AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA", and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Gehring Acquisition Company, LLC
1225 Franklin Avenue, Suite 300
Garden City, NY 11530

is authorized to discharge from a facility located at

Tweave LLC
138 Barrows Street
Norton, MA 02766

to receiving water named

un-named tributary to the Wading River (Taunton River Watershed MA62-49)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective following signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on January 19, 2005 (and modified August 8, 2008).

This permit consists of 16 pages in Part I including effluent limitations, monitoring requirements, 9 pages in Attachment 1 – Freshwater Acute Toxicity Test Procedure and Protocol, and 25 pages in Part II including General Conditions and Definitions.

Signed this 12th day of April, 2011

/S/SIGNATURE ON FILE

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Stephen S. Perkins, Director
Office of Ecosystem Protection

Environmental Protection Agency Program

Boston, MA

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David Ferris, Director
Massachusetts Wastewater Management
Department of Environmental Protection

Commonwealth of Massachusetts

Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated process wastewater through **Outfall Serial Number 001** to an un-named tributary to the Wading River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of the State Surface Water Quality Standards of the receiving water.

Effluent Characteristic	Discharge Limitation				Monitoring Requirements [1,2, 12]	
	Mass-based Limits (lbs/day)		Concentration-based Limits (mg/L)			
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Flow [6]	---	---	0.008 MGD	0.01 MGD	Continuous	Recorder
BOD_5	1.34	2.5	20	30	1/Month	Composite [5]
TSS	1.34	2.5	20	30	1/Month	Composite [5]
COD	27	50	400	600	1/Quarter	Composite [5]
pH [3]	6.5-8.3 SU				1/Month	Grab
Oil & Grease	---	---	---	15	1/Quarter	Grab
Total Sulfides	0.10	0.20	1.5	3.0	1/Year	Grab

Effluent Characteristic	Discharge Limitation				Monitoring Requirements [1,2, 12]	
	Mass-based Limits (lbs/day)		Concentration-based Limits (mg/L)			
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Total Nitrate	---	---	Report	Report	1/Month	Composite [5]
Total Nitrite	---	---	Report	Report	1/Month	Composite [5]
Total Phenols	0.05	0.1	0.75	1.5	1/Year	Grab
Total Chromium	0.0033	0.068	0.05	0.8	1/Year	Composite [5]
Total Copper	0.00027	0.00046	0.0040	0.0055	1/Quarter	Composite [5]
Total Zinc	0.0034	0.0043	0.052	0.052	1/Quarter	Composite [5]
Total Phosphorus [7]	---	---	0.1	7.5	1/Month	Composite [5]
Total Kjeldahl Nitrogen (TKN)	---	---	Report	Report	1/Month	Composite [5]
Color (PCU) [8]	---	---	Report	Report	1/Month	Grab

Effluent Characteristic	Discharge Limitation				Monitoring Requirements [1, 2, 12]	
	Mass-based Limits (lbs/day)		Concentration-based Limits (mg/L)			
	Average Monthly	Maximum Daily	Average Monthly	Maximum Daily	Measurement Frequency [4]	Sample Type
Whole Effluent Toxicity [9,10, 11]						
Acute (LC_{50})	---	---	100%		1/Quarter	Composite [5]
Hardness (mg/L)	---	---	Report		1/Quarter	Composite [5]
Alkalinity (mg/L)	---	---	Report		1/Quarter	Composite [5]
pH (SU)	---	---	Report		1/Quarter	Composite [5]
Specific Conductance (µmhos/cm)	---	---	Report		1/Quarter	Composite [5]
Total Solids (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Suspended Solids (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Ammonia Nitrogen as N (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Organic Carbon (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Residual Chlorine (mg/L)	---	---	Report		1/Quarter	Composite [5]
Dissolved Oxygen (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Cadmium (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Chromium (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Lead (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Copper (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Zinc (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Nickel (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Aluminum (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Magnesium (mg/L)	---	---	Report		1/Quarter	Composite [5]
Total Calcium (mg/L)	---	---	Report		1/Quarter	Composite [5]

See pages 5 –6 for explanation of footnotes.

Footnotes:

1. Samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the discharge from the site through the outfall, prior to commingling with the discharge of any stormwater, at the outlet of the sand filter bed, prior to mixing with the receiving water. In order to obtain a representative sample of the discharge through Outfall 001, the permittee shall take flow proportional composite samples of the discharge through the two pipes discharging from the outlet of the sand filter bed. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested in accordance with the procedures in 40 CFR 136, unless specified elsewhere in the permit.

2. Samples of the discharge through Outfall 001 shall be taken at least two weeks after any discharge from Internal Outfalls 001A and/or 001B.

3. Required for State Certification, see Part I.A.4.

4. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of four (4) discharge events in each calendar year, when discharge occurs. Sampling frequency of 1/year is defined as the sampling of one (1) discharge event in each calendar year, when discharge occurs. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(l)(4)(ii).

5. A composite sample consists of ten (10) grab samples collected at hourly intervals during a ten hour period, combined proportional to flow. In the event that the discharge does not last ten hours, sample at hourly intervals for the length of time of the discharge, not to be less than 4 hours (i.e., no less than four samples).

6. Flow shall be continuously measured and recorded using a flow meter and totalizer.

7. The total phosphorus limits of 0.1 mg/L as monthly average and 7.5 mg/L as a daily maximum are seasonal, from April 1st through October 31st, taken as a composite. The permittee shall report the total phosphorus monthly average and daily maximum concentrations (without limits) year-round.

8. In addition to the monthly effluent sample analysis of color, the permittee shall perform monthly visual monitoring of the effluent sample and the receiving water while a discharge is occuring. Record the description of the sample color and the color of any visible plume in the receiving water in the comments section of the DMR. The permittee shall also document the presense/absence of a visible plume by photographing the receiving water at the point of the effluent discharge. The photos shall be kept at the facility for further review.

9. The permittee shall conduct quarterly acute toxicity tests. The permittee shall test the daphnid, Ceriodaphnia dubia, and fathead minnow, Pimephales promelas. Toxicity test samples shall be collected during the second week of the months of January, April, July, and October. The test results shall be submitted by the last day of the month following the completion of the test. The results are due February 28th, May 31st, August 31st, and November 30th, respectively. In the event there is no discharge during the second week of the specified months, the permittee shall sample as soon as practicable thereafter, and submit the test results by the last day of the month following completion of the test. The tests must be performed in accordance with test

procedures and protocols specified in Attachment 1 of the permit.

Test Dates – Second Week in:	Submit Results by:	Test Species	Acute Limit LC_{50}
January April July October	February 28th May 31st August 31st November 30th	Ceriodaphnia dubia (Daphnid)	≥ 100 %
		Pimephales promelas (fathead minnow)	

10. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall either follow procedures outlined in Attachment 1 (Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the permittee shall follow the *Self-Implementing Alternative Dilution Water Guidance* which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA, Region I web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the permittee shall revert to obtaining individual approval as outlined in Attachment 1. Any modification or revocation to this guidance will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA-New England directly using the approach outlined in Attachment 1.

11. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Alkalinity, pH, Specific Conductance, Total Solids, Total Suspended Solids, Total Ammonia Nitrogen as N, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Total Cadmium, Total Chromium, Total Lead, Total Copper, Total Zinc, Total Nickel, Total Aluminum, Total Magnesium, and Total Calcium found in the 100 percent effluent sample. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.

12. The permittee shall submit monthly DMRs, and during months when no tests are performed, enter "NODI 9" for that month.

PART I
A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge stormwater from the equalization basin, which is currently out of service, through **Internal Outfall Serial Number 001A** to an un-named tributary to the Wading River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of the State Surface Water Quality Standards of the receiving water.[2]

Effluent Characteristic	Discharge Limitation		Monitoring Requirements [1, 7]	
	Average Monthly (mg/L)	Maximum Daily (mg/L)	Measurement Frequency [4]	Sample Type
Flow (MGD) [5]	Report	Report	1/Month	Estimate
BOD_5	Report	Report	1/Year	Grab
TSS	Report	Report	1/Year	Grab
COD	Report	Report	1/Year	Grab
pH [3]	6.5-8.3 SU		1/Month	Grab
Oil & Grease	Report	Report	1/Year	Grab
Total Sulfides	Report	Report	1/Year	Grab
Total Aluminum	Report	Report	1/Year	Grab
Total Nitrite – Nitrate (as N)	Report	Report	1/Year	Grab
Total Phenols	Report	Report	1/Year	Grab
Total Chromium	Report	Report	1/Year	Grab
Total Copper	Report	Report	1/Year	Grab
Total Zinc	Report	Report	1/Year	Grab
Total Phosphorus	Report	Report	1/Year	Grab
Total Kjeldahl Nitrogen (TKN)	Report	Report	1/Year	Grab
Color (PCU) [6]	Report	Report	1/Year	Grab

See page 8 for explanation of footnotes.

Part I.A.2, continued
Footnotes:

1. Samples shall consist of grab samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the stormwater discharge from the equalization basin through the internal outfall, prior to commingling with any process water discharge from the site, and prior to mixing with the receiving water. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested in accordance with procedures in 40 CFR 136, unless specified elsewhere in the permit.

2. Discharge through Outfall 001A is prohibited until all samples for Outfall 001 (in Part I.A.1) have been collected for the sampling period.

3. Required for State Certification, see Part I.A.4.

4. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/year is defined as the sampling of one (1) discharge event in each calendar year, when discharge occurs. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR 122.41(1)(4)(ii).

5. Flow shall be estimated for each monitoring event using accepted engineering techniques.

6. In addition to the annual reporting of color, the permittee shall perform visual monitoring of the effluent sample. Record a description of the sample color and submit this information in the comments section of the DMR.

7. The permittee shall submit monthly DMRs, and during months when no tests are performed, enter “NODI 9” for that month.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge stormwater from the secondary clarifier, which is currently out of service, through **Internal Outfall Serial Number 001B** to an un-named tributary to the Wading River. Such discharge shall: 1) be limited and monitored by the permittee as specified below; and 2) not cause a violation of the State Surface Water Quality Standards of the receiving water.[2]

Effluent Characteristic	Discharge Limitation		Monitoring Requirements [1, 7]	
	Average Monthly (mg/L)	Maximum Daily (mg/L)	Measurement Frequency [4]	Sample Type
Flow (MGD) [5]	Report	Report	1/Month	Estimate
BOD_5	Report	Report	1/Year	Grab
TSS	Report	Report	1/Year	Grab
COD	Report	Report	1/Year	Grab
pH [3]	6.5-8.3 SU		1/Month	Grab
Oil & Grease	Report	Report	1/Year	Grab
Total Sulfides	Report	Report	1/Year	Grab
Total Nitrate	Report	Report	1/Year	Grab
Total Nitrite	Report	Report	1/Year	Grab
Total Phenols	Report	Report	1/Year	Grab
Total Chromium	Report	Report	1/Year	Grab
Total Copper	Report	Report	1/Year	Grab
Total Zinc	Report	Report	1/Year	Grab
Total Phosphorus	Report	Report	1/Year	Grab
Total Kjeldahl Nitrogen (TKN)	Report	Report	1/Year	Grab
Color (PCU) [6]	Report	Report	1/Year	Grab

See page 10 for explanation of footnotes.

Part I.A.3, continued

Footnotes:

1. Samples shall consist of grab samples taken in compliance with the monitoring requirements specified above shall be taken at a point representative of all the stormwater discharge from the secondary clarifier through the internal outfall, prior to commingling with any process water discharge from the site, and prior to mixing with the receiving waters. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested in accordance with procedures in 40 CFR 136, unless specified elsewhere in the permit.

2. Discharge through Outfall 001B is prohibited until all samples for Outfall 001 (in Part I.A.1) have been collected for the sampling period.

3. Required for State Certification, see Part I.A.4.

4. Sampling frequency of 1/month is defined as the sampling of one (1) discharge event in each calendar month, when discharge occurs. Sampling frequency of 1/year is defined as the sampling of one (1) discharge event in each calendar year, when discharge occurs. The permittee shall submit the results to EPA of any additional testing done to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR 122.41(1)(4)(ii).

5. Flow shall be estimated for each monitoring event using accepted engineering techniques.

6. In addition to the annual reporting of color, the permittee shall perform visual monitoring of the effluent sample. Record a description of the sample color and submit this information in the comments section of the DMR.

7. The permittee shall submit monthly DMRs, and during months when no tests are performed, enter “NODI 9” for that month.

Part I.A. (Continued)

4. The pH of the effluent shall be in the range of 6.5 through 8.3 standard units and not more than 0.5 units outside the natural background range, unless these values are exceeded as a result of natural causes.

5. The discharge shall not cause objectionable discoloration of the receiving waters.

6. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time in other than trace amounts.

7. The effluent shall not cause objectionable discoloration of the receiving waters.

8. The permittee must allow at least two weeks after any discharge from Internal Outfalls 001A and/or 001B prior to sampling Outfall 001 to prevent commingling of process water and stormwater.

