

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),

**Seaman Paper Company of Massachusetts, Inc.  
P.O. Box 21  
Baldwinville, MA 01436**

is authorized to discharge from a facility located at

**Seaman Paper Company of Massachusetts, Inc.  
51 Main Street  
Otter River, MA 01436**

to receiving water named

**Otter River**

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

This permit modification reflects the following changes, includes the entire permit with the modified and unmodified permit conditions to allow a re-pagination of the permit for convenience, and consists of 13 pages in Part I: ***The effluent limitation range for pH in Part I.A.1 has been replaced with an effluent limitation range of 6.0 – 8.3 SU. The revised language is in bold italics.***

This permit action modifies the permit issued on September 30, 2008, which became effective on, November 29, 2008.

This permit modification shall become effective on the first day of the calendar month following 60 days after signature.

This permit modification does not affect the expiration date of the permit. The original permit stated, "This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date." The permit became effective on November 29, 2008. Therefore, the original permit and this permit modification expire at midnight, October 30, 2013.

This permit, together with the modification, supersedes the permit issued on October 14, 2004, which expired on September 30, 2007.

This permit consists of 13 pages in Part I including effluent limitations, monitoring requirements, 7 pages in Attachment 1 – Freshwater Chronic Toxicity Test Procedure and Protocol, and 25 pages in Part II including Standard Conditions and Definitions.

**Signed this 9<sup>th</sup> day of September, 2009**

**/S/ SIGNATURE ON FILE**

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Stephen S. Perkins, Director  
Office of Ecosystem Protection  
Environmental Protection Agency  
Region 1  
Boston, MA

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Glenn Haas, Director  
Division of Watershed 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 water through **Outfall Serial Number 001** to Otter 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	Units	Discharge Limitation		Monitoring Requirements <sup>1</sup>	
		Average Monthly	Maximum Daily	Measurement Frequency <sup>3</sup>	Sample Type
Flow Effluent Upstream <sup>5</sup>	MGD cfs	1.1 Report	1.4 Report <sup>6</sup>	Continuous 1/Day	Meter Monitor
BOD <sup>13</sup> (May 1 <sup>st</sup> – October 31 <sup>st</sup> ) (November 1 <sup>st</sup> – April 30 <sup>th</sup> )	lbs/day lbs/day	286 400	400 700	1/Week 1/Week	Composite <sup>4</sup> Composite <sup>4</sup>
Total Suspended Solids (TSS) <sup>13</sup> (May 1 <sup>st</sup> – October 31 <sup>st</sup> ) (November 1 <sup>st</sup> – April 30 <sup>th</sup> )	lbs/day lbs/day	400 700	600 900	1/Week 1/Week	Composite <sup>4</sup> Composite <sup>4</sup>
pH <sup>2</sup>	SU	----	<b>6.0 – 8.3</b>	1/Day	Grab
Phosphorus (April 1 <sup>st</sup> – October 31 <sup>st</sup> )	mg/L	0.2	----	2/Week	Composite <sup>4</sup>

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements <sup>1</sup>	
		Average Monthly	Maximum Daily	Measurement Frequency <sup>3</sup>	Sample Type
Temperature <sup>6</sup>					
Effluent	°F	Report	90°F	2/Week	Grab
Upstream	°F	Report	Report <sup>6</sup>	2/Week	Grab
PRTI <sup>10</sup>	°F	Report	Report	2/Week	Calculate
Total Aluminum <sup>12</sup>	mg/L	0.29	2.1	2/Year	Composite <sup>4</sup>
Dissolved Oxygen (June 1 <sup>st</sup> – September 30 <sup>th</sup> )	mg/L	----	Report Minimum <sup>11</sup>	2/Month	Grab
Ammonia	mg/L	Report	----	1/Week	Composite <sup>4</sup>
Iron	mg/L	Report	Report	1/Week	Composite <sup>4</sup>
Whole Effluent Toxicity (WET)					
Acute LC <sub>50</sub> <sup>7,8</sup>	%	≥100		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Chronic C-NOEC <sup>7,8</sup>	%	≥30		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Hardness <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Alkalinity <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
pH <sup>9</sup>	SU	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Specific Conductance <sup>9</sup>	µmhos/cm	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Total Solids <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Total Ammonia Nitrogen (as N) <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Total Organic Carbon <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Total Residual Chlorine <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>
Dissolved Oxygen <sup>9</sup>	mg/L	Report		1/Quarter <sup>2</sup>	Composite <sup>4</sup>

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements <sup>1</sup>	
		Average Monthly	Maximum Daily	Measurement Frequency <sup>3</sup>	Sample Type
Whole Effluent Toxicity (continued)					
Total Cadmium <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Chromium <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Lead <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Copper <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Zinc <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Nickel <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Aluminum <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Magnesium <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>
Total Calcium <sup>9</sup>	mg/L	Report		1/Quarter <sup>3</sup>	Composite <sup>4</sup>

See pages 6 – 8 for explanation of footnotes.

