} = 0.00048$ mg/L or 0.48 ug/L

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt designating the former HoltraChem site in Orrington, Maine as an Uncontrolled Hazardous Substance Site. In general, the Order required Mallinckrodt to submit to the Department for review and approval; 1) a Dismantling Plan, 2) a Corrective Measures Implementation Plan, 3) a modification to the existing Sediment Prevention Plan, and 4) a revised Comprehensive Monitoring Plan. The Order also required the continued operation of the wastewater treatment plant and groundwater collections systems. Mallinckrodt appealed the Compliance Order to the Board of Environmental Protection (BEP). On August 19, 2010, the BEP issued an Order of Appeal that modified the terms and conditions of the Department's November 24, 2008, Compliance Order. Mallinckrodt appealed the BEP's Order of Appeal to Superior Court which is still pending as of the date of this permitting action. Therefore, the terms and conditions of the BEP are in effect and enforceable until resolution in Superior Court.

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

OUTFALL #001 – Final effluent

As it relates to the discharge of mercury, the Department's Compliance Order (page 35, paragraph 7) states in part "*Mallinckrodt may not petition the Commissioner for the termination of the groundwater collection and treatment system until any plume of contaminants in groundwater on the site and any plume of contaminations that emanate from the Site following the discontinuance of the pump and treat system has reached the Media Protection Standards (MPS) specified in this Order.*" Attachment #2, Numeric Media Protection Standards (MPS), lists the on-site surface water MPS for mercury as 0.91 ug/L. It is noted the 0.91 ug/L value is listed in Maine law 38 M.R.S.A. §420(1-B)(A)(1)(b) as the fresh water chronic ambient water quality criteria (AWQC) for mercury. Chronic AWQC values are utilized to establish monthly average limitations in MEPDES permits. The Compliance Order did not address the acute AWQC utilized to establish daily maximum limitations in MEPDES permits.

The BEP Order of Appeal (page 44, Paragraph E) states in part, "*Therefore, discharge limits should be established based on both concentration of the contaminant and the mass of the contaminant. Wastewater discharges shall be monitored in such a fashion as to measure continuously the liquid volume rate of discharge, and at least once daily the amount of mercury and other parameters with set discharge limits. The wastewater discharge limits should be set in terms of both concentration and maximum daily and monthly average mass discharge limit for mercury, carbon tetrachloride, trichloroethylene, chloropicrin and other contaminates of concern as the Department deems necessary.*"

To address the BEP's directive to establish monthly average and daily maximum mass and concentration limits for mercury and to be consistent with the Department's use of the chronic AWQC in Maine law 38 M.R.S.A.§420(1-B)(A)(1)(b) to establish monthly average limits, this permit is using the acute AWQC of 1.7 ug/L found in Maine law 38 M.R.S.A.§420(1-B)(A)(1)(a) to evaluate establishing daily maximum limitations for mercury.

Therefore, utilizing the AWQC cited above and a monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for mercury can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.00091 mg/L) = 0.00046 lbs/day

Daily maximum: (0.060 MGD)(8.34 lbs/gal)(0.0017 mg/L) = 0.00085 lbs/day

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

OUTFALL #001 – Final effluent

In summary, the three different scenarios evaluated to establish mass and concentration limits for mercury in this permit are as follows:

Methodology	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Antibacksliding	0.000456	0.001048	0.9	2.1
Statistical Evaluation of BPT*	0.000024	0.00015	0.16	0.48
MPS/AWQC	0.00046	0.00085	0.91	1.7

* It is noted the flows in this scenario were based on 18,400 gpd or a flow that is 3.3 times lower than what was used in the other two scenarios (60,000 gpd).

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentration limits for total mercury to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Mercury (total)	0.00046	0.00085	0.91	1.7

For the rest of the parameters regulated by this permit [Section 6(j) – 6(dd)] the Department evaluated the same three criteria as mercury, 1) anti-backsliding provisions of the Clean Water Act, 2) applicable statutes and rules regarding establishing limitations for toxic pollutants and 3) other final agency actions issued by the Department. The monthly average and daily maximum concentration limits established in this permit for said parameters were established based on the most stringent limitations after taking into consideration the three criteria. The evaluations indicate the Media Protection Standards (MPS) established in *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department on November 24, 2008 are the most stringent for each parameter. As for mass limits, 06-096 CMR Chapter 523, §6(f)(1) states, "*All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass.*" To be consistent with all other MEPDES permits issued by the Department, the monthly average design flow for the facility is used to calculate mass limits. Therefore, the mass limits for the parameters of concern are based on the formula of monthly average design flow expressed in million gallons per day (MGD) times the applicable concentration limit expressed in milligrams per liter (mg/L) times a conversion factor of 8.34 pounds per gallon (lbs/gal).