9. No process water shall be transferred to the equalization basin or secondary clarifier (both currently out of service).

10. The discharge shall not contain materials in concentrations or combinations which are hazardous or toxic to human health, aquatic life of the receiving surface waters or which would impair the uses designated by its classification.

11. EPA may modify this permit in accordance with EPA regulations in 40 Code of Federal Regulations (CFR) §122.62 and §122.63 to incorporate more stringent effluent limitations, increase the frequency of analyses, or impose additional sampling and analytical requirements.

12. All existing manufacturing, commercial, mining and silvicultural dischargers must notify the Director 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 basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

        (1) One hundred micrograms per liter (100 µg/l);

        (2) Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrite; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

        (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.§122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 C.F.R.§122.44(f).

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

(1) Five hundred micrograms per liter (500 µg/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.§122.21(g)(7).

(4) Any other notification level established by the Director in accordance with 40 C.F.R.§122.44(f).

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

13. Toxics Control

a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. REOPENER CLAUSES

1. This permit shall be modified, or alternately, revoked and reissued, to comply with any applicable standard or limitation promulgated or approved under sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or

b. Controls any pollutants not limited in the permit.

C. SPECIAL CONDITIONS AND REQUIREMENTS

1. The permittee shall develop Best Management Practices (BMPs) to be followed in operating the facility, cleaning tanks and other equipment and disposing of any liquid and solid waste. The purpose of the plan is to identify and to describe the practices which minimize the amounts of pollutants discharged to surface waters.

   The permittee shall develop and implement appropriate BMPs to re-evaluate the entire treatment system design and optimize the treatment obtained from each unit. Within **one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing treatment system to optimize the treatment efficiency, or adding treatment, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational or treatment changes. The methods to be evaluated include, but are not limited to, operational or treatment changes designed to remove color, to eliminate the toxicity of the discharge, to reduce the nitrogen loading, and to reduce the metal loading in the discharge to the un-named tributary. The BMP plan shall include the following requirements, at a minimum:

   a. Within **18 months of the effective date of the permit**, the permittee shall implement the recommended operational changes in order to remove the discharge of a visibly colored plume, to eliminate the toxicity of the discharge, to reduce the nitrogen loading, and to reduce the metal loading to the receiving water. The permittee shall submit annual reports to EPA and MassDEP, **on each year following the effective date of the permit,** which summarizes progress and activities related to optimizing the treatment system or adding additional treatment, as described below:

      i. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate the discharge of color. The permit requires annual reports be submitted that summarize progress and activities related to optimizing color removal efficiencies, document the monthly color observations throughout the year, and track trends relative to previous years. The permittee shall develop BMPs to eliminate the discharge of a visibly colored plume.

      ii. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate (or reduce to the maximum extent possible) the toxicity of the discharge. The permit requires annual reports be submitted that summarize progress and activities related to optimizing toxicity removal efficiencies. The permittee shall develop BMPs to determine the source(s) of toxicity in the discharge and eliminate, or reduce to the maximum extent possible, the toxicity of the discharge.

      iii. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to control total nitrogen levels, and to implement optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the existing average daily load. The annual average total nitrogen load from this facility (for the period of

February 2005 – September 2009) is estimated to be 1.44 lbs/day. The permit requires annual reports be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years. Additionally, the permittee shall develop BMPs to determine the source(s) of nitrogen in the discharge and eliminate, or reduce to the maximum extent possible, the concentration of nitrogen in the discharge.

iv. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate (or reduce to the maximum extent possible) the metal loading to the discharge. The permit requires annual reports be submitted that summarize progress and activities related to optimizing metal removal efficiencies. The permittee shall develop BMPs to determine the source(s) of metals in the discharge and eliminate, or reduce to the maximum extent possible, the metal loading to the discharge.

b. The permittee shall conduct regular inspections and maintenance of the treatment system to ensure that all treatment units are properly functioning. This inspection and maintenance requirement shall be included in the BMP plan.

c. The permittee shall develop and implement appropriate BMPs to ensure the discharges of process water and collected stormwater are no longer commingled prior to sampling, as was previously done at the facility. The current practice of commingling process water (prior to sampling) with stormwater from the equalization basin and stormwater from the secondary clarifier is prohibited in the permit.

D. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR

NetDMR is accessed from: http://www.epa.gov/netdmr. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

b. Submittal of NetDMR Opt Out Requests

Opt out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt out request and such request is approved by EPA. All opt out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)

5 Post Office Square - Suite 100
Boston, MA 02109-3912

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following addresses:

MassDEP – Southeast Region
Bureau of Waste Prevention
20 Riverside Drive
Lakeville, MA 02347
and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

Any verbal reports, if required in **Parts I** and/or **II** of this permit, shall be made to both EPA-New England and to MassDEP.

E. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of MassDEP pursuant to the Massachusetts Clean Waters Act, MGL c. 21, §§ 26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 CFR 124.53, MGL c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit

shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

USEPA REGION 1 FRESHWATER ACUTE TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **Daphnid (Ceriodaphnia dubia) definitive 48 hour test.**
- **Fathead Minnow (Pimephales promelas) definitive 48 hour test.**

Acute toxicity test data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use 40 CFR Part 136 methods. Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/disk2_index.cfm

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge sample shall be collected. Aliquots shall be split from the sample, containerized and preserved (as per 40 CFR Part 136) for chemical and physical analyses required. The remaining sample shall be measured for total residual chlorine and dechlorinated (if detected) in the laboratory using sodium thiosulfate for subsequent toxicity testing. (Note that EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection.) Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1.0 mg/L chlorine. If dechlorination is necessary, a thiosulfate control (maximum amount of thiosulfate in lab control or receiving water) must also be run in the WET test.

All samples held overnight shall be refrigerated at 1- 6^{o}C.

IV. DILUTION WATER

A grab sample of dilution water used for acute toxicity testing shall be collected from the receiving water at a point immediately upstream of the permitted discharge's zone of influence at a reasonably accessible location. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. In the case where an alternate dilution water has been agreed upon an additional receiving water control (0% effluent) must also be tested.

If the receiving water diluent is found to be, or suspected to be toxic or unreliable, an alternate standard dilution water of known quality with a hardness, pH, conductivity, alkalinity, organic carbon, and total suspended solids similar to that of the receiving water may be substituted **AFTER RECEIVING WRITTEN APPROVAL FROM THE PERMIT ISSUING AGENCY(S)**. Written requests for use of an alternate dilution water should be mailed with supporting documentation to the following address:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency-New England
5 Post Office Sq., Suite 100 (OEP06-5)
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
5 Post Office Sq., Suite 100 (OES04-4)
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcement/water/dmr.html *for further important details on alternate dilution water substitution requests.*

It may prove beneficial to have the proposed dilution water source screened for suitability prior to toxicity testing. EPA strongly urges that screening be done prior to set up of a full definitive toxicity test any time there is question about the dilution water's ability to support acceptable performance as outlined in the 'test acceptability' section of the protocol.

V. TEST CONDITIONS

The following tables summarize the accepted daphnid and fathead minnow toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE DAPHNID, CERIODAPHNIA DUBIA 48 HOUR ACUTE TESTS[1]

1.	Test type	Static, non-renewal
2.	Temperature (^{o}C)	20 ± 1^{o}C or 25 ± 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hour light, 8 hour dark
5.	Test chamber size	Minimum 30 ml
6.	Test solution volume	Minimum 15 ml
7.	Age of test organisms	1-24 hours (neonates)
8.	No. of daphnids per test chamber	5
9.	No. of replicate test chambers per treatment	4
10.	Total no. daphnids per test concentration	20
11.	Feeding regime	As per manual, lightly feed YCT and Selenastrum to newly released organisms while holding prior to initiating test
12.	Aeration	None
13.	Dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized water and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	≥ 0.5, must bracket the permitted RWC
15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution

		series.
16.	Effect measured	Mortality-no movement of body or appendages on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must first be used within 36 hours of collection.
19.	Sample volume required	Minimum 1 liter

Footnotes:

1. Adapted from EPA-821-R-02-012.
2. Standard prepared dilution water must have hardness requirements to generally reflect the characteristics of the receiving water.

EPA NEW ENGLAND TEST CONDITIONS FOR THE FATHEAD MINNOW (PIMEPHALES PROMELAS) 48 HOUR ACUTE TEST[1]

1.	Test Type	Static, non-renewal
2.	Temperature (^{o}C)	20 $\pm$ 1 ^{o} C or 25 $\pm$ 1^{o}C
3.	Light quality	Ambient laboratory illumination
4.	Photoperiod	16 hr light, 8 hr dark
5.	Size of test vessels	250 mL minimum
6.	Volume of test solution	Minimum 200 mL/replicate
7.	Age of fish	1-14 days old and age within 24 hrs of each other
8.	No. of fish per chamber	10
9.	No. of replicate test vessels per treatment	4
10.	Total no. organisms per concentration	40
11.	Feeding regime	As per manual, lightly feed test age larvae using concentrated brine shrimp nauplii while holding prior to initiating test
12.	Aeration	None, unless dissolved oxygen (D.O.) concentration falls below 4.0 mg/L, at which time gentle single bubble aeration should be started at a rate of less than 100 bubbles/min. (Routine D.O. check is recommended.)
13.	dilution water[2]	Receiving water, other surface water, synthetic water adjusted to the hardness and alkalinity of the receiving water (prepared using either Millipore Milli-Q^{R} or equivalent deionized and reagent grade chemicals according to EPA acute toxicity test manual) or deionized water combined with mineral water to appropriate hardness.
14.	Dilution series	$\geq$ 0.5, must bracket the permitted RWC

15.	Number of dilutions	5 plus receiving water and laboratory water control and thiosulfate control, as necessary. An additional dilution at the permitted effluent concentration (% effluent) is required if it is not included in the dilution series.
16.	Effect measured	Mortality-no movement on gentle prodding
17.	Test acceptability	90% or greater survival of test organisms in dilution water control solution
18.	Sampling requirements	For on-site tests, samples must be used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples are used within 36 hours of collection.
19.	Sample volume required	Minimum 2 liters

Footnotes:

1. Adapted from EPA-821-R-02-012
2. Standard dilution water must have hardness requirements to generally reflect characteristics of the receiving water.

VI. CHEMICAL ANALYSIS

At the beginning of a static acute toxicity test, pH, conductivity, total residual chlorine, oxygen, hardness, alkalinity and temperature must be measured in the highest effluent concentration and the dilution water. Dissolved oxygen, pH and temperature are also measured at 24 and 48 hour intervals in all dilutions. The following chemical analyses shall be performed on the 100 percent effluent sample and the upstream water sample for each sampling event.

Parameter	Effluent	Receiving Water	ML (mg/l)
Hardness[1]	x	x	0.5
Total Residual Chlorine (TRC)[2, 3]	x		0.02
Alkalinity	x	x	2.0
pH	x	x	--
Specific Conductance	x	x	--
Total Solids	x		--
Total Dissolved Solids	x		--
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005
Al	x	x	0.02
Other as permit requires			

Notes:

1. Hardness may be determined by:
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 2340B (hardness by calculation)
     - Method 2340C (titration)
2. Total Residual Chlorine may be performed using any of the following methods provided the required minimum limit (ML) is met.
   - APHA Standard Methods for the Examination of Water and Wastewater , 21st Edition
     - Method 4500-CL E Low Level Amperometric Titration
     - Method 4500-CL G DPD Colorimetric Method
3. Required to be performed on the sample used for WET testing prior to its use for toxicity testing.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration (Determined at 48 Hours)

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See the flow chart in Figure 6 on p. 73 of EPA-821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See the flow chart in Figure 13 on p. 87 of EPA-821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of the results will include the following:

- Description of sample collection procedures, site description
- Names of individuals collecting and transporting samples, times and dates of sample collection and analysis on chain-of-custody
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests; light and temperature regime; other information on test conditions if different than procedures recommended. Reference toxicant test data should be included.
- All chemical/physical data generated. (Include minimum detection levels and minimum quantification levels.)
- Raw data and bench sheets.
- Provide a description of dechlorination procedures (as applicable).
- Any other observations or test conditions affecting test outcome.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

TABLE OF CONTENTS

PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA 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 requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. 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 notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator 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 Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. 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 and with the requirements of storm water pollution prevention plans. 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 only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce 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.

3. 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.

4. Bypass

a. Definitions

(1) *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility.

(2) *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 be reasonably 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 provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) 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.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) 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 preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an 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 B.5.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:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

d. Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

b. Except for records for 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 (or longer as required by 40 CFR Part 503), 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 except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the 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 CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

a. Planned Changes. The permittee shall give notice to the Regional Administrator as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

(1) 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
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) 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 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 Regional Administrator 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 after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) 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.