**(Part I.A.1, Continued)****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 mixing with the receiving waters. Specifically, effluent samples for Outfall 001 shall be collected from the channel (“rippleway”) that receives final plant effluent from the secondary clarifier, unless otherwise specified. Any changes in sampling location must be 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. Required for state certification.
3. Sampling frequency of 1/day is defined as the sampling of one (1) discharge event during each 24-hour period, when discharge occurs. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event in each calendar week, when discharge occurs. Sampling frequency of 2/week is defined as the sampling of two (2) discharge events in each calendar week, when discharge occurs. Sampling frequency of 2/month is defined as the sampling of two (2) discharge events in each calendar month, when discharge occurs. Sampling frequency of 1/quarter is defined as the sampling of one (1) discharge event in each calendar quarter, when discharge occurs. Quarterly samples shall be collected during the second weeks in January, April, July, and October. Sampling frequency of 2/year is defined as the sampling of two (2) discharge events in each calendar year, when discharge occurs. One biannual sample shall be collected during the time period from (June 1<sup>st</sup> – September 30<sup>th</sup>) and the other shall be collected during the time period from (October 1<sup>st</sup> – May 31<sup>st</sup>). 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).
4. A 24-hour composite will consist of twenty-four (24) grab samples collected at hourly intervals during a twenty-four hour period (i.e., 0700 Monday to 0700 Tuesday), combined proportionally to flow.
5. The permittee shall obtain daily ambient upstream river flow readings from the USGS Gage No. 01163200, located at Turner Street in Otter River.
6. The permittee shall report the upstream ambient river temperature and the ambient river flow rate concurrent with the daily maximum discharge temperature reported for Outfall 001. The permittee shall report the daily ambient upstream river water temperature which was taken as close in time as possible, but no greater than 1 hour, from the reported daily maximum discharge temperature. The permittee shall report the ambient river flow rate that corresponds to the same day that the maximum daily effluent temperature for the month occurred. The upstream sampling location shall be representative of naturally occurring conditions in the Otter River and must be taken prior to mixing with any of the discharges from Seaman Paper. The permit may be reopened to include additional temperature limits if the monitoring indicates that the effluent is causing or contributing to an exceedence of water quality standards.
7. The permittee shall conduct quarterly chronic (and modified acute) toxicity tests. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia. 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 28<sup>th</sup>, May 31<sup>st</sup>, August 31<sup>st</sup>, and November 30<sup>th</sup>, respectively. 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 <sub>50</sub>	Chronic Limit C-NOEC
January April July October	February 28 <sup>th</sup> May 31 <sup>st</sup> August 31 <sup>st</sup> November 30 <sup>th</sup>	Ceriodaphnia dubia (Daphnid)	≥ 100 %	≥ 30 %

After submitting one year and a minimum of four consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

8. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlines in Section IV (Dilution Water) of Attachment 1 in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required in Attachment 1, EPA-New England has developed a Self-Implementing Alternative Dilution Water Guidance document (called “Guidance Document”) which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If this Guidance Document is revoked, the permittee shall revert to obtaining approval as outlined in Attachment 1. The “Guidance Document” has been sent to all permittees with their annual set of DMRs and Revised Updated Instructions for Completing EPA’s Pre-Printed NPDES Discharge Monitoring Report (DMR) Form 3320-1 and is not intended as a direct attachment to this permit. Any modification or revocation to this “Guidance Document” 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.
9. For each Whole Effluent Toxicity (WET) test the permittee shall report on the appropriate Discharge Monitoring Report (DMR), the concentrations of the Hardness, Total Ammonia Nitrogen as Nitrogen, Alkalinity, pH, Specific Conductance, Total Solids, Total Organic Carbon, Total Residual Chlorine, Dissolved Oxygen, Aluminum, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Magnesium, and Calcium found in the 100 percent effluent sample. Metals shall be reported as total recoverable concentrations. The permittee should note that all chemical parameter results must still be reported in the appropriate toxicity report.
10. The permittee shall calculate the Predicted River Temperature Increase (PRTI) for each temperature measurement using the equation below. The PRTI calculation shall use the measured effluent temperature, concurrent measured effluent flow, concurrent upstream river temperature, and the concurrent upstream river flow at the facility. Concurrent upstream river temperature shall be measured as close in time as possible, but no greater than one (1) hour from the measured effluent temperature. Concurrent upstream river flow and effluent flow shall be taken on the same day as the measured effluent temperature.

$$\text{PRTI } (^{\circ}\text{F}) = \frac{[(\text{Flow}_{\text{Concurrent001}} \text{ MGD}) * (\text{Temp}_{001} ^{\circ}\text{F} - \text{Temp}_{\text{ConcurrentUpstream}} ^{\circ}\text{F})]}{(\text{Flow}_{\text{ConcurrentUpstream}} \text{ cfs}) (0.6464 \text{ MGD/cfs})}$$

11. Report the lowest recorded dissolved oxygen concentration on the DMRs each month.
12. The permittee shall submit monthly DMRs, and during months when no tests are performed, enter "NODI 9" for that month.
13. These BOD and TSS limits do not apply during low flow conditions. During low flow conditions, the BOD and TSS limits in Part I.A.2 apply.



**PART I****A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (Continued)**

2. During the period beginning on the effective date and lasting through the expiration date, the permittee is authorized to discharge treated process water during low flow conditions (as defined in footnote 1) through **Outfall Serial Number 001A** to Otter River. Such a low flow condition discharge shall: 1) be limited and monitored by the permittee as specified below for BOD and TSS and as specified in Part I.A.2 for other effluent characteristics; and 2) not cause a violation of the State Surface Water Quality Standards of the receiving water.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements <sup>1</sup>	
		Average Monthly	Maximum Daily	Measurement Frequency <sup>3</sup>	Sample Type
Flow Upstream <sup>4</sup>	cfs	Report	Report	1/Day	Monitor
BOD <sup>2</sup> (May 1 <sup>st</sup> – October 31 <sup>st</sup> )	lbs/day	150 <sup>6</sup>	200 <sup>5</sup>	1/Week	Composite <sup>7</sup>
Total Suspended Solids (TSS) <sup>2</sup> (May 1 <sup>st</sup> – October 31 <sup>st</sup> )	lbs/day	150 <sup>6</sup>	200 <sup>5</sup>	1/Week	Composite <sup>7</sup>

See page 10 for explanation of footnotes.