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

OUTFALL #001 – Final effluent

j. 1,1-Dichloroethane The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for 1,1-dichloroethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for 1,1 dichloroethane.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 1,1-dichloroethane as 70 ug/L. However on October 19, 2012, the Maine Center of Disease Control and Prevention (MCDC) in the Department of Health and Human Services (DHHS) released a revised list of the State's Maximum Exposure Guidelines (MEG). The revised MEG for 1,1-dichloroethane is listed as 60 ug/L. Therefore, utilizing the MEG of 60 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 1,1-dichloroethane can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.060 mg/L) = 0.030 lbs/day

Being as there is no acute AWQC for 1,1-dichloroethane, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for 1,1-dichloroethane to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
1,1-Dichloroethane	0.030	0.030	60	60

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

OUTFALL #001 – Final effluent

k. 1,1-Dichloroethene The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for 1,1-dichloroethene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for 1,1-dichloroethene.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 1,1-dichloroethene as 0.60 ug/L. The MCDC's revised MEG for 1,1-dichloroethene is 40 ug/L. The USEPA MCL for 1,1-dichloroethene in drinking water is 7.0 ug/L. Therefore, utilizing the MCL of 7.0 ug/L since it is more stringent than the MEG of 40 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 1,1-dichloroethene can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.007 mg/L) = 0.0035 lbs/day

Being as there is no acute AWQC for 1,1-dichloroethene, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for 1,1-dichloroethene to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
1,1-Dichloroethene	0.0035	0.0035	7	7

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

OUTFALL #001 – Final effluent

l. Cis-1,2-dichloroethene – The previous licensing action did not establish any limitations for Cis-1,2-dichloroethene and Department rule Chapter 584 does not establish any AWQC for Cis-1,2-dichloroethene.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for Cis-1,2-dichloroethene.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for Cis-1,2-dichloroethene as 70 ug/L. The MCDC's revised MEG for Cis-1,2-dichloroethene is 10 ug/L. Therefore, utilizing the MEG of 10 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for Cis-1,2-dichloroethene can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.010 mg/L) = 0.0005 lbs/day

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for Cis-1,2-dichloroethene to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Cis-1,2-dichloroethene	0.005	0.005	10	10

m. Trans-1,2- Dichloroethene – Department rule Chapter 584 establishes AWQC for trans-1,2-dichloroethene as follows;

Human Health – 5,500 ug/L (organisms only) 140 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for 1,2 trans dichloroethene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

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

OUTFALL #001 – Final effluent

2. Maine laws and Department rules – 06-096 CMR, Department rule Chapter 530, Surface Water Toxics Control Program Pollutants §4(C), states *"The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations."* The Department has no information on the background levels of trans-1,2-dichloroethene in the water column in the Penobscot 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.

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

   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.*

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

OUTFALL #001 – Final effluent

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.

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.

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.

The watershed approach to evaluating limitations for pollutants of concern is applicable to trans-1,2-dichloroethene. The Department is not aware of any other entity discharging trans-1,2-dichloroethene to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for trans-1,2-dichloroethene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 140 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

The Department has calculated a human health assimilative capacity of 5,152 lbs/day of trans-1,2-dichloroethene at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), and critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

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

OUTFALL #001 – Final effluent

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 140 ug/L
140 ug/L(0.75) = 105 ug/L or 0.105 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.105 mg/L) = 5,152 lbs/day

Therefore, the mass segment allocations for trans-1,2-dichloroethene for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of trans-1,2-dichloroethene allocated)
(5,152 lbs/day)(1.0) = 5,152 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{5{,}152 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 10{,}295 \text{ mg/L or } 10{,}295{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for trans-1,2-dichloroethene as 100 ug/L. Therefore, utilizing the MPS of 100 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for trans-1,2-dichloroethene can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.10 mg/L) = 0.050 lbs/day

   Being as there is no acute AWQC for trans-1,2-dichloroethene, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for trans-1,2-dichloroethene to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Trans-1,2-dichloroethene	0.050	0.050	100	100

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

OUTFALL #001 – Final effluent

n. 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) – The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for 2,4,5-T in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for 2,4,5 T.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 2,4,5-T as 50 ug/L. The MCDC's revised MEG for 2,4,5-T is 70 ug/L. Therefore, utilizing the MEG of 70 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 2,4,5-T can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.070 mg/L) = 0.035 lbs/day

   Being as there is no acute AWQC for 2,4,5-T the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for 2,4,5-T to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
2,4,5-T	0.035	0.035	70	70

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

OUTFALL #001 – Final effluent

o. Acetone - The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for acetone in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for acetone.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for acetone as 700 ug/L. The MCDC's revised MEG for acetone is 6,000 ug/L. Therefore, utilizing the MEG of 6,000 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for acetone can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(6.00 mg/L) = 3.0 lbs/day

Being as there is no acute AWQC for acetone, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for acetone to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Acetone	3.0	3.0	6,000	6,000

p. Bromodichloromethane (Dichlorobromomethane) - The evaluation for Department rule Chapter 584 establishes AWQC for bromodichloromethane as follows;

Human Health – 9.3 ug/L (organisms only) 0.53 ug/L (water & organisms)

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

OUTFALL #001 – Final effluent

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for bromodichloromethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules - The watershed approach to evaluating limitations for pollutants of concern is applicable to bromodichloromethane. The Department is not aware of any other entity discharging bromodichloromethane to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for bromodichloromethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.53 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 20 lbs/day of bromodichloromethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 0.53 ug/L
0.53 ug/L(0.75) = 0.40 ug/L or 0.00040 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.0004 mg/L) = 19.6 or 20 lbs/day