(2) 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. (See 40 CFR §122.41(g).)
(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 Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, 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.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. 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 Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, 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.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the 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 United States." 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.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

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 similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 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 measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard 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.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

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

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) 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 (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

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.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States 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.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

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, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

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 or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

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

Toxic pollutants means 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.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration 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 (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
5 POST OFFICE SQUARE, SUITE 100 (OEP06-4)
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT # MA0005355

PUBLIC NOTICE DATES:

NAME AND ADDRESS OF APPLICANT:

Gehring Acquisition Company, LLC
1225 Franklin Avenue, Suite 300
Garden City, NY 11530

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Tweave LLC
138 Barrows Street
Norton, MA 02766

RECEIVING WATERS: un-named tributary to the Wading River (Taunton River Watershed – MA62-49, formerly part of MA62-17)

CLASSIFICATION: Class B, warm water fishery

SIC CODE: 2221

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I. PROPOSED ACTION

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for the re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge process water and stormwater into the designated receiving water. The previous permit was issued to Tweave, Inc. on January 19, 2005. The permit was modified to reflect change in ownership to Gehring Acquisition Company, LLC, with the operator remaining Tweave LLC, on August 8, 2008. The current permit (as modified) expired January 19, 2010. EPA received a permit renewal application from Tweave LLC on July 9, 2009. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued.

II. TYPE OF FACILITY

Tweave is an integrated textile mill specializing in the production of woven stretch materials, located at 138 Barrows Street in Norton, MA (see Attachment A – Site Plan). The facility manufactures, for the sports and intimate apparel trade, highly developed fabric structures capable of extreme dimensional elongation.

III. SUMMARY OF MONITORING DATA

A quantitative description of the discharges in terms of significant effluent parameters based on discharge monitoring reports (DMRs) submitted for Outfall 001 during the time period from February 2005 to September 2009 was reviewed and used in the development of the draft National Pollutant Discharge Elimination System (NPDES) permit (draft permit). A summary of the DMR data is provided in Attachment B to this fact sheet.

IV. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMIT DERIVATIONS

The effluent limitations, monitoring requirements, and any implementation schedule, if required, may be found in Part 1 (Effluent Limitations and Monitoring Requirements) of the draft permit. The permit re-application is part of the administrative file (Permit No. MA0005355).

A. General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The general conditions of the draft permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i), and §122.48.

1. Technology-Based Requirements

Subpart A of 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

EPA has established National Effluent Limitation Guidelines (ELGs) for textile mills point source category (See 40 CFR Part 410.40, Subpart D, *Woven Fabric Finishing Point Source Subcategory*). The ELGs establish applicable limitations for existing dischargers representing; 1) best practicable control technology currently available (BPT) for conventional pollutants, 2) best conventional pollutant technology economically achievable (BCT) for conventional pollutants, and 3) best available technology economically achievable (BAT) for toxic and non-conventional pollutants.

The ELG regulations establish limitations and monitoring requirements on the final outfall to the receiving waterbody. The ELGs also establish limitations based on several methodologies including monthly average and/or daily maximum mass limits based on pounds of product produced based on BPT. The applicable ELGs are summarized in Table 1, below:

Table 1. Effluent Limitation Guidelines (ELGs) applicable to Tweave

40 CFR § 410 Subpart D	Kg/kkg (or pounds per 1,000 lb) of product	
Pollutant or Pollutant Property	Maximum for any 1 day	Average of daily values for 30 consecutive days
BOD5	6.6	3.3
COD	60.0	30.0
TSS	17.8	8.9
Sulfide	0.20	0.10
Phenol	0.10	0.05
Total Chromium	0.10	0.05
pH	Within the range of 6.0-9.0 SU at all times	

Mass-based ELGs are expressed as an allowable mass of pollutant discharge per unit of production and are directly related to a particular facility's production. The current permit is based on a production rate of 1705 pounds per day of finished woven products, taken from the previous 2000 permit, although it was noted in the fact sheet that market conditions had been reduced.

Review of most recent production data provided by the permittee indicates that the average production rate over the past four years (2006-2009) has ranged from 0 - 2640 lbs/day of product, and averaged 1012 lbs/day. Therefore, the ELG limits in the draft permit shall be based on the average production rate over the past four years of 1012 lbs/day. The calculated limits based on the applicable ELGs are summarized in Table 2, below.

Table 2. Summary of Calculated ELG Limits at Tweave

40 CFR § 410 Subpart D	Kg/kkg (or pounds per 1,000 lb) of product		ELG Limits (based on production rate of 1012 lbs/day)	
Pollutant or Pollutant Property	Maximum for any 1 day	Average of daily values for 30 consecutive days	Daily Max Limit (lbs/day)	Monthly Average Limit (lbs/day)
BOD5	6.6	3.3	6.7	3.3
COD	60.0	30.0	60.7	30.4
TSS	17.8	8.9	18.0	9.0
Sulfide	0.20	0.10	0.20	0.10
Phenol	0.10	0.05	0.10	0.05
Total Chromium	0.10	0.05	0.10	0.05
pH	Within the range of 6.0-9.0 SU at all times		6.0-9.0 SU	

According to 40 CFR §122.45(f)(2), pollutants limited in terms of mass may additionally be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations. Therefore, along with the technology-based mass limits, the current permit includes concentration-based equivalent limits. According to the USEPA NPDES Permit Writers' Manual, expressing limitations in terms of concentration as well as mass encourages the proper operation of a treatment system at all times. In the absence of concentration-based limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low flow periods and still meet its mass-based effluent limits. Concentration limits discourage the reduction in treatment efficiency during low flow periods, and require proper operation of treatment units at all times.[1]

2. Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts State Water Quality Standards, found at 314 CMR 4.00, include these elements. The State Water Quality Regulations limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. These

1 USEPA NPDES Permit Writers' Manual, p. 67, (EPA-833-B-96-003).

standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, be used unless site-specific criteria are established. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts. The Commonwealth of Massachusetts (State) has a similar narrative criterion in their water quality regulations that prohibits such discharges [See Massachusetts Title 314 CMR 4.05(5)(e)]. The effluent limits established in the draft permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained.

Section 303(d) of the Federal Clean Water Act (CWA) requires states to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls and, as such require the development of total maximum daily loads (TMDL).

The Final Massachusetts Year 2008 Integrated List of Waters lists Wading River (Segment MA62-49) as requiring a TMDL for pathogens. The Taunton River Watershed 2001 Water Quality Assessment Report indicates that the Aquatic Life and Aesthetics Use was assessed as support in Wading River (Segment MA62-49).

3. Anti-Backsliding

EPA's anti-backsliding provision as identified in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 CFR §122.44(l)(i)]. Since none of these exceptions apply to this facility, the effluent limits in the draft permit must be as stringent as those in the current permit.

4. Anti-Degradation

The Massachusetts Anti-Degradation Policy is found at Title 314 CMR 4.04. All existing uses of Wading River must be protected. The Wading River is classified as a Class B water, warm water fishery, by the Commonwealth of Massachusetts (314 CMR 4.06). These waters are designated at habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. Where designated they shall be suitable as a source of public water supply with appropriate treatment. They shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value.

B. Description of the Facility

Processes at the facility include spinning of component yarns, weaving of stretchable cloths, dyeing the cloth to the desired color, applying the finishes to the cloth to give the desired qualities such as softness, light fastness, water and oil repellency, durability, and/or soil release properties. The cloth is then shipped offsite to the customer. The average production rate at the facility (from 2006 – 2009) has ranged from 0 - 2640 lbs/day of product, and averaged 1012 lbs/day.

C. Description of Discharge

1. Treatment System

The major dry manufacturing operations include stretch yarn wrapping and weaving processes. There is no wet discharge from this part of the operation. The wet processes include woven fabric scouring, peroxide bleaching, dyeing and application of final functional finishes such as water repellant and permanent press.

The treatment system was originally designed for a 0.5 MGD flow from a cotton grey goods bleachery to treat process water by screening, aeration, clarification, aerobic digestion, pH adjustment, and sand filtration (see Attachment C – Facility Map). The Waste Water Treatment Plant Operation and Maintenance Manual (dated September 25, 2008) submitted by the facility on March 11, 2010, explains the current treatment system, as summarized below and outlined in Attachment D – Current Water Flow Schematic. A review of this manual and further correspondence with the permittee indicates that both the process wastewater and the treatment have substantially changed since originally designed.

Process wastewater is pumped to the screen house (for grit removal), and is gravity fed to a lined aeration basin with a retention time of 2-3 months (depending on the contribution of rainwater falling directly into the basin). The aeration basin contains two floating surface aerators. A large amount of foam was observed in the aeration basin by EPA on a site visit.[2]

From the aeration basin, the water flows by gravity to a cylindrical clarifier which is currently used as a wet well. Sludge is collected in the center of the clarifier/wet well and removed via vacuum truck for offsite disposal. The clarifier/wet well gravity feeds to an aerobic digester which is currently used as a settling tank. The digester/settling tank is a covered cylindrical concrete tank with a diffused aeration system to ensure adequate mixing and oxygen distribution, and a supernatant decant device.

The supernatant decant device in the digester/settling tank allows removal of clear liquid (supernatant) from the digester/settling tank to the sand filter. To remove supernatant from the digester/settling tank, the air supply is turned off and the solids within the tank are allowed to

2 Memorandum to Permit File (MA0005355), Trip Report, February 25, 2010.

settle, leaving a layer of supernatant above the solids. A decant pipe is put in place and the valves to the sand filters are opened, allowing an intermittent batch discharge of the supernatant via gravity flow to the sand filters. Sludge that collects in the digester/settling tank is pumped back to the aeration basin and mixed with the wastewater in the basin.

Aluminum sulfate, which was previously used in the treatment system, is no longer in use at the facility. Sodium carbonate is added to the system at the pump house, to adjust the pH.[3] Additional sodium carbonate is added at the aeration basin if the pH is still low. Final pH adjustment is done prior to discharge to the sand filter, where magnesium hydroxide is automatically added to the discharge as needed. If the pH drops to 6.5 SU, the system automatically pumps magnesium hydroxide into the discharge line. The system automatically shuts off as the pH reaches 7.8 SU.[4]

After final treatment in the sand filter, the treated process water is under-drained by way of two pipes emanating from the bottom of the sand filter currently in use. These two pipes discharge water that is essentially the same after treatment, and therefore are collectively identified as Outfall 001. In order to obtain a representative sample of the discharge through Outfall 001, the permittee shall take flow proportional composite samples of the discharge through each pipe. Three other sand filters are currently out of use; two are in disrepair, and one is temporarily out of use, although there are no current plans to replace the sand filter bed.

2. Stormwater

A second aeration basin, which is currently out of service, is periodically drained of stormwater (runoff from adjacent areas and precipitation which collects in the basin). The stormwater is currently drained from the aeration basin onto the ground for infiltration. A second clarifier, which is also currently out of service, periodically discharges stormwater (precipitation which collects in the clarifier) to the sand filter, for discharge through Outfall 001B. Additionally, an equalization basin is currently used to provide additional process water storage capacity.

Screened process water intermittently flows to the equalization basin, which is out of service, prior to pumping to the aeration basin. Stormwater (runoff from adjacent areas and precipitation which collects in the basin) also collects in the equalization basin. The facility recirculates the water in the equalization basin to the aeration basin, and vice-versa, to aerate the water in the equalization basin to prevent anaerobic conditions and resultant odors. However, dilution of process water by stormwater is not an allowable form of treatment to meet technology-based limits. Therefore, the draft permit requires the permittee to allow at least two weeks after any discharge from Internal Outfalls 001A and/or 001B prior to sampling Outfall 001 to prevent commingling of process water and stormwater (see Permit Part I.A.8).

The stormwater collected in the equalization basin is prohibited from being used to dilute the process water; therefore the equalization basin may no longer be used to provide process water

3 Letter from Bill DeCouta, of Tweave, to Nicole Kowalski, of EPA, dated March 11, 2010.
4 Email from Bill DeCouta, of Tweave, to Nicole Kowalski, of EPA, dated March 26, 2010.

storage capacity. The permittee may discharge the stormwater collected in the equalization basin through Internal Outfall 001A (an internal sampling point prior to commingling with process water) after the sampling for Outfall 001 has been completed (to avoid dilution of the process water with stormwater).

Thus, water shall be discharged from the equalization basin or the secondary clarifier after sampling at Internal Outfalls 001A and 001B, respectively, prior to commingling with the process water in the treatment system.

D. Discharge Location

Outfall 001 discharges to an un-named tributary of the Wading River (see Attachment C – Facility Map). The Wading River flows just north of the facility. The un-named tributary flows through the facility, just south of the sand filters (where Outfall 001 discharges), and then flows approximately 0.25 miles to connect with the Wading River, east of the facility.