**(Part I.A.2, Continued)****Footnotes:**

1. Samples taken in compliance with the monitoring requirements specified above for Outfall 001A shall be taken at the same monitoring point as specified for Outfall 001 in Part I.A.1 of the permit, when the total daily flow in the receiving water, as measured at the USGS Gage Station No. 01163200, has been equal to or less than 17 cfs for 30 or more consecutive days. Therefore, Outfall 001A is the discharge through Outfall 001 during low flow conditions.
2. In the event of normal upstream flow conditions (greater than 17 cfs), or low flow conditions (equal to or less than 17 cfs) that are not consecutively 30 days in length, the permittee shall enter "NODI 9" on the DMR for this month, and report the required parameters in Part I.A.1 of the permit for Outfall 001.
3. Sampling frequency of 1/day is defined as the sampling of one (1) discharge event during each 24-hour period, when discharge occurs. Sampling frequency of 1/week is defined as the sampling of one (1) discharge event in each calendar week, 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).
4. The permittee shall obtain daily ambient upstream river flow readings from the USGS Gage No. 01163200, located at Turner Street in Otter River.
5. When the 30<sup>th</sup> consecutive day of low flow is reached, and until the total daily flow of the receiving water for a day exceeds 17 cfs, the permittee shall achieve maximum daily limits of 200 lbs/day for both BOD and TSS.

For example, if on June 15<sup>th</sup>, the total daily receiving water flow fell below 17 cfs and remained under 17 cfs through July 15<sup>th</sup>, the permittee shall achieve the maximum daily limit of 200 lbs/day for both BOD and TSS starting on July 15<sup>th</sup> and continuing for each day the total daily flow remains below 17 cfs.

6. When the 30<sup>th</sup> consecutive day of low flow is reached, if the total daily flow in the receiving water remains below 17 cfs for an additional 30 consecutive days, the permittee shall achieve 30 day average limits of 150 lbs/day for both BOD and TSS.

For example, if on June 15<sup>th</sup>, the total daily receiving water flow fell below 17 cfs and remained under 17 cfs through July 15<sup>th</sup>, and then the total daily flow remains below 17cfs for an additional 30 consecutive days until August 14<sup>th</sup>, the permittee shall achieve 30 day average limits for BOD and TSS on August 14<sup>th</sup>, using all effluent data collected during the 30 day period (since July 15<sup>th</sup>). As long as the daily receiving water flow remains under 17 cfs, the permittee would be subject to the limits; the 30 day average for subsequent days would be calculated using effluent sampling results from that day and the previous 29 days.

7. A 24-hour composite will consist of twenty-four (24) grab samples collected at hourly intervals during a twenty-four hour period (i.e., 0700 Monday to 0700 Tuesday), combined proportionally to flow.

**Part I.A. (Continued)**

3. The pH of the effluent shall not be less than 6.5 or greater than 8.3 at any time unless these values are exceeded as a result of natural causes.
4. The discharge shall not cause objectionable discoloration of the receiving waters.
5. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time in other than trace amounts.
6. The permittee shall not use fungicides or slimicides containing trichlorophenol or pentachlorophenol.
7. 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.
8. 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.
9. 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 acrylonitrile; 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.
10. 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.
11. No intake water shall be used for cooling purposes.
12. The rise in temperature of the receiving water due to a discharge shall not exceed 5°F.

**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. MONITORING AND REPORTING**

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month. Signed and dated originals of these, and all other reports required herein, shall be submitted to EPA at the following address:

Environmental Protection Agency, Region 1  
Water Technical Unit (SEW)  
P.O. Box 8127  
Boston, Massachusetts 02114

Signed and dated Discharge Monitoring Report Form(s) and all other reports required by this permit shall also be submitted to the State at the following addresses:

Massachusetts Department of Environmental Protection  
Central Regional Office  
Bureau of Waste Prevention  
627 Main Street  
Worcester, Massachusetts 01608

and

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

#### **D. STATE PERMIT CONDITIONS**

1. This discharge permit is issued jointly by the EPA and the MassDEP under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43 and 314 C.M.R. 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. 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.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
ONE CONGRESS STREET- SUITE 1100 (CIP)  
BOSTON, MASSACHUSETTS 02114 - 2023

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 # MA0000469

NAME AND ADDRESS OF APPLICANT:

**Seaman Paper Company of Massachusetts, Inc.**  
**P.O. Box 21**  
**Baldwinville, MA 01436**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Seaman Paper Company of Massachusetts, Inc.**  
**51 Main Street**  
**Otter River, MA 01436**

RECEIVING WATERS: Otter River (Millers River Watershed MA 35-08)

CLASSIFICATION: B (Warm Water Fishery)

SIC CODES: 2621 (Paper Manufacturing), 2679 (Paper Converting)

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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 into the designated receiving water. The existing permit was issued to Seaman Paper on October 4, 2004 (the current permit), became effective 60 days later, was modified on August 23, 2005, and expired on September 30, 2007. EPA received a permit renewal application from Seaman Paper on March 29, 2007. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued.