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

Monthly average: (Human health AC mass)(% of bromodichloromethane allocated)
(20 lbs/day)(1.0) = 20 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{20 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 40 \text{ mg/L or } 40{,}000 \text{ ug/L}$$

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

OUTFALL #001 – Final effluent

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for bromodichloromethane as 6 ug/L. Therefore, utilizing the MPS of 6 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for bromodichloromethane can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.006 mg/L) = 0.0030 lbs/day

   Being as there is no acute AWQC for bromodichloromethane, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for bromodichloromethane to be consistent with the Department's November 24, 2008, Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Bromodichloromethane	0.003	0.003	6	6

q. Bromoform – Department rule Chapter 584 establishes AWQC for bromoform as follows;

Human Health – 73 ug/L (organisms only) 4.2 ug/L (water & organisms)

As with mercury, the Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for bromoform in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to bromoform. The Department is not aware of any other entity discharging bromoform to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for bromoform to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 4.2 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

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

OUTFALL #001 – Final effluent

The Department has calculated a human health assimilative capacity of 154 lbs/day of bromoform at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 4.2 ug/L
4.2 ug/L(0.75) = 3.15 ug/L or 0.00315 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00315 mg/L) = 154 lbs/day

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

Monthly average: (Human health AC mass)(% of bromoform allocated)
(154 lbs/day)(1.0) = 154 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{154 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 309 \text{ mg/L or } 309{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for bromoform as 44 ug/L. The MCDC's revised MEG for bromoform is 40 ug/L. Therefore, utilizing the MEG of 40 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for bromoform can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.040 mg/L) = 0.020 lbs/day

Being as there is no acute AWQC for bromoform, the daily maximum limits are the same as the monthly average limits.

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

OUTFALL #001 – Final effluent

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for bromoform to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Bromoform	0.020	0.020	40	40

r. Carbon disulfide The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for carbon disulfide in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for carbon disulfide.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for Carbon disulfide as 600 ug/L. Therefore, utilizing the MPS of 600 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for carbon disulfide can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.600 mg/L) = 0.30 lbs/day

   Being as there is no acute AWQC for carbon disulfide, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for carbon disulfide to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Carbon disulfide	0.30	0.30	600	600

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

OUTFALL #001 – Final effluent

s. Carbon tetrachloride – Department rule Chapter 584 establishes AWQC for carbon tetrachloride as follows;

0.89 ug/L (organisms only) 0.23 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for carbon tetrachloride in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to carbon tetrachloride. The Department is not aware of any other entity discharging carbon tetrachloride to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire assimilative capacity for carbon tetrachloride to Mallinckrodt. Being that a designated use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.23 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 8.3 lbs/day of carbon tetrachloride at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 0.23 ug/L
   0.23 ug/L(0.75) = 0.17 ug/L or 0.00017 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00017 mg/L) = 8.3 lbs/day

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

   Monthly average: (Human health AC mass)(% of carbon tetrachloride allocated)
   (8.3 lbs/day)(1.0) = 8.3 lbs/day

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

OUTFALL #001 – Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{8.3 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 17 \text{ mg/L or } 17{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for carbon tetrachloride as 3.0 ug/L. The MCDC's revised MEG for carbon tetrachloride is 5.0 ug/L. Therefore, utilizing the MEG of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for carbon tetrachloride can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

   Being as there is no acute AWQC for carbon tetrachloride, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for carbon tetrachloride to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Carbon tetrachloride	0.0025	0.0025	5	5

t. Chloroform – Department rule Chapter 584 establishes AWQC for chloroform as follows;

Human Health – 94 ug/L (organisms only) 5.4 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for chloroform in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

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

OUTFALL #001 – Final effluent

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to chloroform. The Department is not aware of any other entity discharging chloroform to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for chloroform to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 5.4 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 199 lbs/day for chloroform at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 5.4 ug/L
   5.4 ug/L(0.75) = 4.05 ug/L or 0.00405 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00405 mg/L) = 199 lbs/day

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

   Monthly average: (Human health AC mass)(% of chloroform allocated)
   (199 lbs/day)(1.0) = 199 lbs/day

   The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{199 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 397 \text{ mg/L or } 397{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for chloroform as 57 ug/L. The MCDC's revised MEG for chloroform is 70 ug/L. Therefore, utilizing the MEG of 70 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for chloroform can be calculated as follows:

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

OUTFALL #001 – Final effluent

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.070 mg/L) = 0.035 lbs/day

Being as there is no acute AWQC for chloroform, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for chloroform to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Chloroform	0.035	0.035	70	70

u. Chloropicrin (trichloronitromethane) – The previous licensing action did not establish any limitations for chloropicrin and Department rule Chapter 584 does not establish any AWQC for chloropicrin.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for chloropicrin.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for chloropicrin as 30 ug/L. Therefore, utilizing the MPS of 30 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for chloropicrin can be calculated as follows:

   Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.030 mg/L) = 0.015 lbs/day

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for chloropicrin to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Chloropicrin	0.015	0.015	30	30