E. Proposed Permit Effluent Limitations and Conditions

1. Outfall 001

a. Flow

The current permit requires effluent flow limitations of 8,000 gpd as a monthly average and 10,000 gpd as a daily maximum. Flow shall be continuously measured and recorded using a flow meter and totalizer. Review of DMR data shows that the flow limitations have not been exceeded on any occasion. The daily maximum flow has ranged from 8,000 gpd to 10,000 gpd and the monthly average flow has ranged from 3 – 7,400 gpd. The draft permit shall continue to require the flow limits contained in the current permit.

b. Dilution Factor

The United States Geological Survey (USGS) maintains a stream flow gage in the Wading River near Norton, MA (01109000). This gage is located about 200 feet downstream from State Route 140; approximately 1.6 miles downstream from where the un-named tributary (which Tweave discharges to) connects to the Wading River. The drainage area at the gage is 43.3 square miles and the 7Q10 is 1.93 cfs (1.25 MGD). The 7Q10, or the 7-day mean stream low flow with 10-year recurrence interval, is the base flow used to calculate the chronic effluent limits in NPDES permits (314 CMR 4.03(3)(a)). The 7Q10 flow in the Wading River at the point of the Tweave discharge is determined by using the 7Q10 value at the Wading River USGS gage (01109000), adjusted for the difference in drainage areas between the discharge and the gage.

The current permit states that the drainage area contributing to the Outfall 001 point of discharge is approximately 36 square miles, and uses a 7Q10 flow of 0.74 MGD (1.1 cfs) for the point of discharge. However, this is assuming Outfall 001 discharges directly to the Wading River.

Outfall 001 actually discharges to an un-named tributary which flows to the Wading River. Therefore, the dilution available from the un-named tributary will be much lower than if Outfall 001 discharged directly to the Wading River. The 7Q10 flow of the un-named tributary is unknown, and is expected to be minimal. Therefore, the dilution available to the effluent is expected to be minimal, and for the purposes of this permit, no dilution shall be granted for the discharge from Outfall 001.

c. Biological Oxygen Demand (BOD_5)

The applicable ELGs for this facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contain production-based limitations of 3.3 lbs BOD_5/1,000 lbs product, as a 30-day average, and 6.6 lbs BOD_5/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate the mass-based effluent limitations. The calculated effluent limitations based on the ELGs in the current permit are 5.6 lbs/day as a 30-day average and 11.25 lbs/day as a maximum. The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:

6.6 lbs BOD_5/1,000 lbs product * 1012 lbs/day product = 6.7 lbs/day

Average of daily values for 30 consecutive days:

3.3 lbs BOD_5/1,000 lbs product * 1012 lbs/day product = 3.3 lbs/day

However, based on the results of the 1988 Study of the Wading River[5], BOD_5 limits of 1.34 lbs/day, as a monthly average, and 2.5 lbs/day, as a daily maximum, were established in the current permit. The concentration-based equivalents are 20 mg/L and 30 mg/L, respectively, and were included in the current permit. These limits shall continue to be required in the draft permit, based on anti-backsliding requirements.

Review of DMRs shows that the BOD_5 mass-based monthly average limit has been exceeded once and daily maximum limit has been exceeded five times. The concentration-based monthly average limit has been exceeded six times and the daily maximum has been exceeded five times. BOD_5 shall continue to be monitored monthly in the draft permit. Although, as previously mentioned, it appears that process water was diluted with stormwater prior to discharge.

d. Total Suspended Solids

The applicable ELGs for this facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contains production-based limitations of 8.9 lbs TSS/1,000 lbs product, as a 30-day average, and 17.8 lbs TSS/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate the mass-based effluent limitations. The

5 *Rumford, Wading, and Threemile Rivers, 1988 Water Quality Survey Data, Wastewater Discharge Data and Water Quality Analysis.* MassDEP, 1990.

calculated effluent limitations based on the ELGs in the current permit are a 30-day average of 15.2 lbs/day TSS and a maximum of 30.35 lbs/day TSS. The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:
17.8 lbs TSS/1,000 lbs product * 1012 lbs/day product = 18.0 lbs/day

Average of daily values for 30 consecutive days:
8.9 lbs TSS/1,000 lbs product * 1012 lbs/day product = 9.0 lbs/day

However, as detailed in the fact sheet for the current permit, MassDEP established TSS limitations equivalent to the BOD limits of 1.34 lbs/day and 2.5 lbs/day based on water quality considerations, for the monthly average limit and daily maximum limits, respectively. These mass-based limits are required in the current permit, in addition to the equivalent concentration-based limits of 20 mg/L average monthly and 30 mg/L daily maximum. These limits shall continue to be required in the draft permit, in accordance with anti-backsliding requirements.

Review of DMR data shows that both the mass-based and concentration-based monthly average limits have been exceeded on one occasion. TSS shall continue to be monitored monthly.

e. Chemical Oxygen Demand (COD)

The applicable ELGs for the facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contain production-based limitations of 30.0 lbs COD/1,000 lbs product, as a 30-day average, and 60.0 lbs COD/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate the mass-based effluent limitations. The calculated effluent limitations based on the ELGs in the current permit are a 30-day average of 51.15 lbs/day COD and a maximum of 102.3 lbs/day COD. The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:
60.0 lbs COD/1,000 lbs product * 1012 lbs/day product = 60.7 lbs/day

Average of daily values for 30 consecutive days:
30.0 lbs COD/1,000 lbs product * 1012 lbs/day product = 30.4 lbs/day

However, the current permit requires an average monthly COD limit of 27 lbs/day and a daily maximum COD limit of 50 lbs/day. The current permit also includes the concentration-based equivalent limits of 400 mg/L and 600 mg/L, respectively. These limits were established based

on water quality considerations in the 1988 Wading River Study,[6] and shall continue to be required in the draft permit, based on anti-backsliding requirements.

Review of DMR data indicates that both the mass-based and concentration-based limits have not been exceeded on any occasion. COD shall continue to be monitored quarterly.

f. pH

The pH limitation range of 6.5-8.3 SU has been retained in the draft permit in accordance with anti-backsliding requirements found in 40 CFR §122.44(l). The pH limits are based on the Massachusetts Surface Water Quality Standards, 314 Code of Massachusetts Regulations ("CMR"), Inland Water, Class B at 4.05 (3)(b)3. These standards require that the pH of the receiving water be in the range of 6.5 to 8.3 standard units and no more than 0.5 units outside the background range. There shall no change from background conditions that would impair any use assigned to this Class. The water quality criteria have been adopted as discharge limitations based on certification requirements under Section 401(a)(1) of the CWA, as described in 40 CFR 124.53 and 124.55.

The applicable ELGs for the facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), require a pH effluent limitation range of 6.0-9.0 SU. However, since the water quality limit of 6.5-8.3 SU is more stringent, the draft permit shall continue to require a pH effluent limitation range of 6.5-8.3 SU, monitored monthly. Review of the DMR data reveals that the current pH limit range has been exceeded on one occasion, with a pH of 8.7 SU.

g. Oil and Grease (O&G)

The current permit requires a daily maximum O&G limit of 15 mg/L. This limit is consistent with the narrative Massachusetts Surface Water Quality Standard at 314 CMR 4.05 (3)(b)7. The applicable ELGs for the facility do not require an O&G limit.

Therefore, the draft permit shall continue to require an O&G limit of 15 mg/L, consistent with water quality standards. Review of DMR data shows that O&G effluent limitation of 15 mg/L has not been exceeded on any occasion, with a maximum O&G concentration of 13.2 mg/L. The sampling frequency shall continue to be quarterly.

h. Total Sulfides

The applicable ELGs for this facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contain production-based limitations of 0.10 lbs sulfide/1,000 lbs product, as a 30-day average, and 0.20 lbs sulfide/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate the mass-based effluent limitations. The calculated effluent limitations based on the ELGs in the current permit are a 30-day average

6 *Rumford, Wading, and Threemile Rivers, 1988 Water Quality Survey Data, Wastewater Discharge Data and Water Quality Analysis.* MassDEP, 1990.

of 0.17 lbs/day sulfide and a maximum of 0.34 lbs/day sulfide. The current permit also includes the concentration-based equivalent limits of 2.5 mg/L as a monthly average and 4.1 mg/L as a daily maximum.

The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:
0.20 lbs sulfide/1,000 lbs product * 1012 lbs/day product = 0.20 lbs/day

Average of daily values for 30 consecutive days:
0.10 lbs sulfide/1,000 lbs product * 1012 lbs/day product = 0.10 lbs/day

These ELG based limits for sulfide (0.20 lbs/day daily maximum and 0.10 lbs/day monthly average) shall be included in the draft permit, based on the current production rate of 1012 lbs/day. The permit shall also include concentration-based equivalent limits, as were required in the current permit. The technology-based concentration equivalent limits calculate to (using the long-term average flow of 0.008 MGD to calculate both the monthly average and daily maximum concentrations[7]):

Daily maximum: (0.20 lbs/day) / (0.008 MGD x 8.34) = 3 mg/L
Average monthly: (0.10 lbs/day) / (0.008 MGD x 8.34) = 1.5 mg/L

Sulfide is not listed specifically in the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Therefore, according to the Massachusetts Surface Water Quality Standards [314 CMR 4.05(5)(e)]:

> For pollutants not otherwise listed in 314 CMR 4.00, the *National Recommended Water Quality Criteria: 2002, EPA 822R-02-047, November 2002* published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher.

EPA reviewed the National Recommended Water Quality Criteria, which do not require a sulfide limit, but do contain a 'sulfide-hydrogen sulfide' chronic (CCC) criterion of 2.0 ug/L. Review of EPA's Water Quality Criteria for Water (The Red Book, 1976), shows that the 'sulfide-hydrogen sulfide' limit refers to undissociated hydrogen sulfide. When hydrogen sulfide dissolves in water, it dissociates into hydrosulfide (HS^-) and sulfide ion (S^{-2}); the ratio of the concentrations of these various ions depending on the pH of the solution. At lower pH values, the majority of sulfide is expected to be in the form of undissociated hydrogen sulfide.[8] Therefore, since the pH of the

7 USEPA NPDES Permit Writers' Manual, p. 67.
8 Red Book (EPA 440/9-76-023, July, 1976)

discharge from this facility averages about 7 SU, the concentration of hydrogen sulfide is not expected to be high.

Review of DMRs shows that the sulfide limits in the current permit have not been exceeded on any occasion, with a maximum mass loading reported of 0.008 lbs/day. Total sulfides shall continue to be monitored annually.

i. Total Phosphorus

In freshwater systems including rivers, streams and impoundments, phosphorus is usually the limiting nutrient for primary plant production. Phosphorus promotes the growth of nuisance algae and aquatic plants and when these plants and algae undergo their decay processes, they generate odors and lower the dissolved oxygen levels in the river.

The Massachusetts Surface Water Quality Standards do not contain numerical criteria for total phosphorus (TP). Narrative criteria for nutrients are found at 314 CMR 4.05(5)(c), which states the following:

> *Unless naturally occcuring, all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses and shall not exceed the site specific criteria developed in a TMDL or as otherwise established by the Department pursuant to 314 CMR 4.00. Any existing point source discharge containing nutrients in concentrations that would cause or contribute to cultural eutrophication, including the excessive growth of aquatic plants or algae, in any surface water shall be provided with the most appropriate treatment as determined by the Department, including, where necessary, highest and best practical treatment (HBPT) for POTWs and BAT for non POTWs, to remove such nutrients to ensure protection of existing and designated uses. Human activities that result in the nonpoint source discharge of nutrients to any surface water may be required to be provided with cost effective and reasonable best management practices for nonpoint source control.*

A TMDL study determines the maximum amount of pollutant that a waterbody can receive and still meet WQS, and the allocations of that amount to the pollutant's sources, such as this facility's discharge. Since a TMDL study for nutrients is not currently available for the Wading River, phosphorus limits must meet either water quality-based limits or technology-based limits.

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The EPA's Water Quality Criteria for Water 1986 (the Gold Book) recommends, in order to control eutrophication, in-stream phosphorus concentrations should be less than 0.05 mg/L for any stream entering a lake or reservoir, 0.1 mg/L for any stream not discharging directly to lakes or impoundments, and 0.025 mg/L within the lake or reservoir.

More recently, EPA released Ecoregional Nutrient Criteria, established as part of an effort to reduce problems associated with excess nutrients in water bodies in specific areas of the country. The published ecoregion-specific criteria represent conditions in waters minimally impacted by

human activities, and thus representative of water without cultural eutrophication. Norton, MA is within Ecoregion XIV, Eastern Coastal Plains. The total phosphorus criteria for this ecoregion is found in Ambient Water Quality Criteria Recommendations, Information Supporting the Development of State and Tribal Nutrient Criteria, Rivers and Streams in Ecoregion XIV (EPA 822-B-00-022), published in December 2000, and is 24 ug/L (0.024 mg/L).