## **II. TYPE OF FACILITY**

Seaman Paper Company of Massachusetts, Inc. (Seaman Paper) is a non-integrated specialty paper manufacturing facility that produces tissue paper wrapping, food wrapping, and decorative streamers. The basic raw materials are 60-70% secondary fiber (consisting of recycled paper from other paper mills that do not require deinking and reject paper wastes from internal manufacturing and converting processes) and 30-40% virgin pulp. The facility is located downstream of the Seaman Paper Dam, in the Village of Otter River (Attachment A).

## **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 January 2005 to December 2007 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. MA0000469).

### **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 the pulp, paper, and paperboard manufacturing point source category (See 40 CFR Part 430 – *Pulp, Paper and Paperboard Manufacturing Point Source Category*). The regulation for this point source category was revised on April 15, 1998 into what is commonly referred to as the Cluster Rules. The Cluster Rules reorganized 26 sub-categories of the pulp, paper, and paperboard industry found in the previous regulations into 12 new sub-categories by grouping mills with similar processes. The potentially applicable Subparts of the new regulations for Seaman Paper based on the most recent production information submitted by the facility are:

- Subpart J (40 CFR §430.100), *Secondary Fiber Non-Deink Subcategory*, (secondary fiber non-deink facilities where tissue from wastepaper is produced without deinking).
- Subpart K (40 CFR §430.110), *Lightweight Papers from Purchased Pulp Subcategory*, (non-integrated mills where lightweight papers are produced from purchased pulp)
- Subpart L (40 CFR §430.120), *Tissue, Filter, Non-Woven and Paperboard from Purchased Pulp Subcategory*, (non-integrated mills where tissue papers are produced from purchased pulp).

However, the production process is not as straightforward as the Subpart definitions since a combination of both purchased virgin pulp and secondary fiber are often combined to produce the desired product. However, the water quality based standards are expected to be much more stringent than the technology based standards calculated from these Subparts. Therefore, for the purpose of calculating a relatively accurate technology based standard to compare to the water quality based standard, the ELGs of Subpart J which were applied in the previous permit shall be applied in this permit.

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 as well as internal waste stream(s) such as the bleach plant effluent associated with some pulping operations. The ELGs also establish limitations based on several methodologies including monthly average and/or daily maximum mass limits based on production of pulp and paper produced or concentration limitations based on BPT, BCT or BAT. The applicable ELGs are summarized in Table 1, below:

**Table 1. Effluent Limitation Guidelines (ELGs) applicable to Seaman Paper**

40 CFR § 430 Subpart	BOD5			TSS			pH
	Kg/kg (or pounds per 1,000 lb) of product			Kg/kg (or pounds per 1,000 lb) of product			Range
	Continuous dischargers		Non-Continuous dischargers (annual average days)	Continuous dischargers		Non-Continuous dischargers (annual average days)	
	Max for any 1 day	Average of daily values for 30 consecutive days		Max for any 1 day	Average of daily values for 30 consecutive days		
Subpart J	13.7	7.1	4.0	17.05	9.2	5.1	5.0-9.0

Mass-based ELGs are expressed as an allowable mass of pollutant discharge per unit of production and are directly related to a particular mill's production. On the March 2007 Permit Re-application, Seaman Paper identified that they produce approximately 170,000 lbs/day of non-integrated lightweight paper.

The pulp and paper production values cited for each of the ELG subpart categories were utilized to calculate the permissible mass-based limits in the draft permit for conventional pollutants which include BOD and TSS. The calculated limits based on the applicable ELGs are summarized in Table 2, below.

**Table 2. Summary of Calculated ELG Limits for BOD and TSS at Seaman Paper**

40 CFR § 430 Subpart	Production Data (lbs/day)	BOD Monthly Ave		BOD Daily Max		TSS Monthly Ave		TSS Daily Max	
		ELG Factor <sup>1</sup>	ELG <sup>2</sup>	ELG Factor <sup>1</sup>	ELG <sup>2</sup>	ELG Factor <sup>1</sup>	ELG <sup>2</sup>	ELG Factor <sup>1</sup>	ELG <sup>2</sup>
Subpart J	170,000	7.1	1207	13.7	2329	9.2	1564	17.05	2898
Technology Based Limit	---	---	1207	---	2329	---	1564	---	2898

1. The ELG Factor is in units of lbs/1000 lbs.
2. The calculated ELG is in units of lbs/day.

## 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 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 2007 Integrated List of Waters states that Otter River is not attaining water quality standards due to priority organics, nutrients, organic enrichment/low DO, salinity/TDS/chlorides, other habitat alterations, pathogens, taste, odor and color, and turbidity.

The Millers River Watershed 2000 Water Quality Report indicates that Otter River (Segment MA35-08) is impaired for aquatic life by PCB and suspected DO/saturation, phosphate, turbidity, and effluent toxicity, fish consumption by mercury and PCB, primary contact by turbidity and odor, secondary contact by turbidity and odor, and aesthetics by turbidity, odor, trash and debris.

### 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 Otter River must be protected. Otter River is classified as a Class B water, warm water fishery, by the Commonwealth of Massachusetts (314 CMR 4.06). These waters are designated as 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**

Seaman Paper operates an intake structure above the Seaman Paper Dam on the Otter River, which supplies approximately 1.1 MGD intake water throughout the plant to the paper machines and the boiler. Refer to Attachment C for a schematic of water flow throughout the system and Attachment D for a schematic of the water flow through the intake structure. The water flows into the intake canal which splits the flow between the intake and a dam bypass. Gates on both of the flows can be lowered or raised to regulate the gravity flow. The intake flows past a floating log boom, through a grate, to an underground storage tank (the “Kinney Tank”) which supplies water to the various plant processes. The permittee stated at the EPA site visit of April 2008 that the average intake flow in 2007 was 0.934 MGD and the maximum intake flow was 1.296 MGD.