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

OUTFALL #001 – Final effluent

v. Dibromochloromethane – Department rule Chapter 584 establishes AWQC for dibromochloromethane as follows;

Human Health – 6.94 ug/L (organisms only) 0.4 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for dibromochloromethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to dibromochloromethane. The Department is not aware of any other entity discharging dibromochloromethane to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for dibromochloromethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.4 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 15 lbs/day for dibromochloromethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 0.4 ug/L
   0.4 ug/L(0.75) = 0.30 ug/L or 0.00030mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00030 mg/L) = 15 lbs/day

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

   Monthly average: (Human health AC mass)(% of dibromochloromethane allocated)
   (15 lbs/day)(1.0) = 15 lbs/day

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

OUTFALL #001 – Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{15 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 30 \text{ mg/L or } 30{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for dibromochloromethane as 4 ug/L. Therefore, utilizing the MPS of 4 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for dibromochloromethane can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.002 lbs/day

   Being as there is no acute AWQC for dibromochloromethane, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for dibromochloromethane to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Dibromochloromethane	0.002	0.002	4	4

w. Hexachloroethane – Department rule Chapter 584 establishes AWQC for hexachloroethane is as follows;

Human Health – 1.78 ug/L (organisms only) 1.04 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for hexachloroethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

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

OUTFALL #001 – Final effluent

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to hexachloroethane. The Department is not aware of any other entity discharging hexachloroethane to the Penobscot River. Therefore, if appropriate, the Department would-allocate the entire human health assimilative capacity for hexachloroethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 1.04 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 38 lbs/day of hexachloroethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 1.04 ug/L
   1.04 ug/L(0.75) = 0.78 ug/L or 0.00078 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00078 mg/L) = 38 lbs/day

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

   Monthly average: (Human health AC mass)(% of hexachloroethane allocated)
   (38 lbs/day)(1.0) = 38 lbs/day

   The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{38 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 76 \text{ mg/L or } 76{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for hexachloroethane as 7.0 ug/L. The MCDC's revised MEG for hexachloroethane is 5 ug/L. Therefore, utilizing the MEG of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for hexachloroethane can be calculated as follows:

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

OUTFALL #001 – Final effluent

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

Being as there is no acute AWQC for hexachloroethane, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for hexachloroethane to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Hexachloroethane	0.0025	0.0025	5	5

x. Manganese (Total) - Department rule Chapter 584 establishes AWQC for manganese is as follows;

Human Health – 100 ug/L (organisms only)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for manganese in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to manganese. The Department is not aware of any other entity discharging manganese to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for manganese to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for organisms only of 100 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 36,798 lbs/day of manganese at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

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

OUTFALL #001 – Final effluent

Human heath (organisms only)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 100 ug/L
100 ug/L(0.75) = 75 ug/L or 0.075 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.075 mg/L) = 3,680 lbs/day

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

Monthly average: (Human health AC mass)(% of manganese allocated)
(3,680 lbs/day)(1.0) = 3,680 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{3{,}680 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 7{,}354 \text{ mg/L or } 7{,}354{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for manganese as 500 ug/L. Therefore, utilizing the MPS of 500 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for manganese can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.50 mg/L) = 0.25 lbs/day

   Being as there is no acute AWQC for manganese, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for manganese to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Manganese	0.25	0.25	500	500

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

OUTFALL #001 – Final effluent

y. Methylene chloride – Department rule Chapter 584 establishes AWQC for methylene chloride is as follows;

Human Health – 320 ug/L (organisms only) 4.6 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for methylene chloride in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to methylene chloride. The Department is not aware of any other entity discharging methylene chloride to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for methylene chloride to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 4.6 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 169 lbs/day of methylene chloride at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 4.6 ug/L
   4.6 ug/L(0.75) = 3.45 ug/L or 0.00345 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00345 mg/L) = 169 lbs/day

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

   Monthly average: (Human health AC mass)(% of methylene chloride allocated)
   (169 lbs/day)(1.0) = 169 lbs/day

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

OUTFALL #001 – Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{169 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 338 \text{ mg/L or } 338{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for methylene chloride as 5.0 ug/L. Therefore, utilizing the MPS of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for methylene chloride can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

   Being as there is no acute AWQC for methylene chloride, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for methylene chloride consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Methylene chloride	0.0025	0.0025	5	5

z. Cresol (total) – The previous licensing action did not establish any limitations for total cresol and Department rule Chapter 584 does not establish any AWQC for total cresol.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for total-cresol.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for p-cresol as 3.5 ug/L and m-cresol as 35 ug/L. The MCDC's revised MEGs for p-cresol and m-cresol are 4.0 ug/L and 40 ug/L respectively. Therefore, utilizing the more stringent MEG of 4.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for total cresol can be calculated as follows:

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

OUTFALL #001 – Final effluent

Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.002 lbs/day

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for total cresol to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Total cresol	0.002	0.002	4	4

aa. Pentachloroethane – The previous licensing action did not establish any limitations for pentachloroethane and Department rule Chapter 584 does not establish any AWQC for pentachloroethane.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for pentachloroethane.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for pentachloroethane as 13 ug/L. Therefore, utilizing the MPS of 13 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for pentachloroethane can be calculated as follows:

   Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.013 mg/L) = 0.0065 lbs/day

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for pentachloroethane to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Pentachloroethane	0.0065	0.0065	13	13

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

OUTFALL #001 – Final effluent

bb. Tetrachloroethene – Department rule Chapter 584 establishes AWQC for tetrachloroethene is as follows;

Human Health – 1.77 ug/L (organisms only) 0.59 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for tetrachloroethene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to tetrachloroethene. The Department is not aware of any other entity discharging tetrachloroethene to the Penobscot River.

   Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for tetrachloroethene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.59 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated a human health assimilative capacity of 22 lbs/day of tetrachloroethene at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

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

OUTFALL #001 – Final effluent

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 0.59 ug/L
0.59 ug/L(0.75) = 0.44 ug/L or 0.00044 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00044 mg/L) = 22 lbs/day

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

Monthly average: (Human health AC mass)(% of tetrachloroethene allocated)
(22 lbs/day)(1.0) = 22 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{22 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 44 \text{ mg/L or } 44{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for tetrachloroethene as 5.0 ug/L. Therefore, utilizing the MPS of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for tetrachloroethene can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

Being as there is no acute AWQC for tetrachloroethene, the daily maximum limits are the same as the monthly average limits.

After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for tetrachloroethene to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Tetrachloroethene	0.0025	0.0025	5	5

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

OUTFALL #001 – Final effluent

cc. Trichloroethylene – Department rule Chapter 584 establishes AWQC for trichloroethylene as follows;

Acute – 21,900 ug/L Chronic – 45,000 ug/L
Human Health – 16.2 ug/L (organisms only) 2.37 ug/L (water & organisms)

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for trichloroethylene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous licensing action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to trichloroethylene. The Department is not aware of any other entity discharging trichloroethylene to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire acute, chronic or human health assimilative capacity for trichloroethylene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 2.37 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure.*"

   The Department has calculated acute, chronic and human health assimilative capacities (AC) of 287,913 lbs/day, 697,964 lbs/day and 88 lbs/day respectively, for trichloroethylene at Mallinckrodt. The ACs at Mallinckrodt were calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flows (1Q10 = 3,256 cfs, 7Q10 = 3,830 cfs and harmonic mean = 9,101 cfs). The calculations are as follows:

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

OUTFALL #001 – Final effluent

Acute

1Q10 @ Mallinckrodt = 3,256 cfs or 2,105 MGD
AWQC = 21,900 ug/L
21,900 ug/L(0.75) = 16,425 ug/L or 16.4 mg/L

Acute AC = (2,105 MGD)(8.34 lbs/gal)(16.4 mg/L) = 287,913 lbs/day

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

Daily maximum: (Acute AC mass)(% of trichloroethylene allocated)
(287,913 lbs/day)(1.0) = 287,913 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{287{,}913 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 575{,}370 \text{ mg/L or } 5.75 \times 10^{8} \text{ ug/L}$$

Chronic

7Q10 @ Mallinckrodt = 3,830 cfs or 2,476 MGD
AWQC = 45,000 ug/L
45,000 ug/L(0.75) = 33,750 ug/L or 33.8 mg/L

Chronic AC = (2,476 MGD)(8.34 lbs/gal)(33.8 mg/L) = 697,964 lbs/day

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

Daily maximum: (Chronic AC mass)(% of trichloroethylene allocated)
(697,964 lbs/day)(1.0) = 697,964 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{697{,}964 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 1{,}394{,}813 \text{ mg/L or } 1.4 \times 10^{9} \text{ ug/L}$$

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

OUTFALL #001 – Final effluent

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 2.37 ug/L
2.37 ug/L(0.75) = 1.8 ug/L or 0.0018 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.0018 mg/L) = 88 lbs/day

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

Monthly average: (Human health AC mass)(% of trichloroethylene allocated)
(88 lbs/day)(1.0) = 88 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{88 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 176 \text{ mg/L or } 176{,}000 \text{ ug/L}$$

3. Other final agency actions – *Appendix #3, Surface Water Analysis – Onsite Maximum Concentrations,* of the November 24, 2008, Compliance Order issued by the Department lists the MPS for trichloroethylene as 5.0 ug/L. The MCDC's revised MEG for trichloroethylene is 4.0 ug/L. Therefore, utilizing the MEG of 4.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for trichloroethylene can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.0020 lbs/day

   After taking into consideration the three evaluations, this permitting action is establishing monthly average and daily maximum concentrations limits for trichloroethylene to be consistent with the Department's November 24, 2008, Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Trichloroethylene	0.0020	0.0020	4	4

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

OUTFALL #001 (Final effluent)

dd. Total suspended solids (TSS) – The previous licensing action established monthly average and daily maximum technology based limitations of 146 lbs/day and 292 lbs/day along with a 1/Month monitoring requirement. The limits were derived based on BPT production standards set forth in NEGS as published in 40 CFR Part 415 ~ Inorganic Chemicals Manufacturing Point Source Category, Subpart F ~ Chlor~Alkali Subcategory (Chlorine and Sodium or Potassium Hydroxide Production) §415.62). The technology based limitations were calculated utilizing a total production figure of 228 tons/day.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