The current permit required the facility to conduct a Phosphorus Loading Evaluation and Reduction Plan, with the goal of reducing the phosphorus concentration in the effluent to 1 mg/L. The current permit also required reporting of total phosphorus at a frequency of 1/month, however, the limit in the previous permit of 7.5 mg/L total phosphorus was removed in the current permit, in lieu of the Evaluation and Reduction Plan. The current permit states, if the effluent monitoring results indicate that the total phosphorus concentration exceed criteria and contribute to eutrophication, a limit may be included.

Of the various dyes used at the facility, 12 were found to contain phosphorus concentrations in excess of 1 mg/L, with some as high as 6 mg/L. Review of DMR data shows that the total phosphorus concentration in the discharge has averaged 2.3 mg/L. Based on this average concentration and the average flow limit (0.008 MGD), this calculates to an average phosphorus mass loading of 0.154 lbs/day. The total phosphorus concentration reported in the 2009 permit re-application was 1.73 mg/L. The Phosphorus Loading Evaluation and Reduction Plan in the current permit aimed to reduce phosphorus loading in the effluent to 1.0 mg/L.

Given that the state has not yet adopted numerical water quality based phosphorus criteria, the draft permit will not establish limits based on EPA Ecoregion guidance at this time, but will instead require a monthly average TP limit on the discharge of 0.1 mg/L, based on EPA's Quality Criteria for Water 1986 (the Gold Book), for any stream not discharging directly to lakes or impoundments.

While this limit will not ensure attainment of EPA's recommended Ecoregion guidance criteria, it will significantly reduce phosphorus in the receiving water and ensure that phosphorus discharge concentrations in the receiving waters will not significantly exceed the Gold Book Guidance. If, upon completion of a TMDL for nutrients based on a detailed study of eutrophication in the Wading River and its downstream impoundments, and a detailed analysis of the TP loading from other facilities, it is determined that either a higher or lower limit will result in compliance with WQS, then the EPA and MassDEP may exercise the reopener clause in Part I.C and modify the permit accordingly. Therefore, the limit of 0.1 mg/L for the monthly average TP shall be required in the draft permit. The draft permit shall also re-instate the 7.5 mg/L daily maximum TP limit from the previous permit, based on anti-backsliding requirements. The total phosphorus limits of 0.1 mg/L as monthly average and 7.5 mg/L as a daily maximum are seasonal, from April 1st through October 31st, taken as composites. The permittee shall report the total phosphorus monthly average and daily maximum concentrations (without limits) year-round.

j. Total Kjeldahl Nitrogen (TKN), Nitrite-Nitrate (as N)

Total Kjeldahl Nitrogen (TKN), a component of total nitrogen, is the sum of organic nitrogen and ammonia-N. Total nitrogen is the sum of TKN and nitrite-nitrate (as N). The mouth of the Taunton River, of which the Wading River is a tributary, is on the Massachusetts 303(d) list for organic enrichment/low dissolved oxygen. In marine systems (the lower downstream portions are classified as Class SB) discharges of nitrogen are typically the cause of such conditions.

Review of DMR data shows that the daily maximum concentration of TKN in the discharge has ranged from 0.26-40.5 mg/L. The daily maximum concentration of Nitrite (as N) has ranged from 0-13.9 mg/L and the concentration of Nitrate (as N) has ranged from 0.03-22.4 mg/L. Therefore, the total nitrogen concentration (the sum of TKN and nitrite-nitrate (as N)) has ranged from 0.27-58.8 mg/L. Based on the maximum daily flow limit (0.01 MGD), this calculates to an average nitrogen mass loading range of 0.022-4.9 lbs/day. The current permit shall continue to require reporting of the daily maximum TKN, nitrite, and nitrate concentrations, and also include reporting of the monthly average concentrations of each. TKN, nitrite, and nitrate shall continue to be monitored monthly. The monitoring data collected by the permittee, along with data from other discharges to the Taunton River, are necessary for the future completion of a TMDL.

Additionally, since the Taunton River is impaired for nitrogen, the permittee shall develop appropriate BMPs to evaluate alternative methods of operating the existing treatment system in order to control total nitrogen levels, and to implement optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the existing average daily load. The annual average total nitrogen load from this facility (for the period of February 2005 – September 2009) is estimated to be 1.44 lbs/day. The permit requires annual reports to be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years.

Additionally, the permittee shall develop BMPs to determine the source(s) of nitrogen in the discharge and eliminate, or reduce to the maximum extent possible, the concentration of nitrogen in the discharge.

k. Total Phenols

The applicable ELGs for this facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contain production-based limitations of 0.05 lbs phenol/1,000 lbs product, as a 30-day average, and 0.10 lbs phenol/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate the mass-based effluent limitations. The calculated effluent limitations based on the ELGs in the current permit are a 30-day average of 0.085 lbs/day phenol and a maximum of 0.17 lbs/day phenol.

The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:
0.10 lbs phenol/1,000 lbs product * 1012 lbs/day product = 0.10 lbs/day

Average of daily values for 30 consecutive days:
0.05 lbs phenol/1,000 lbs product * 1012 lbs/day product = 0.05 lbs/day

The current permit requires technology-based limits for total phenols of 0.040 lbs/day as a monthly average and 0.060 lbs/day as a daily maximum. The current permit also requires the concentration-based equivalents of 0.6 mg/L and 0.72 mg/L, respectively. However, the draft permit shall require the above calculated limits (0.10 lbs/day maximum daily and 0.05 lbs/day monthly average) as an exception to anti-backsliding, based on the change in production rate at the facility. Additionally, the concentration-based equivalents have been recalculated to 1.5 mg/L and 0.75 mg/L, daily maximum and monthly average, respectively.[9]

Review of DMR data shows that the phenol limits have not been exceeded on any occasion. Phenol shall continue to be monitored annually.

l. Total Chromium

The applicable ELGs for this facility, Woven Fabric Finishing Category (40 CFR 410 Subpart D), contain production-based limitations of 0.05 lbs chromium/1,000 lbs product, as a 30-day average, and 0.10 lbs chromium/1,000 lbs product, as a maximum for any 1 day. The current permit used 1705 lbs/day as the production rate at the facility to calculate mass-based effluent limitations. The calculated effluent limitations based on the ELGs in the current permit are a 30-day average of 0.085 lbs/day chromium and a maximum of 0.17 lbs/day chromium. The current permit also requires the concentration-based equivalents of 1.0 mg/L and 1.5 mg/L, respectively.

The draft permit uses 1012 lbs/day, the average long-term production rate at the facility over the past four years, to calculate the revised mass-based effluent limitations, as follows:

Maximum for any 1 day:
0.10 lbs chromium/1,000 lbs product * 1012 lbs/day product = 0.10 lbs/day
Average of daily values for 30 consecutive days:
0.05 lbs chromium/1,000 lbs product * 1012 lbs/day product = 0.05 lbs/day

These limits are more stringent than the current permit total chromium limits of 0.12 lbs/day daily maximum and 0.067 lbs/day average monthly.

Chromium is not listed specifically in the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Therefore, according to the Massachusetts Surface Water Quality Standards [314 CMR 4.05(5)(e)]:

9 Based on the USEPA NPDES Permit Writers' Manual, p. 67, the calculation of the concentration-based limit from the mass-based limit should be based on the long-term average flow rate; however, the current permit daily maximum concentration-based limit was calculated based on the daily maximum flow rate.

For pollutants not otherwise listed in 314 CMR 4.00, the *National Recommended Water Quality Criteria: 2002, EPA 822R-02-047, November 2002* published by EPA pursuant to Section 304(a) of the Federal Water Pollution Control Act, are the allowable receiving water concentrations for the affected waters, unless the Department either establishes a site specific criterion or determines that naturally occurring background concentrations are higher.

EPA reviewed the National Recommended Water Quality Criteria, which contain criteria for chromium (III) and chromium (VI) based on dissolved metal concentrations. Converted to total recoverable chromium, the chronic (CCC) criteria is 49.6 ug/L and the acute (CMC) criterion is 815 ug/L, calculated as follows:

Cr (III)

$CCC(dissolved)_{Cr(III)} = \exp\{m_C [\ln(hardness)] + b_C\} (CF)$
$= \exp\{0.8190 [\ln(37)] + 3.7256\} (0.316) = 252$ ug/L
$CCC\ (total\ recoverable)_{Cr(III)} = 252$ ug/L / CF = 252 ug/L / 0.316 = 799 ug/L

$CMC\ (dissolved)_{Cr(III)} = \exp\{m_A [\ln(hardness)] + b_A\} (CF)$
$= \exp\{0.8190 [\ln(37)] + 0.6848\} (0.860) = 32.8$ ug/L
$CMC\ (total\ recoverable)_{Cr(III)} =$ 32.8 ug/L / CF = 32.8 ug/L / 0.860 = 38.2 ug/L

Cr (VI)

$CCC(dissolved)_{Cr(VI)} = 11$ ug/L
$CCC\ (total\ recoverable)_{Cr(VI)} = 11$ ug/L / CF = 11 ug/L / 0.962 = 11.4 ug/L

$CMC\ (dissolved)_{Cr(VI)} = 16$ ug/L
$CMC\ (total\ recoverable)_{Cr(VI)} = 16$ ug/L / CF = 11 ug/L / 0.982 = 16.3ug/L

Total Cr $_{Cr(III)+Cr(VI)}$
$CCC\ (total\ recoverable)_{Cr(III)+Cr(VI)} = 38.2$ ug/L + 11.4 ug/L = **49.6 ug/L**
$CMC\ (total\ recoverable)_{Cr(III)+Cr(VI)} = 799$ ug/L + 16.3 ug/L = **815 ug/L**

Assuming no dilution, as described above in Part IV.E.1.b, the mass-based limits are calculated as follows:

Acute limit (lbs/day) = Flow (MGD) * Acute limit (mg/L) * CF [(lb*L)/(MG*mg)]
= 0.01 MGD * 0.815 mg/L * 8.34 (lb*L)/(MG*mg)
= 0.068 lbs/day
Chronic limit (lbs/day) = Flow (MGD) * Chronic limit (mg/L) * CF [(lb*L)/(MG*mg)]
= 0.008 MGD * 0.0496 mg/L * 8.34 (lb*L)/(MG*mg)
= 0.0033 lbs/day

These are the most stringent limits of all of the above described limits. Therefore these limits of 0.0033 lbs/day monthly average and 0.068 lbs/day daily maximum shall be included in the draft

permit, and chromium shall continue to be monitored annually. Additionally, the concentration based limits of 0.05 mg/L and 0.8 mg/L, as calculated above, shall be included in the draft permit.

Review of DMR data shows that the total chromium limits in the current permit have not been exceeded on any occasion. The concentration of chromium in the discharge has ranged from 0.08 mg/L – 0.61 mg/L (both monthly average and daily maximum) and the mass of chromium has ranged from 0.002 lb/day – 0.008 lb/day (both monthly average and daily maximum).

m. Total Copper

The current permit requires water quality-based limits for copper based on an average ambient upstream hardness of 37 mg/L CaCO, based on data submitted as part of the WET testing requirements. The current permit limits for copper are 0.029 lbs/day monthly average and 0.032 lbs/day daily maximum, and concentration-based equivalents of 0.35 mg/L and 0.39 mg/L, respectively.

Based on the most recent data, EPA has recalculated the copper effluent limitations. The hardness of the Wading River collected at the Barrows Street overpass between September 2000 and August 2004 ranged from 21 – 44 mg/L.[10] Taunton River Watershed Water Quality Data (2001) indicates that the hardness upstream of the Tweave discharge ranged from 41 – 47 mg/L, with an average of 44 mg/L.[11] Review of WET tests conducted over the past four years indicates the hardness of the Wading River upstream of the discharge ranged from 28 – 52 mg/L, with an average hardness of 37 mg/L. Therefore, the value of 37 mg/L was used as the receiving water hardness to calculate water quality-based limits. The daily maximum flow limit (0.01 MGD) was used to calculate the acute limit, and the monthly average flow limit (0.008 MGD) was used to calculate the chronic limit. Based on no dilution, as described above in Part IV.E.1.b, the calculations are as follows:

Water Quality based limits:

$m_a = 0.9422$ $b_a = -1.700$ CF = 0.960 h = 37

Acute criteria (dissolved) = exp {0.9422[ln(37)] + (-1.700)} * 0.960 = 5.27 ug/L
Acute limit (dissolved) = 5.27 ug/L
Acute limit (recoverable) = 5.27 / 0.960 = 5.49 ug/L = **0.0055 mg/L**
Acute mass-based limit (recoverable)=0.0055 mg/L*0.01 MGD*8.345 = **0.00046 lbs/day**

$m_c = 0.8545$ $b_c = -1.702$ CF = 0.960 h = 37

Chronic criteria (dissolved) = exp {0.8545[ln(37)] + (-1.702)} * 0.960 = 3.83 ug/L
Chronic limit (dissolved) = 3.83 ug/L
Chronic limit (recoverable) = 3.83 / 0.960 = 3.99 ug/L = **0.0040 mg/L**
Chronic mass-based limit(recoverable)=0.00399mg/L*0.008MGD*8.345=**0.00027lbs/day**

10 Taunton River Watershed 2001 Water Quality Assessment Report, MassDEP, December 2005.
11 Taunton River Watershed 2001 Water Quality Assessment Report, MassDEP, December 2005, Table 6: Taunton River Watershed Water Quality Data (2001), Wading River, Station WR-03, Mile Point: 5.