From the Kinney Tank, the boiler feed pump supplies water to the boiler, two Kinney Water Pumps supply water to the paper machines, and two Clearwell Feed Pumps supply water to the Clearwell. Water stored in the Clearwell is first treated by flocculation (with addition of poly-aluminum chloride), clarification in an uptake clarifier, and filtration by three sand filters. The sand filters are usually backwashed once per day and the sand is replaced approximately every ten years (backwash flow is a miscellaneous plant flow which flows to the new sump, as described below). The treated water from the clarifier is supplied to the paper machines for processes that require a higher grade of water than the river water supplied by the Kinney Water Pumps. No intake water is used as cooling water.

The paper making process starts at one of three pulpers, where water and virgin pulp and/or secondary fiber are added and blended (with addition of re-circulated process water and steam) to create the specific pulp blend for the desired product type. The pulp blend is transferred to one of two paper machines which run the pulp along a series of rollers to remove the excess water to make paper. The excess water from the paper making process drains to one of two “wire pits.” The water from the wire pits flows to a retention tank, which then flows to one of two “save-alls”, where fiber is reclaimed for re-use in the pulpers.

The wastewater then drains to two interconnected collection basins known as the “old sump” and “new sump.” Inputs to the old sump include sludge from the primary clarifier and 22’ clarifier, water from the savealls, wastewater from the savealls via the machine chest, and waste activated sludge from the final clarifier. Inputs to the new sump include water from the old sump and

miscellaneous plant wastewater. Miscellaneous plant water consists of wash water, overflows, floor drains, sand filter backwash, filtrate from the belt press, seal water, vacuum pump water, and boiler blowdown. Boiler blowdown occurs approximately two times per day, at a rate of 1,000 gallons per blowdown event (2,000 GPD). The water from the new sump is pumped on to treatment.

Treatment consists of addition of polymer, primary clarification, aeration with addition of fertilizer (some water is diverted for additional aeration in the aerated lagoons and then back to the main aeration tank), and final clarification with addition of polymer and pH adjustment. The facility has replaced the triple phosphate fertilizer with mon-ammonium phosphate (urea has been used in the past and is kept onsite for possible future use). Approximately 800,000 GPD of treated process water is discharged to the Otter River through Outfall 001, via a rippleway.

Approximately 200,000 GPD of the treated effluent water is recycled through the paper making process. Some water from the primary clarifier is piped to the 22' diameter clarifier and recycled (via the pressure filter) as vacuum seal water makeup for the paper machine. Water from the save-alls which is not wasted to the machine chest is recycled to the pulpers.

Sludge from the primary clarifier is pumped to the filter belt press, where it is dewatered and taken offsite to be landfilled or composted. Sludge from the 22' clarifier is pumped to the old sump. Activated sludge from the aeration tank is either recycled for use in the aeration tank or wasted to the old sump.

A variety of chemicals are added throughout the paper making process and process water treatment. Sodium hydroxide is added at the aeration tank, polymer (ACP-31) is added at the belt press, ferric chloride is added after the aeration tank before the secondary clarifier, colloidal silica (Impact-115) is added at the belt press, cationic flocculant emulsion is added at the primary clarifier and save-alls, cationic coagulant is added at the save-alls, anionic flocculant emulsion is added at the savealls and after the aeration tank before the secondary clarifier, fertilizer (monoammonium phosphate, urea) is added at the aeration tank, and anionic polymer is added at the save-alls. Potassium permanganate is no longer used at the facility.

The discharge through Outfall 002 consists entirely of storm water and is currently covered by the NPDES Storm Water Multi-Sector General Permit MAR05B644 (MSGP).

### **C. Description of Discharge**

The discharge through Outfall 001 consists of treated paper plant process wastewater. Approximately 800,000 GPD of treated process water discharges from the final clarifier to a rippleway which flows to the Otter River (Outfall 001).

Storm water discharges through Outfall 002 are covered under the MSGP. Outfall 002 is located about 100 feet downstream from the wastewater discharge.

#### D. Discharge Location

Outfall 001 discharges below the Seaman Paper Dam, within a 5.5 mile segment of the Otter River from the Seaman Paper Dam to the confluence with the Millers River in Winchendon (MA 35-08). According to the Millers River Watershed 2000 Water Quality Assessment Report:

*The headwaters of the Otter River originate in the wetlands areas of Hubbardston, Templeton, and Gardner. The river slowly meanders through the marshy areas of Gardner passing under Routes 2 and 2A, where it receives the effluent from the Gardner WWTP. The Otter River then flows under Route 101 and meanders past sand and gravel operations before entering the impoundment at Seaman Paper Company in Gardner. The paper company's treatment plant discharges a short distance below the dam. The river enters a short rapid section before entering another impounded areas formed by the partially breached dam at the old Baldwinville Products Mill. Just downstream from this old dam the Templeton WWTP discharges to the Otter River. The velocity of the river picks up as the river flows through Baldwinville passing under Route 68. The river then enters wetlands in the Otter River State Forest and continues for three miles before emptying into the Millers River. The USGS operates one gage on the Otter River at the Turner Street Bridge in Templeton. The drainage area at this gage is 34.2 mi<sup>2</sup> with an average discharge of 53 cfs. The river here is sluggish, having an average fall of about 9 feet per mile.*

The flow of the Otter River is minimal during the summer, but is always flowing. The Otter River flows to the Millers River, which flows to the Connecticut River.