TSS (DMRs = 25)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	146	0.29 – 4.2	1.2
Daily maximum	292	0.29 – 4.2	1.2

The manufacturing facility is no longer operational and therefore is not subject to 40 CFR Part 415 limitations and monitoring requirements. In addition, the permittee has demonstrated it has substantially complied with the limitations by reporting values two orders of magnitude below the permit limitations. Given these facts and the fact that TSS is not a toxic pollutant, the limitations and monitoring requirements are being eliminated in this permitting action.

ee. Total residual chlorine (TRC) – The previous licensing action established monthly average and daily maximum technology based limitations of 0.87 lbs/day and 1.46 lbs/day along with a 1/Month monitoring requirement. The limits were derived based on best practicable treatment (BPT) production standards set forth in NEGS as published in 40 CFR, Part 415, Subpart F, §415.62. The technology based limitations were calculated utilizing a total production figure of 228 tons/day.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

TRC (DMRs = 25)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	0.87	0 – 0	0
Daily maximum	1.46	0 - 0	0

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

OUTFALL #001 (Final effluent)

The manufacturing facility is no longer operational and therefore is not subject to 40 CFR Part 415 limitations and monitoring requirements. In addition, the permittee has not detected TRC levels for the past two years. Given these facts, the limitations and monitoring requirements are being eliminated in this permitting action.

ff. Temperature –The previous licensing action established a daily maximum temperature limit of 120°F along with a 1/Week monitoring requirement. The Fact Sheet of the WDL indicates the limit was proposed by the permittee in its April 1995 application as a temperature that was representative of treated process waste water discharged from Outfall #001.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows:

Temperature (DMRs = 24)

Value	Limit (°F)	Range (°F)	Mean (°F)
Daily maximum	120	51.8 – 71.6	62.6

Given the consistency of the results cited above, the daily maximum temperature limit and monitoring requirement is being eliminated from this permitting action.

gg. pH – The previous licensing action established a daily maximum technology based pH range limitation of 6.0 – 9.0 standard units along with a continuous monitoring requirement. The limits were derived based on BPT standard set forth in NEGS as published in 40 CFR, Part 415, Subpart F, §415.62.

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

pH (DMRs = 25)

Value	Limit (su)	Low (su)	High (su)
Daily maximum	6.0 – 9.0	6.0	8.6

The manufacturing facility is no longer operational and is not subject to 40 CFR Part 415 limitations and monitoring requirements. Being that pH adjustment is an integral part of the treatment process for waste waters discharged from Outfall #001, the pH limitations are being carried forward in this permitting action.

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

OUTFALL #001 (Final effluent)

hh. Whole Effluent Toxicity (WET) & Chemical-Specific Testing – The previous licensing action established surveillance (1/Year) and screening level (1/Quarter) WET and chemical specific testing. Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants* set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET monitoring assesses impacts to 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 IV frequency category as the facility has a chronic dilution factor of >500:1 and a Q ≤1.0 MGD. Chapter 530(1)(D)(1) specifies that routine screening and surveillance level testing requirements are as follows:

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

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

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

OUTFALL #001 (Final effluent)

Surveillance level testing – Beginning upon issuance of the permit and lasting through 12 months prior to permit expiration.

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

Department rule Chapter 530(D)(3)(b) states in part, Dischargers in Levels IV may be waived from conducting surveillance and screening testing for individual WET species or chemicals provided that testing in the preceding 60 months does not indicate any reasonable potential to exceed or exceedence applicable AWQC or critical AWQC thresholds.

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.*"

Statistical evaluation

On April 10, 2006, the Department conducted a statistical evaluation on the most recent 60 months of WET and chemical specific data that indicated the discharge did not exceed or have a reasonable potential (RP) to exceed either the critical acute or chronic AWQC thresholds (0.14% and 0.004%) respectively – mathematical inverse of the applicable dilution factors at that time for any of the WET species of chemical specific parameters tested for said period.

Given the absence of exceedences or reasonable potential to exceed critical WET thresholds or applicable AWQC, the Department issued a license modification that waived surveillance and screening level WET and chemical specific testing. In accordance with Department rule Chapter 530(2)(D)(4) and Special Condition G,
06-096 CMR 530(2)(D)(4) Statement For Reduced/Waived Toxics Testing, of this permit, the permittee must annually submit to the Department a written statement evaluating its current status for each of the conditions listed.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the water body to meet standards for Class B classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the Bangor Daily News newspaper on November 4, 2003. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