These water-quality mass limits of 0.00046 lbs/day daily maximum and 0.00027 lbs/day monthly average are more stringent than the current permit copper limits of 0.029 lbs/day monthly average and 0.032 lbs/day daily maximum; therefore, they shall be included in the draft permit. The draft permit shall require a water-quality based limit of 0.0055 mg/L as a daily maximum and 0.0040 mg/L as a monthly average.

Copper shall continue to be monitored quarterly. Review of DMR data shows that the current copper concentration limit has been exceeded on 7 occasions (both monthly average and daily maximum), with a maximum concentration of 1.3 mg/L, and the current copper mass limit has been exceeded on 2 occasions (both monthly average and daily maximum), with a maximum mass loading of 0.48 lbs/day.

n. Total Zinc

The current permit calculated water quality-based limits for total zinc of 3.6 mg/L as a daily maximum and monthly average. Since the previous permit limits of 1.0 mg/L as a monthly average and 1.5 mg/L as a daily maximum were more stringent, these limits were carried over into the current permit, based on acute toxicity test failures and anti-backsliding requirements.

Based on the most recent data, EPA has recalculated the water quality-based zinc effluent limitations. As explained above, the value of 37 mg/L was used as the receiving water hardness. The daily maximum flow limit (0.01 MGD) was used to calculate the acute limit, and the monthly average flow limit (0.008 MGD) was used to calculate the chronic limit. Based on no dilution, as described above in Part IV.E.1.b, the calculations are as follows:

Water Quality based limits:

$m_a = 0.8473$ $b_a = 0.884$ CF = 0.978 h = 37

Acute criteria (dissolved) = exp {0.8473[ln(37)] + (0.884)} * 0.978 = 50.5 ug/L
Acute limit (dissolved) = 50.5 ug/L
Acute limit (recoverable) = 50.5 / 0.978 = 51.6 ug/L = **0.052 mg/L**
Acute mass-based limit (recoverable)= 0.052 mg/L * 0.01 MGD * 8.345 = **0.0043 lbs/day**

$m_c = 0.8473$ $b_c = 0.884$ CF = 0.986 h = 37

Chronic criteria (dissolved) = exp {0.8473[ln(37)] + (0.884)} * 0.986 = 50.9 ug/L
Chronic limit (dissolved) = 50.9 ug/L
Chronic limit (recoverable) = 50.9 / 0.986 = 51.6 ug/L = **0.052 mg/L**
Chronic mass-based limit (recoverable)= 0.052 mg/L*0.008 MGD*8.345=**0.0034 lbs/day**

These water quality-based limits are more stringent than the current permit limits of 1.0 mg/L (and the mass-based equivalent of 0.067 lbs/day) as a monthly average and 1.5 mg/L (and the mass-based equivalent of 0.12 lbs/day) as a daily maximum; therefore, this limit of 0.052 mg/L (for both daily maximum and monthly average) shall be included in the draft permit. The draft permit shall also include the water-quality based mass equivalent limits, as calculated above, of 0.0043 lbs/day daily maximum and 0.0034 lbs/day monthly average.

Review of DMR data shows that the current permit limits have only been exceeded on one occasion, with a monthly average mass-loading of 0.67 lbs/day. The maximum daily mass of zinc in the discharge has averaged 0.01 lbs/day and the concentration of zinc has averaged 0.14 mg/L. Zinc shall continue to be monitored quarterly.

o. Aluminum

The 1996 Draft Taunton River Watershed Assessment Report notes that instream aluminum concentrations exceed the National Recommended Water Quality Criteria. The current fact sheet states that based on DMR submittals, the concentration of aluminum in the discharge was low, averaging 0.3 mg/L during 2003-2004. The 2004 permit re-application reported an aluminum concentration in the discharge of 0.29 mg/L. However, the fact sheet stated that the permittee shall continue to monitor and report total aluminum as part of the WET testing. However, review of WET tests reveals that the permittee has not been reporting aluminum concentrations as part of the WET tests. The current permit re-application dated November 23, 2009 does not sample for aluminum, as it is marked 'believed absent.'

The acute WET test requires monitoring for aluminum, among other metals, in the chemical analysis. The draft permit shall require reporting of aluminum in the table at Part I.A.1, as required by the WET test, for reporting on the DMRs. Aluminum is a concern based on the past use of aluminum sulfate at the facility as a treatment plant additive.

p. Color

Massachusetts Surface Water Quality Standards, found at 314 CMR 4.05 (3)(b)(6), state that Class B waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class. The permit re-application dated November 23, 2009 indicates the presence of color in the discharge, measured at 120 APCU. EPA noticed a visibly colored plume discharging from the sand filter through the pipes at Outfall 001 during a site visit.[12] The visible plume continued downstream in the un-named tributary for approximately 15 feet.

Aluminum sulfate is commonly used for color removal in wastewaters containing dyes. Although aluminum sulfate was previously used at the facility, Tweave confirmed (in an email dated 3/26/2010) that it is no longer an additive at the treatment plant.

The draft permit requires monthly sampling for color in platinum cobalt units (PCU). Also, the draft permit requires visual monitoring of the monthly color sample. The permittee shall record the best description of the sample color and submit this information in the comments section of the DMR. Additionally, the draft permit requires that the permittee develop and implement Best

12 Memorandum to Permit File (MA0005355), Trip Report, February 25, 2010.

Management Practices (BMPs) to remove the color from the effluent, and prohibits the discharge from causing objectionable discoloration of the receiving waters.

q. Whole Effluent Toxicity (WET)

Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Massachusetts Surface Water Quality Standards include the following narrative statement and requires that EPA criteria established pursuant to Section 304(a)(1) of the CWA be used as guidance for interpretation of the following narrative criteria: All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

The Region typically includes toxicity testing requirements where a combination of toxic constituents may be toxic to humans, aquatic life, or wildlife. Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts.

Due to the potential for toxicity resulting from the combination of pollutants in the facility's discharge, in accordance with EPA national and regional policy, and in accordance with MassDEP policy, the previous permit included acute and chronic toxicity monitoring requirements. (See *Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants, 50 Fed. Reg.* 30,784 (July 24, 1985); *EPA's Technical Support Document for Water Quality-Based Toxics Control* (EPA505/2-90-001, March 1991); and MassDEP's *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990).

The current permit requires quarterly acute WET tests, with an LC_{50} limit of 100% effluent or greater, for two species (*Ceriodaphnia dubia* and *Pimephales promelas*). The LC_{50} is defined as the concentration of wastewater (effluent) causing mortality to 50 percent of the test organisms. EPA has required acute, rather than chronic (and modified acute), WET testing for the Outfall 001 effluent since it is an intermittent discharge, rather than a continuous discharge.

The 1993 permit required the permitee to test three (3) species, *Ceriodaphnia dubia, Daphnia pulex,* and *Pimephales promelas*. Test results submitted as required by the 1993 permit clearly showed *Ceriodaphnia dubia* as the most sensitive of the three species tested. As a result, the WET testing requirements in the 2000 permit were reduced to a single specie, *Ceriodaphnia dubia.* However, the 2000 permit required the permittee to complete a Toxicity Identification Evaluation (TIE) and Toxicity Reduction Evaluation (TRE). The TIE report was due within 18 months of the effective date of the permit, which was October 9, 2000. The TRE was to be completed within 12 months of the TIE. As of October 2003, neither evaluation had been submitted. Following several odor complaints, MassDEP conducted an inspection in October 2003. In November 2003, DEP issued the facility a notice of non-compliance (NON) for WET testing violations, noncompliance with the TIE/TRE requirements, and operations and maintenance problems. The NON required the permittee to complete the TIE within 180 days of November 26, 2003. The TIE was received by EPA on May 20, 2004. The TIE identifies metals, specifically copper and zinc, as likely causes of toxicity. However, the TIE was not consistent

with EPA Guidance as required. The facility was to investigate options for reducing metals concentrations in the discharge. The facility also identified alcohols and alkoxylated alcohols in the discharge. Tweave was supposed to address these issues in their Toxicity Reduction Evaluation (TRE), due in January 2005. Tweave submitted a TRE dated November 18, 2004 and and updated TRE dated January 13, 2005. These submittals indicate that the historical metal levels have not been sufficiently reduced.

Review of DMR data collected from February 2005 to September 2009 reveals that the acute limit has been exceeded on one occasion for *Ceriodaphnia dubia* and on two occasions for *Pimephales promelas*. Review of WET test reports reveals that the quarterly acute tests have been repeated several times over the past years, based on exceedences of the acute limit.

Given the complexity of this discharge and the toxicity issues at this facility, the draft permit shall continue to require quarterly acute WET tests, with an LC_{50} limit of 100% effluent or greater, for two species (*Ceriodaphnia dubia* and *Pimephales promelas*). Additionally, as outlined above, the draft permit requires more stringent metals limitations, which is expected to reduce the toxicity of the discharge.

EPA has required acute, rather than chronic (and modified acute), WET testing for the Outfall 001 effluent since it is an intermittent discharge, rather than a continuous discharge.

The tests must be performed in accordance with test procedures and protocols specified in Attachment 1 of the permit. The tests shall be performed the second week of the following months: January, April, July, and October and submitted, respectively, by February 28th, May 31st, August 31st, and November 30th. In the event there is no discharge during the second week of the specified months, the permittee shall sample as soon as practicable thereafter, and submit the test results by the last day of the month following completion of the test.

2. <u>Discharges of Collected Stormwater (Outfalls 001A and 001B)</u>

Dilution of process water by stormwater is not an allowable form of treatment to meet technology-based limits. Therefore, the current practice of commingling process water (prior to sampling and treatment) with stormwater collected in the equalization basin or the secondary clarifier, or any other collection unit, shall be prohibited by the draft permit. Stormwater discharges shall be sampled separately, as internal outfalls, prior to commingling with any process water and after all the samples at Outfall 001 for the monitoring period have been collected (to avoid dilution of the Outfall 001 process water sample with stormwater). Additionally, the permittee shall allow at least two weeks after any discharge from Internal Outfalls 001A and/or 001B prior to sampling Outfall 001 to prevent commingling of process water and stormwater.

Specifically, discharge of stormwater which collects in the treatment system components currently out of service [the equalization basin (Outfall 001A), and secondary clarifier (Outfall 001B)] shall be monitored in the draft permit for the parameters described below.

This requirement not to allow commingling of stormwater and process water also applies to use of the equalization basin (which collects stormwater) as excess process water storage. The permittee shall discontinue use of the equalization basin as excess process water storage. The collected stormwater shall remain separate from the process water prior to sampling.

Sampling requirements for the discharge of stormwater from the equalization basin (Outfall 001A), and secondary clarifier (Outfall 001B) to the un-named tributary shall consist of monthly sampling for flow and pH (with a limit of 6.5 – 8.3 SU), and annual sampling for Biological Oxygen Demand (BOD_5), Total Suspended Solids (TSS), Chemical Oxygen Demand (COD), Oil and Grease (O&G), Total Sulfides, Total Phosphorus, Total Kjeldahl Nitrogen (TKN), Nitrite-Nitrate (as N), Total Phenols, Total Chromium, Total Copper, Total Zinc, Aluminum, and Color.

3. Special Conditions and Requirements

The draft permit shall require development of Best Management Practices (BMPs) to be followed in operating the facility, cleaning tanks and other equipment and disposing of any liquid and solid waste. The purpose of the plan is to identify and to describe the practices which minimize the amounts of pollutants discharged to surface waters.