#### E. Proposed Permit Effluent Limitations and Conditions

##### 1. Outfall 001

##### a. Flow

Seaman Paper has a Water Management Act withdrawal registration no. 207-29401 for 1.19 MGD. The permit re-application dated March 26, 2007 reports that the average flow through Outfall 001 is 0.8570 MGD. The water is withdrawn above the Seaman Paper Dam, while Outfall 001 is located below the dam. Review of the DMR data for the period from January 2005 to December 2007 shows that the highest average monthly flow was 0.95 MGD and the highest maximum daily flow was 1.2 MGD. Thus, the current permit flow limits of 1.1 MGD average monthly and 1.4 MGD maximum daily have not been exceeded on any occasions. Therefore, the draft permit requirements shall remain the same as the requirements in the current permit, based on anti-backsliding requirements found in 40 CFR §122.44(l). The monthly average flow limit remains as 1.1 MGD and the daily maximum remains as 1.4 MGD. The flow is measured on a

continuous basis with an ultrasonic sensor located at the Parshall flume prior to discharge through Outfall 001.

The permittee is also required to report the ambient upstream river flow, for use in calculating the PRTI, as described in Part IV.E.5 of this fact sheet, below. The permittee shall obtain the daily ambient upstream river flow readings from the USGS Gage No. 01163200, located at Turner Street in Otter River and report the reading that corresponds to the same day that the maximum daily effluent temperature for the month occurred.

#### b. Dilution Factor

The 7Q10 (the 7-day mean stream flow with 10-year recurrence interval) was used to calculate the effluent limits in the current permit. The 7Q10 at the USGS gauging station 01163200 on the Otter River at the village of Otter River is 4.625 cfs, with a drainage area of 34.1 square miles. Since the drainage area of the Otter River at Seaman Paper is 43 square miles<sup>1</sup>, the 7Q10 and dilution factor are calculated below:

Seaman Paper maximum plant discharge = 1.4 MGD

7Q10 at USGS Station 01163200 Otter River at Otter River, MA 4.625 cfs; Drainage area = 34.1 mi<sup>2</sup>

Drainage area at Seaman Paper = 42.1 mi<sup>2</sup>

7Q10 at Seaman Paper =  $(43 \text{ mi}^2 / 34.1 \text{ mi}^2) (4.625 \text{ cfs}) = 5.83 \text{ cfs}$

Dilution Factor =  $(7Q10 + \text{max plant discharge} * \text{conversion factor}) / (\text{max plant discharge} * \text{conversion factor})$   
 $= (5.83 \text{ cfs} + 1.4 \text{ MGD} * 1.55 \text{ cfs/MGD}) / (1.4 \text{ MGD} * 1.55 \text{ cfs/MGD})$   
 $= 8.00 / 2.17$

Dilution Factor = 3.68 = 3.7

This dilution factor of 3.7 was used in assessing the need for effluent limits for metals and other toxic compounds.

#### c. Biological Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS)

The current permit contained average monthly and maximum daily effluent limitations for BOD and TSS. The water quality based limits for BOD and TSS are more protective than the technology based limits calculated according to the effluent guidelines and standards in 40 CFR 430, Subpart J, Secondary Fiber Non-Deink. Therefore, the water quality based limits for BOD and TSS shall remain in the permit based on anti-backsliding requirements found in 40 CFR §122.44(l). The technology based limits, calculated based on 170,000 lbs/day production are compared to the water quality based limits in Table 3, below:

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<sup>1</sup> The drainage area of Otter River at Seaman Paper was calculated by plotting points on a GIS system (ArcMap) which calculates the area of the watershed.

**Table 3. Summary of Technology Based and Water Quality Based Effluent Limits for BOD and TSS at Seaman Paper**

Parameter	Technology Based Effluent Limits		Water Quality Based Effluent Limits (lbs/day)					
	Average Daily (lbs/day)	Maximum Daily (lbs/day)	Winter (November 1 <sup>st</sup> – April 30 <sup>th</sup> )		Summer (May 1 <sup>st</sup> – October 31 <sup>st</sup> )		Summer Low Flow	
			Ave Monthly	Max Daily	Ave Monthly	Max Daily	Ave Monthly	Max Daily
BOD	1207	2329	400	700	286	400	150	200
TSS	1564	2898	700	900	400	600	150	200

From May 1 to October 31, the permittee is required to monitor and report daily the flow of the Otter River at USGS gage 01163200, located upstream at the Turner Street crossing. If the daily river flow is 17 cfs (11 MGD) or lower for 30 consecutive days or more, the BOD and TSS limits of 150 lbs/day average monthly and 200 lbs/day maximum daily apply. This permit requirement is described in detail in Part I.A.2 of the permit and requires reporting the BOD and TSS on a separate DMR as Outfall 001A. Outfall 001A is the discharge through Outfall 001 during low flow conditions (when the total daily flow in the receiving water, as measured at the USGS Gage Station No. 01163200, has been equal to or less than 17 cfs for 30 or more consecutive days.)

Thirty days of consecutive low flow conditions occurred once in 2005, during the end of August and beginning of September, when the lowest gage reading during the period was 6.1 cfs. Review of the DMR data shows that the BOD and TSS levels in the discharge have not exceeded the effluent limitations, even during the time when the river flow was less than 17 cfs. Therefore, the sampling frequency of 2/week has been reduced to 1/week.