9. DEPARTMENT CONTACTS

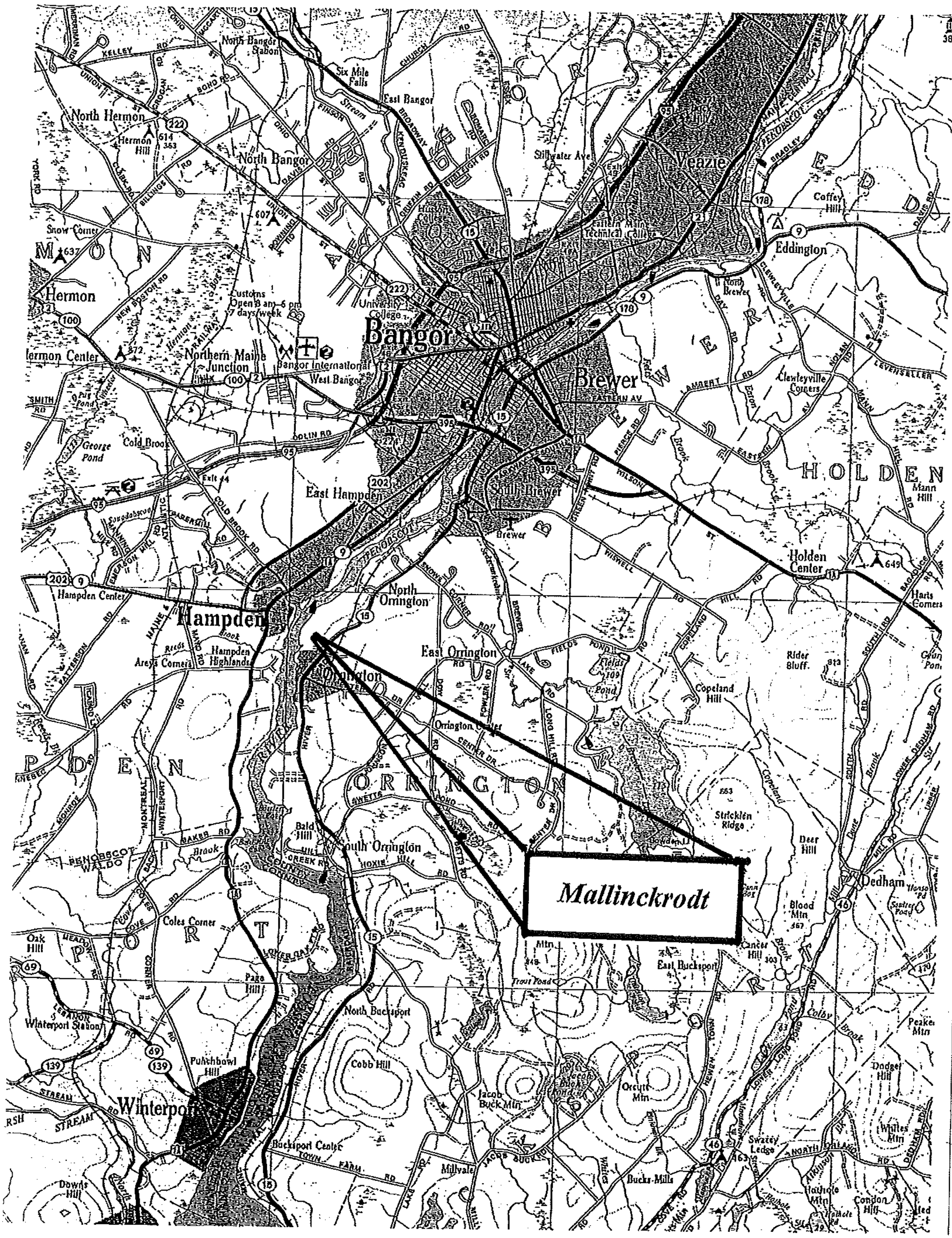
Additional information concerning this permitting action may be obtained from, and written comments sent to:

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

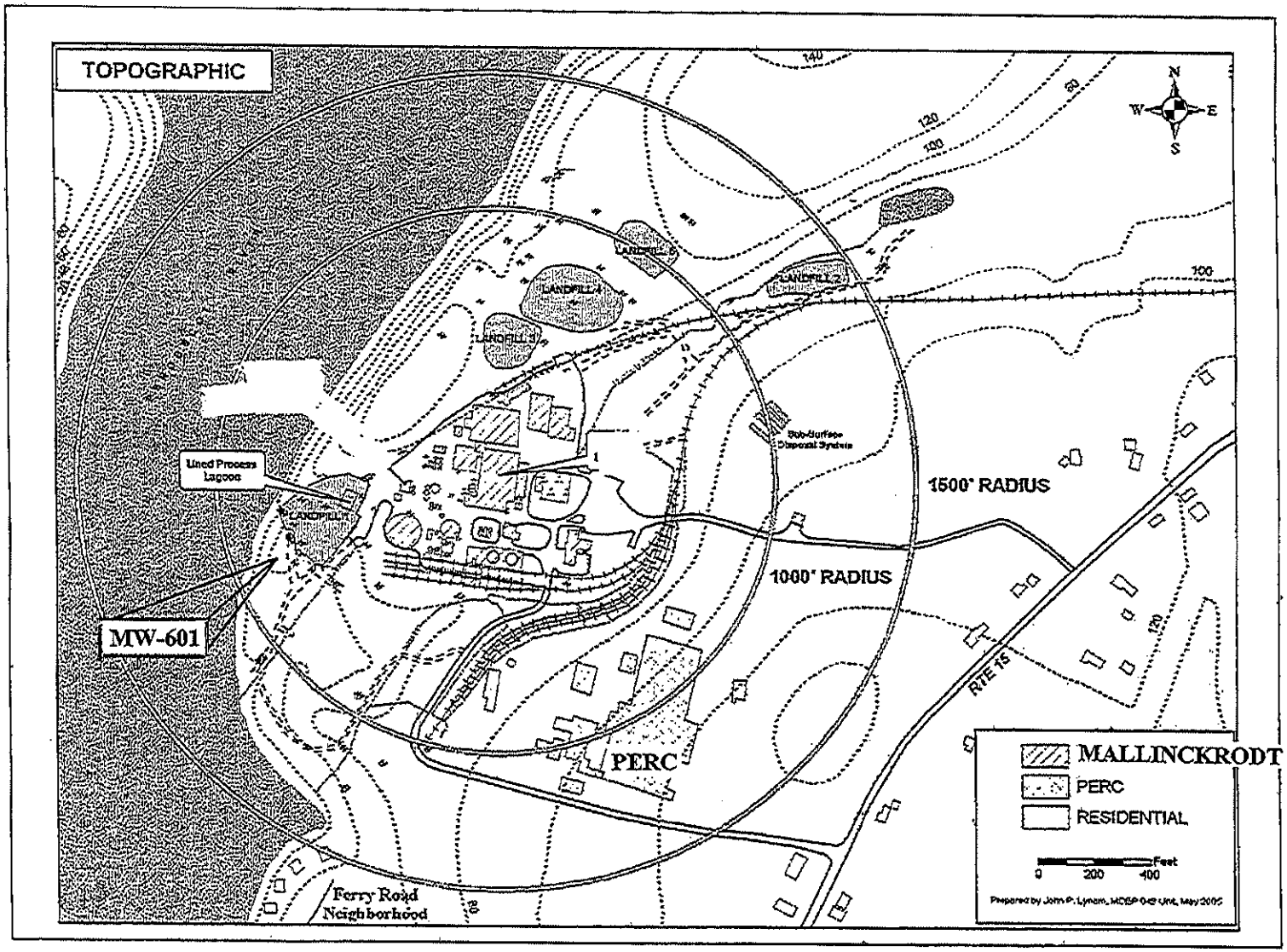
10. RESPONSE TO COMMENTS

During the period of May 29, 2013, through the issuance date of the permit/license, the Department solicited comments on the proposed draft permit/license to be issued for the discharge(s) from the permittee's facility. The Department did not receive comments from the permittee, state or federal agencies or interested parties that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.

ATTACHMENT A


Mallinckrodt
Bangor
Brewer
Veazie
Eddington
Hampden
Orrington
East Orrington
North Orrington
South Orrington
Orrington Center
South Brewer
East Hampden
Hampden Center
Hampden Highlands
Hermon
North Hermon
Hermon Center
Northern Maine Junction
North Bangor
North Bangor Station
East Bangor
Six Mile Falls
West Bangor
Bangor International
University College
Eastern Maine Technical College
Stillwater Ave
Holden Center
Clewleyville Corners
Winterport
Winterport Station
Bucksport Center
North Bucksport
East Bucksport
Bucks Mills
Millvale
Dedham
Coles Corner
Areys Corner
Snow Corner
Harts Corners
Cobb Hill
Page Hill
Punchbowl Hill
Bald Hill
Copeland Hill
Rider Bluff
Strickland Ridge
Deer Hill
Blood Mtn
Cancer Hill
Jacob Buck Mtn
Orcutt Mtn
Dodge Hill
Whites Mtn
Swazey Ledge
Coffey Hill
Mann Hill
Downs Hill
Condon Hill
Oak Hill
Cold Brook
George Pond
Fields Pond
Trout Pond
Customs Open 8 am–6 pm 7 days/week
HOLDEN
ORRINGTON
PENOBSCOT
WALDO

ATTACHMENT B


TOPOGRAPHIC
N
W
E
S
LANDFILL 5
LANDFILL 4
LANDFILL 3
LANDFILL 2
LANDFILL 1
Sub-Surface Disposal System
Lined Process Lagoon
1500' RADIUS
1000' RADIUS
MW-601
PERC
RTE 15
Ferry Road Neighborhood
MALLINCKRODT
PERC
RESIDENTIAL
Feet
0 200 400

ATTACHMENT C

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

PAUL R. LEPAGE
GOVERNOR

PATRICIA W. AHO
Commissioner

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?	☐	☐
2	Changes in the condition or operations of the facility that may increase the toxicity of the discharge?	☐	☐
3	Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge?	☐	☐
4	Increases in the type or volume of hauled wastes accepted by the facility?	☐	☐

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	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
WET Testing	☐	☐	☐	☐
Priority Pollutant Testing	☐	☐	☐	☐
Analytical Chemistry	☐	☐	☐	☐
Other toxic parameters [1]	☐	☐	☐	☐

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.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

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 04769-2094
(207) 764-0477 FAX: (207)760-3143

web site: www.maine.gov/dep

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).

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 if 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 MAINTENACE 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

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.

(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.

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.

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

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).

(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.

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 contaminates 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.

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.

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.

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.