The permittee shall develop and implement appropriate BMPs to re-evaluate the entire treatment system design and optimize the treatment obtained from each unit. Within **one year of the effective date of the permit**, the permittee shall complete an evaluation of alternative methods of operating the existing treatment system to optimize the treatment efficiency, or adding treatment, and submit a report to EPA and MassDEP documenting this evaluation and presenting a description of recommended operational or treatment changes. The methods to be evaluated include, but are not limited to, operational or treatment changes designed to remove color, to eliminate the toxicity of the discharge, to reduce the nitrogen loading, and to reduce the metal loading in the discharge to the un-named tributary. The BMP plan shall include the following requirements, at a minimum:

a. Within **18 months of the effective date of the permit**, the permittee shall implement the recommended operational changes in order to remove the discharge of a visibly colored plume, to eliminate the toxicity of the discharge, to reduce the nitrogen loading, and to reduce the metal loading to the receiving water. The permittee shall submit annual reports to EPA and MassDEP, **on each year following the effective date of the permit,** which summarizes progress and activities related to optimizing the treatment system or adding additional treatment, as described below:

    i. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate the discharge of color. The permit requires annual reports be submitted that summarize progress and activities related to optimizing color removal efficiencies, document the monthly color observations throughout the year, and track trends relative to previous

years. The permittee shall develop BMPs to eliminate the discharge of a visibly colored plume.

ii. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate (or reduce to the maximum extent possible) the toxicity of the discharge. The permit requires annual reports be submitted that summarize progress and activities related to optimizing toxicity removal efficiencies. The permittee shall develop BMPs to determine the source(s) of toxicity in the discharge and eliminate, or reduce to the maximum extent possible, the toxicity of the discharge.

iii. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to control total nitrogen levels, and to implement optimization methods sufficient to ensure that there is no increase in total nitrogen compared to the existing average daily load. The annual average total nitrogen load from this facility (for the period of February 2005 – September 2009) is estimated to be 1.44 lbs/day. The permit requires annual reports be submitted that summarize progress and activities related to optimizing nitrogen removal efficiencies, document the annual nitrogen discharge load from the facility, and track trends relative to previous years. Additionally, the permittee shall develop BMPs to determine the source(s) of nitrogen in the discharge and eliminate, or reduce to the maximum extent possible, the concentration of nitrogen in the discharge.

iv. The permittee shall develop appropriate BMPs to evaluate alternative methods of operating the treatment system or adding additional treatment in order to eliminate (or reduce to the maximum extent possible) the metal loading to the discharge. The permit requires annual reports be submitted that summarize progress and activities related to optimizing metal removal efficiencies. The permittee shall develop BMPs to determine the source(s) of metals in the discharge and eliminate, or reduce to the maximum extent possible, the metal loading to the discharge.

b. The permittee shall conduct regular inspections and maintenance of the treatment system to ensure that all treatment units are properly functioning. This inspection and maintenance requirement shall be included in the BMP plan.

c. The permittee shall develop and implement appropriate BMPs to ensure the discharges of process water and collected stormwater are no longer commingled prior to sampling, as was previously done at the facility. The current practice of commingling process water (prior to sampling) with stormwater from the equalization basin and stormwater from the secondary clarifier is prohibited in the permit.

V. ENDANGERED SPECIES ACT

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA) grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The United States Fish and Wildlife Service (USFWS) typically administer Section 7 consultations for bird, terrestrial, and freshwater aquatic species.

The town of Norton is located in Bristol County. EPA has reviewed the federal endangered or threatened species of fish and wildlife in Bristol County to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. Based on the normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge. In addition, the effluent limitations and conditions which are in place in the draft permit should preclude any adverse effects should there be any incidental contact with listed species. EPA is coordinating a review of this finding with NMFS and USFWS through the draft permit and fact sheet.

VI. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with NMFS if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat" (EFH). The Amendments define EFH as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," (16 U.S.C. § 1802(10)). "Adverse impact" means any impact which reduces the quality and/or quantity of EFH (50 C.F.R. 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b)(1)(A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

A review of available EFH information indicates that the Wading River is not designated EFH for any federally managed species. Therefore, consultation with NMFS is not required. If adverse effects are detected as a result of this permit action, NMFS will be notified and an EFH consultation will promptly be initiated. During the public comment period, EPA has provided a copy of the draft permit and fact sheet to NMFS.

VII. MONITORING AND REPORTING

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41 (j), 122.44 (l), and 122.48.

The Draft Permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt out request").

In the interim (until one year from the effective date of the permit), the permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR § 122.41 and § 403.12. NetDMR is accessed from the following url: http://www.epa.gov/netdmr Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. To participate in upcoming trainings, visit http://www.epa.gov/netdmr for contact information for Massachusetts.

The Draft Permit requires the permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

The Draft Permit also includes an "opt-out" requests process. Permittees who believe they can not use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the permittee must submit DMRs and reports to EPA using NetDMR, unless the permittee submits a renewed opt out request sixty (60) days prior to expiration of its opt out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format.

VIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Surface Water Quality Standards or unless state certification is waived. The staff of the MassDEP has reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects that the draft permit will be certified.

IX. ADMINISTRATIVE RECORD, PUBLIC COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISION

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection Attn: Nicole Kowalski, 5 Post Office Square, Suite 100 (OEP06-4), Boston, Massachusetts 02109-3912 or via email to kowalski.nicole@epa.gov. The comments should reference the name and permit number of the facility for which they are being provided.

Any person, prior to such date, may submit a request in writing to EPA and the States Agency for a public hearing to consider the draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit, the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of final permit decision, permits may be appealed to the Environmental Appeals Board in the manner described at 40 CFR § 124.19.

X. EPA & MassDEP CONTACTS

Additional information concerning the draft permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from the EPA and MassDEP contacts below:

Nicole Kowalski, EPA New England – Region 1

5 Post Office Square, Suite 100 (OEP06-4)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1746 FAX: (617) 918-0746
email: kowalski.nicole@epa.gov

Kathleen Keohane, Massachusetts Department of Environmental Protection
Division of Watershed Management, Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608
Telephone: (508) 767-2856 FAX: (508) 791-4131
email: kathleen.keohane@state.ma.us