Based on the low flow conditions (150 lbs/day and 1.1 MGD), and accounting for dilution (3.7), the worst case instream BOD and TSS concentrations are expected to be 4.4 mg/L, (150 lbs/day / 1.1 MGD / 8.34CF / 3.7). This low concentration of BOD under worst case conditions is not expected to significantly increase the oxygen demand, and therefore the discharge is not expected to contribute to the DO impairment of the waterbody.

Additionally, the low concentration of 4.4 mg/L TSS is not expected to contribute significantly to the TSS levels in the waterbody. This TSS concentration is much lower than the 100 mg/l which has been required in the past as a technology-based effluent limitation in individual NPDES permits in Massachusetts, based on BPJ and the treatment effectiveness of an oil/water separator. Additionally, Massachusetts has a narrative water quality standard for solids that states, "[t]hese waters shall be free from floating, suspended and settleable solids in concentrations and combinations that would impair any use assigned to this Class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom." EPA expects the MassDEP to approve this Draft Permit and certify that this low TSS concentration is protective of water quality standards.



d. pH

The pH limitation range of 6.0-8.3 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 6.0 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.

Review of the DMR data reveals that the pH limit range has not been exceeded. Based on these monitoring results, the sampling frequency for pH has been reduced from 1/day to 1/week.

e. Temperature

The Massachusetts Surface Water Quality Standards, 314 CMR 4.05 (3)(b)2, states that Class B waters, “Shall not exceed...83°F (28.3°C) in warm water fisheries. The rise in temperature due to a discharge shall not exceed...5°F (2.8°C) in rivers and streams designated as warm water fisheries (based on the minimum expected flow for the month). Natural seasonal and daily variations that are necessary to protect existing and designated uses shall be maintained. There shall be no changes from background conditions that would impair any use assigned to this Class, including those conditions necessary to protect normal species diversity, successful migration, reproductive functions or growth of aquatic organisms.

The current permit required a temperature limit of 90°F, monitored twice per week (2/week). During the time period from January 2005 to December 2007, the temperature of the effluent ranged from 67 – 89.6°F. This maximum daily temperature limit and monitoring frequency have been retained in the draft permit.

As stated above, the Massachusetts Surface Water Quality Standards require that the rise in temperature in Class B warm water fisheries due to a discharge shall not exceed 5°F (based on the minimum expected flow for the month). EPA assessed the change in temperature associated with the discharge through review of temperature information collected in accordance with the current permit and calculation of the predicted river temperature increase (PRTI) associated with the discharge from Outfall 001. Using the monthly average ambient flow values taken at the USGS gage (#01163200), since the ambient flows concurrent with the maximum temperature were not required by the current permit, the maximum PRTI calculated for the time period for which upstream temperature data is available is 3.4°F (See calculation, below, and Attachment B – DMR Data Summary, for all the calculated PRTI’s). Therefore, the change in temperature associated with the discharge is not expected to exceed the State Water Quality temperature standards (of a rise in temperature of the receiving water not to exceed 5°F). However, the draft

permit requires the permittee to continue to monitor, as described below, in order to calculate the PRTI.

Calculation of maximum PRTI using DMR data (January 2005 – December 2007):

$$\begin{aligned} \text{PRTI } (^{\circ}\text{F}) &= \frac{[(\text{MaxFlow}_{001} \text{ MGD}) * (\text{MaxTemp}_{001} ^{\circ}\text{F} - \text{Temp}_{\text{Ambient}} ^{\circ}\text{F})]}{(\text{Flow}_{\text{Ambient}} \text{ cfs}) (0.6464 \text{ MGD/cfs})} \\ &= \frac{[(1.0414 \text{ MGD}) * (86^{\circ}\text{F} - 64^{\circ}\text{F})]}{(10.3 \text{ cfs}) (0.6464 \text{ MGD/cfs})} = 3.4^{\circ}\text{F} \end{aligned}$$

For purposes of the PRTI, the permittee shall use data representative of actual discharge through Outfall 001 along with concurrent ambient river conditions as the basis of the calculation to be submitted to EPA. Accordingly, measured daily maximum discharge flow rates, measured daily maximum discharge temperatures, measured daily ambient upstream river water temperatures that are taken as close in time as possible (but no greater than 1 hour) from the daily maximum discharge temperature, and the concurrent ambient river flow rates shall be obtained and used for the calculation and reporting of the PRTI. The PRTI calculation shown below assumes instantaneous mixing of the thermal plume once it enters the Otter River. The PRTI shall be calculated as follows:

$$\text{PRTI } (^{\circ}\text{F}) = \frac{[(\text{MaxFlow}_{001} \text{ MGD}) * (\text{MaxTemp}_{001} ^{\circ}\text{F} - \text{Temp}_{\text{Ambient}} ^{\circ}\text{F})]}{(\text{Flow}_{\text{Ambient}} \text{ cfs}) (0.6464 \text{ MGD/cfs})}$$

#### f. Dissolved Oxygen (DO)

The Massachusetts Surface Water Quality Standards, 314 CMR 4.05 (3)(b)1, states that for Class B waters, the dissolved oxygen (DO) shall not be less than 5.0 mg/L in warm water fisheries. The effluent dissolved oxygen (DO) measurements are collected at the effluent flow meter, prior to entering the river. The current permit requires sampling of the effluent DO at a frequency of once per week from June 1<sup>st</sup> to September 30<sup>th</sup> of each year. During the time period from January 2005 to December 2007, the discharge has not been less than the 5.0 mg/L effluent limit, as DO measurements have ranged from 6 – 7 mg/L. Therefore, the frequency of DO monitoring has been reduced from 1/week to 2/month, with the lowest recorded DO concentration reported on the DMRs.