_____
Date

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

XI. ATTACHMENTS

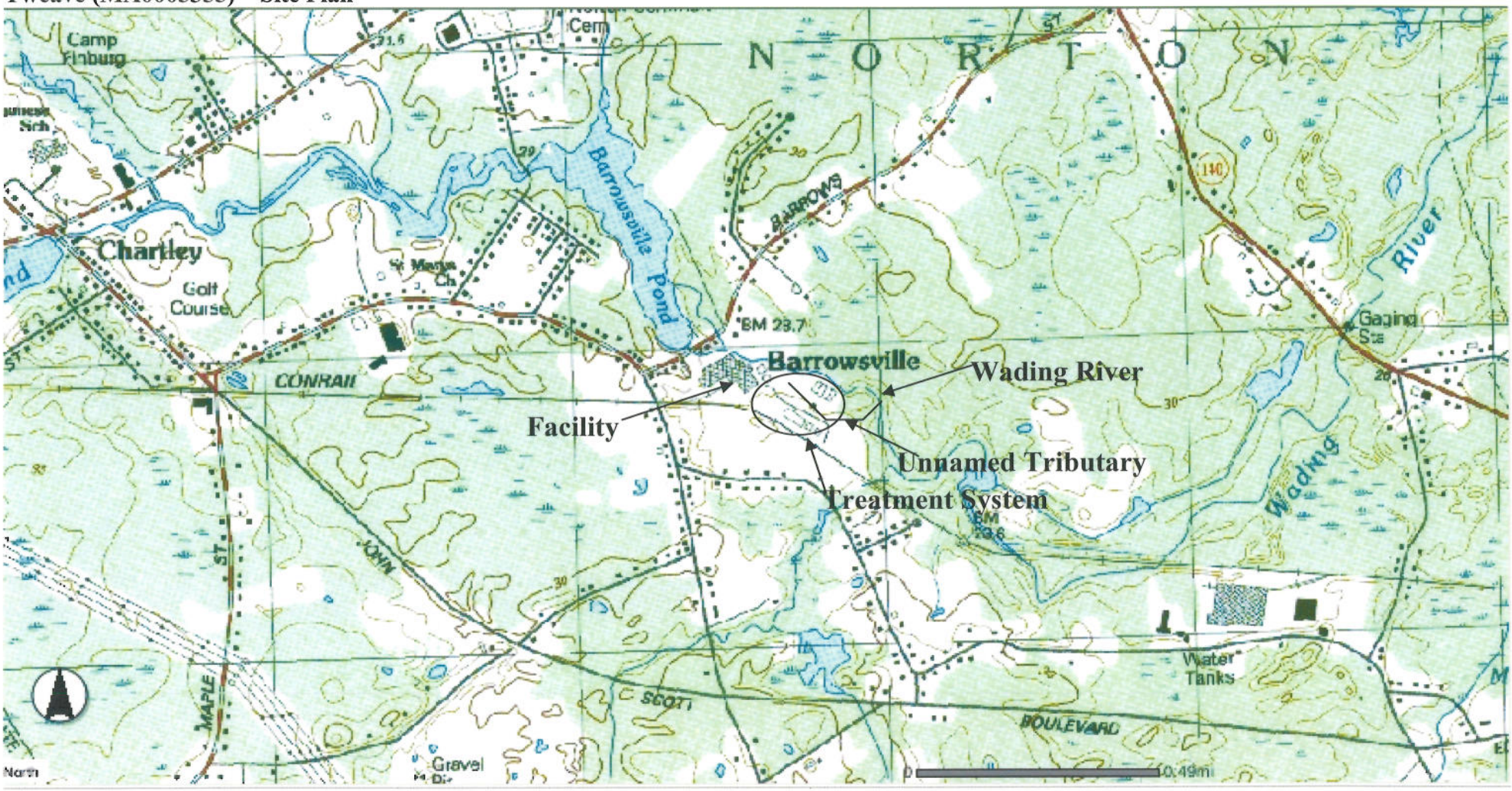
A. Site Plan

B. DMR Data Summary

C. Facility Map

D. Current Water Flow Schematic

ATTACHMENT A
Tweave (MA0005355) – Site Plan



ATTACHMENT B
Tweave (MA0005355) - DMR Data Summary

Outfall 001	BOD5				Flow		TKN	Nitrogen Nitrate, as N	Nitrogen Nitrite, as N	pH		phosphorus
	1.34 lb/d	2.5 lb/d	20 mg/L	30 mg/L	8000 gal/d	10000 gal/d	Req. Mon. mg/L	Req. Mon. mg/L	Req. Mon. mg/L	6.5 SU	8.3 SU	Req. Mon. mg/L
MP Date	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MX	DAILY MX	DAILY MX	MINIMUM	MAXIMUM	DAILY MX
2/28/2005	.516	1.08	16.	16.	3863.	8100.	24.1	8.4	.189	6.5	7.	.8
3/31/2005	.398	.8	12.	12.	3980.	8000.	22.1	6.7	.06	6.5	6.9	.9
4/30/2005	.194	.33	4.	4.	5807.	10000.	11.4	4.3	.04	6.5	6.9	.4
5/31/2005	.386	.67	8.	8.	5886.	10000.	10.2		.206	6.5	6.9	11.
6/30/2005	.099	.17	2.	2.	5957.	10000.	6.5	12.1	.035	6.5	6.8	1.
7/31/2005	.13	.25	3.	3.	5200.	10000.	7.6	7.3	.04	6.5	7.	.7
8/31/2005	.616	1.08	13.	13.	5683.	10000.	9.8	15.	.07	6.5	7.9	1.1
9/30/2005	.12	.25	3.	3.	4.89	10000.	11.	10.5	.2	6.5	6.9	1.5
10/31/2005	.5	1.17	14.	14.	4343.	10000.	9.4		.25	6.5	7.1	1.9
11/30/2005	.71	1.42	17.	17.	5006.	10000.	13.3	3.7	.321	6.5	6.9	1.8
12/31/2005	.27	.83	10.	10.	3240.	10000.	1.08		.04	6.5	7.1	.9
1/31/2006	.39	.83	10.	10.	4700.	10000.	12.8	.48	.05	6.5	6.9	1.1
2/28/2006	.45	1.25	15.	15.	3600.	10000.	.26		.008	6.5	6.9	38.7
3/31/2006	.45	1.25	6.	6.	5250.	10000.	22.6	.29	.026	6.5	7.	.8
4/30/2006	.57	1.42	17.	17.	4030.	10000.	36.1	1.05	.033	6.5	7.	1.
5/31/2006	.43	1.	12.	12.	4343.	10000.	25.7	9.1	.015	6.5	6.9	2.3
6/30/2006	.829	2.09	25.	25.	3976.	10000.	8.	.03	.	6.5	6.9	18.
7/31/2006	.55	3.42	41.	41.	1620.	10000.	40.5	17.1	1.225	6.5	6.9	.7
8/31/2006	.934	3.	36.	36.	3.11	10000.	10.4	8.4	.91	6.5	7.1	.9
9/30/2006	.694	2.92	35.	35.	3303.	10000.	4.7	.64	3.5	6.5	6.9	1.7
10/31/2006	.22	.5	6.	6.	4570.	10000.	7.2	3.5	.307	6.5	7.1	1.8
11/30/2006	.268	.42	5.	5.	6427.	10000.	16.5	10.5	1.42	7.	6.5	1.1
12/31/2006	.195	.33	4.	4.	5843.	10000.	9.4	8.7	.007	6.6	7.1	.7
1/31/2007	.102	.42	5.	5.	2450.	10000.	18.9	9.8	.201	6.5	7.1	1.2
2/28/2007	.965	7.26	87.	87.	1330.	10000.	19.	.98	.022	6.5	7.1	.8
3/31/2007	.24	.56	6.7	6.7	4323.	10000.	21.	1.2	.052	6.5	6.9	1.5
4/30/2007	.109	.33	4.	4.	3260.	10000.	24.	4.9	1.094	6.5	6.9	.4
5/31/2007	.379	1.33	16.	16.	2837.	10000.	16.4	14.1	.029	6.9	6.9	2.6
6/30/2007	.03	.03	4.	4.	913.	10000.	3.2	8.7	.007	6.7	7.2	.6
7/31/2007	.071	.33	4.	4.	2140.	10000.	2.	11.94	.04	6.5	8.7	1.1
8/31/2007	.167	.33	4.	4.	5000.	10000.	3.86	16.3	.26	6.5	6.9	.1
9/30/2007	.018	.23	2.8	2.8	4617.	10000.	3.88	10.	.0338	6.5	6.9	.8
10/31/2007	.105	.36	4.3	4.3	2920.	10000.	2.83	18.9	.022	6.5	7.1	.9
11/30/2007	.035	.3	3.6	3.6	1180.	10000.	1.13	8.29	.0485	6.5	6.9	.3
12/31/2007	.138	.138	4.	4.	4123.	10000.	6.02	7.37	.499	6.5	7.	.5
1/31/2008	2.785	5.09	61.	61.	5473.	10000.	6.51	2.96	3.14	6.5	7.	1.
2/29/2008	.202	.33	4.	4.	6060.	10000.	3.69	7.1	.404	6.5	6.9	.6
3/31/2008	.223	.33	4.	4.	6693.	10000.	2.9	6.83	.634	6.5	7.1	1.
4/30/2008	.18	.31	4.	4.	5500.	9200.	2.22	9.58	.022	6.5	6.8	.9
5/31/2008	.17	.33	4.	4.	5117.	10000.	2.11	11.	.0237	6.5	6.9	1.7
6/30/2008	.51	.51	4.	4.	4533.	10000.	2.52	22.4	.22	6.5	7.1	2.7
7/31/2008	.205	.205	5.	5.	4907.	10000.	2.57	10.2	.2227	6.5	6.8	1.44
8/31/2008	.187	.33	4.	4.	5620.	10000.	1.52	9.64	.022	6.5	6.9	1.3
9/30/2008	.251	.42	5.	5.	6020.	10000.	1.67	10.4	.022	6.5	7.1	1.1
10/31/2008	.174	.33	4.	4.	5210.	10000.	1.63	16.7	.022	6.5	6.8	1.5
11/30/2008	.167	.33	4.	4.	5003.	10000.	2.58	5.8	.007	6.5	6.8	1.3
12/31/2008	.262	.42	5.	5.	6273.	10000.	4.67	5.17	.67	6.5	6.8	.1
1/31/2009	.163	1.18	14.	14.	6040.	10000.	3.65	1.32	13.9	6.8	6.8	1.7
2/28/2009	.124	.12	3.9	3.9	5473.	10000.	1.61	3.49	1.39	6.5	6.5	.462
3/31/2009	.088	1.5	18.	18.	6473.	10000.	4.23	12.1	7.36	7.5	7.5	1.66
4/30/2009	.666	.71	8.5	8.5	7413.	10000.	3.51	1.95	.022	6.72	6.72	1.7
5/31/2009	1.34	2.5	5.	5.	5300.	10000.	3.2	11.	.5	6.74	6.74	1.2
6/30/2009	1.34	2.5	2.	2.	5803.	10000.	2.5	7.6	.09	6.88	6.88	.99
7/31/2009	.478	.51	6.1	6.1	5677.	10000.	2.	12.	.05	6.7	6.7	2.06
8/31/2009	.286	.29	3.5	3.5	5423.	10000.	2.6	7.8	.05	6.7	6.7	1.24
9/30/2009	.26	.4	4.8	4.8	5740.	10000.	2.3	8.3	.06	6.9	6.9	1.93
10/31/2009												
Outfall 001	BOD5				Flow		TKN	Nitrogen Nitrate, as N	Nitrogen Nitrite, as N	pH		phosphorus
Effluent Limit	1.34 lb/d	2.5 lb/d	20 mg/L	30 mg/L	8000 gal/d	10000 gal/d	Req. Mon. mg/L	Req. Mon. mg/L	Req. Mon. mg/L	6.5 SU	8.3 SU	Req. Mon. mg/L
	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MX	DAILY MX	DAILY MX	MINIMUM	MAXIMUM	DAILY MX
maximum	2.79	7.26	87.00	87.00	7413.00	10000.00	40.50	22.40	13.90	7.50	8.70	38.70
minimum	0.02	0.03	2.00	2.00	3.11	8000.00	0.26	0.03	0.00	6.50	6.50	0.10
average	0.40	1.01	11.31	11.31	4490.70	9916.07	8.98	8.15	0.72	6.57	6.98	2.31
exceedences	1	5	6	5	0	0	NA	NA	NA	0	1	NA

TSS				LC50 - Ceriodaphnia	LC50 - Pimephales	Copper				O&G	COD			
1.34 lb/d	2.5 lb/d	20 mg/L	30 mg/L	100 %	100 %	.029 lb/d	.032 lb/d	.35 mg/L	.39 mg/L	15 mg/L	27 lb/d	50 lb/d	400 mg/L	600 mg/L
MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MN	DAILY MN	MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX
.322	.68	10.	10.	100.	100.									
.166	.33	5.	5.											
.242	.42	5.	5.			.001	.001	.017	.017	2.	5.291	5.291	134.	134.
.483	.83	10.	10.	100.	100.									
.59	1.	12.	12.											
.13	.25	3.	3.			.002	.002	.036	.036	2.	9.586	9.586	221.	221.
.19	.33	4.	4.	100.	100.									
.16	.33	4.	4.											
.217	.5	6.	6.			.025	.025	.5	.5	5.	6.46	6.46	138.	138.
.42	.83	10.	10.	100.	100.									
.189	.58	7.	7.											
.19	.42	5.	5.			.017	.017	.4	.4	10.	8.076	8.076	204.	204.
.42	1.17	14.	14.	100.	100.									
.42	1.17	6.	6.											
.57	1.42	17.	17.			.004	.004	.2	.2	4.	4.896	4.896	183.	183.
.5	1.17	14.	14.	6.25	64.									
.232	.58	7.	7.											
.392	2.42	29.	29.			.048	.048	1.3	1.3	8.	12.6	12.6	333.	333.
.104	.33	4.	4.	100.	100.									
.11	.33	4.	4.											
.03	.08	1.	1.			.018	.018	.74	.74		3.582	3.582	148.	148.
.107	.17	2.	2.	100.	67.									
.195	.33	4.	4.											
.143	.58	7.	7.			.002	.002	.04	.04	4.	6.758	6.758	170.	170.
.044	.33	4.	4.	100.	100.									
.25	.58	7.	7.											
.15	.46	5.5	5.5			.004	.004	.2	.2	4.	4.8696	4.8696	183.	183.
.072	.96	11.5	11.5	100.	100.									
.015	.015	2.	2.											
.125	.58	7.	7.			.001	.001	.	.	13.2	6.634	6.634	229.	229.
.209	.42	5.	5.	100.	100.									
.	.	.	.											
.097	.33	4.	4.			.003	.003	.1	.1	5.	.837	.837	37.4	37.4
.039	.33	4.	4.	100.	100.									
1.38	1.38	4.	4.											
.502	.92	11.	11.			.001	.001	.04	.04	9.9	2.447	2.447	101.	101.
.202	.33	4.	4.	100.	100.									
.233	.33	4.	4.											
.18	.31	4.	4.			.004	.004	.1	.1	5.4	2.424	2.424	75.6	75.6
.17	.33	4.	4.	100.	100.									
.51	.51	4.	4.											
.164	.164	4.	4.			.013	.013	.3	.3	5.	5.871	5.871	122.	122.
.187	.33	4.	4.	100.	100.									
.201	.33	4.	4.											
.174	.33	4.	4.			.001	.001	.027	.027	11.5	1.922	1.922	45.9	45.9
.167	.33	4.	4.	100.	100.									
.209	.33	4.	4.											
.47	.34	4.	4.			.001	.001	.021	.021	6.9	3.52	3.52	78.	78.
.	.	.	.	100.	100.									
1.34	2.5	4.	4.											
		4.	4.			.028	.028	.896	.896	9.05	2.573	2.573	81.2	81.2
1.34	2.5			100.	100.									
.056	.52	6.2	6.2											
1.34	2.5	5.	5.			.004	.004	.468	.468	4.2	.873	.873	97.	97.
1.34	2.5	5.	5.	100.	100.									
1.34	2.5	5.	5.											
.298	.46	5.5	5.5			.034	.034	.421	.421	4.	7.192	7.192	88.	88.

TSS				LC50 - Ceriodaphnia	LC50 - Pimephales	Copper				O&G	COD			
1.34 lb/d	2.5 lb/d	20 mg/L	30 mg/L	100 %	100 %	.029 lb/d	.032 lb/d	.35 mg/L	.39 mg/L	15 mg/L	27 lb/d	50 lb/d	400 mg/L	600 mg/L
MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MN	DAILY MN	MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX
1.38	2.50	29.00	29.00	100.00	100.00	0.048	0.048	1.300	1.300	13.20	12.60	12.60	333.00	333.00
0.00	0.00	0.00	0.00	6.25	64.00	0.001	0.001	0.000	0.000	0.00	0.84	0.84	37.40	37.40
0.35	0.71	6.03	6.03	95.07	96.37	0.011	0.011	0.306	0.306	5.85	5.07	5.07	140.48	140.48
1	0	1	0	1	2	2	2	7	7	0	0	0	0	0

Zinc				Chromium				Phenols				Sulfide			
.067 lb/d	.12 lb/d	1 mg/L	1.5 mg/L	.067 lb/d	.12 lb/d	1 mg/L	1.5 mg/L	.04 lb/d	.06 lb/d	.6 mg/L	.72 mg/L	.17 lb/d	.34 lb/d	2.5 mg/L	4.1 mg/L
MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX
.0008	.0008	.02	.02												
.009	.0009	.02	.02												
.0041	.0041	.1	.1												
.0016	.0016	.4	.4	.003	.003	.1	.1	.002	.002	.05	.05	.008	.008	.2	.2
.0008	.0008	.03	.03												
.0008	.0008	.02	.02												
.004	.004	.168	.168												
.0007	.0007	.2	.2	.002	.002	.077	.077	.003	.003	.11	.11	.	.	.	.
.008	.008	.03	.03												
.00086	.00086	.	.												
.002239	.002239	.1	.1												
.002423	.002433	.1	.1	.008	.008	.3	.3	.003	.003	.5	.5	.0015	.0015	.2	.2
.003	.003	.1	.1												
.0048	.0048	.1	.1												
.00569	.00569	1.	1.												
.0065	.0065	.146	.146	.007	.007	.61	.61	.001	.001	.05	.05	.002	.002	.184	.184
.	.	.	.												
.05	.05	.05	.05												
.67	.12	.05	.05												

Zinc				Chromium				Phenols				Sulfide			
.067 lb/d	.12 lb/d	1 mg/L	1.5 mg/L	.067 lb/d	.12 lb/d	1 mg/L	1.5 mg/L	.04 lb/d	.06 lb/d	.6 mg/L	.72 mg/L	.17 lb/d	.34 lb/d	2.5 mg/L	4.1 mg/L
MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX
0.670	0.120	1.000	1.000	0.008	0.008	0.61	0.61	0.00	0.00	0.50	0.50	0.01	0.01	0.20	0.20
0.000	0.000	0.000	0.000	0.002	0.002	0.08	0.08	0.00	0.00	0.05	0.05	0.00	0.00	0.00	0.00
0.041	0.011	0.139	0.139	0.005	0.005	0.27	0.27	0.00	0.00	0.18	0.18	0.00	0.00	0.15	0.15
1.000	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	0	0	0	0	0

ATTACHMENT C
Tweave LLC (MA0005355) – Facility Map

Legend

Mass. Towns Boundaries

EOT-OTP Roads

Limited Access Highway

Multi-lane Hwy, Not Limited Access

Other Numbered Hwy

Wetland Connections

Wetlands 12k Detailed

Barrier Beach System

Barrier Beach-Deep Marsh

Barrier Beach-Wooded Swamp Mixed Trees

Barrier Beach-Coastal Beach

Barrier Beach-Coastal Dune

Barrier Beach-Marsh

Barrier Beach-Salt Marsh

Barrier Beach-Wooded Swamp Coniferous

Barrier Beach-Wooded Swamp Deciduous

Bog

Coastal Bank Bluff or Sea Cliff

Coastal Beach

Coastal Dune

Cranberry Bog

Deep Marsh

Barrier Beach-Open Water

Open Water

Rocky Intertidal Shore

Salt Marsh

Shallow Marsh Meadow or Fen

Shrub Swamp

Tidal Flat

Wooded Swamp Coniferous

Wooded Swamp Deciduous

Wooded Swamp Mixed Trees

Attachment D
Tweave LLC (MA0005355) –Water Flow Schematic