#### g. Phosphorus

As part of the treatment process, Seaman Paper adds fertilizer to the aeration tank to enhance biological treatment since the raw wastewater is deficient in phosphorus. Seaman Paper monitors the concentration of phosphorus added as an operating parameter, and minimizes the use of added nutrients to control costs.

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 majority of phosphorus entering the Millers River Basin (which includes the Otter River) during the critical summer period is from Publicly Owned Treatment Works (POTWs) and industrial dischargers. Phosphorus is also introduced into the river basin via storm water runoff. The Millers River Watershed 2000 Water Quality Report states that the phosphorus concentrations in the Otter River segment below the Seaman Paper discharge (MA35-08) are elevated during the summer months. The report states:

*Total phosphorus concentrations were elevated in this segment of the Otter River during the summer 1995 ranging from 0.06 to a high of 0.41 mg/L at the four stations sampled. The concentrations measured during the 2000 survey at station OT03 [upstream of the 202 bridge in Templeton] were 0.17 mg/L and 0.13 mg/L.*

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:

*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 the Seaman Paper's discharge. Since a TMDL study for nutrients is not currently available for the Otter River, phosphorus limits must meet either water quality based limits or technology-based limits. The MassDEP has established that, in the absence of a watershed specific TMDL review, a monthly average TP limit of 200 µg/L (or 0.2 mg/L) represents HBPT for municipal wastewater treatment facility effluent discharged to a nutrient impaired water body. The HBPT limit of 0.2 mg/L was derived from a literature search of generally accepted treatment technologies for the removal of phosphorus and is likely attainable by the existing treatment facility. Therefore, the HBPT limit of 0.2 mg/L has been retained in the draft permit based on anti-backsliding requirements found in 40 CFR §122.44(l).

EPA has produced several guidance documents which contain recommended total phosphorus criteria for receiving waters. The EPA's Quality Criteria for Water 1986 (the Gold Book) recommends, in order to control eutrophication, in-stream phosphorus concentrations should be less than 100 ug/L (0.100 mg/L) in streams or other flowing waters not discharging directly to lakes or impoundments. 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. Otter River 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 instream concentration of TP at the HBPT concentration of 0.2 mg/L would be 0.056 mg/L (Limit/Dilution Factor =  $0.2 \text{ mg/L} / 3.7 = 0.054$ ) mg/L), which is less than the 0.1 mg/L Gold Book number. Given that the state has not yet adopted numerical water quality based phosphorus criteria, the draft permit will not establish limits based on the Gold Book or EPA Ecoregion guidance at this time, but will instead retain the monthly average TP limit on the discharge of 0.2 mg/L, based on HBPT as defined in the State Water Quality Standards and anti-backsliding requirements.

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, accounting for background concentrations.

This monthly average TP limit, along with a monthly average permit flow limit of 1.1 MGD, calculates an allowable TP load from Seaman Paper of 1.8 lbs/day.

$$(1.1 \text{ MGD plant Q}) * (0.2 \text{ mg/L TP}) * (8.34 \text{ Conversion Factor}) = 1.8 \text{ lbs/day}$$

If, upon completion of a TMDL for nutrients based on a detailed study of eutrophication in the Otter 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 0.2 mg/L for the monthly average TP shall be retained in the draft permit. The 0.2 mg/L limit is seasonal, from April 1<sup>st</sup> through October 31<sup>st</sup>, reported as a monthly average and taken as a 24-hour composite. During the time period from January 2005 to December 2007, the phosphorus limit has been exceeded on one occasion, when phosphorus in the discharge was

measured as 0.211 mg/L. The sampling frequency of 2/week has been retained in the draft permit.

#### h. Aluminum

The limits in the previous permit for aluminum are based on the National Recommended Water Quality Criteria. The chronic water quality criteria is 87 µg/L and the acute criteria is 750 µg/L. Based on the revised dilution factor of 3.7, the limits have been revised as follows:

Chronic limit = (chronic criteria)\*(dilution factor) = (87 µg/L)\*(3.7) = 0.32 mg/L

Acute limit = (acute criteria)\*(dilution factor) = (750 µg/L)\*(3.7) = 2.8 mg/L

These effluent limitations are slightly more stringent than the limits required in the current permit limits of 0.38 mg/L average monthly and 3.3 mg/L maximum daily, due to the revised dilution factor associated with the discharge. Based on review of the monitoring data from January 2005 to December 2007, the limits in the current permit have not been exceeded on any occasion nor does it appear that the slightly more stringent limits in the draft permit shall be exceeded. Therefore, the monitoring frequency of 1/Quarter has been reduced to 2/year.

#### i. Whole Effluent Toxicity (WET) Testing

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" on September, 1991; and MassDEP's Implementation Policy for the Control of Toxic Pollutants in Surface Waters (February 23, 1990).

The previous permit required that the permittee conduct four freshwater chronic (and modified acute) WET tests for the Outfall 001 effluent, during each year of the effectiveness of the permit (1/Quarter) and meet effluent limitations of a chronic C-NOEC of greater or equal to 23% and an acute LC<sub>50</sub> of greater than or equal to 100%. Based on the revised dilution factor of 3.7, the draft

permit requires a C-NOEC of 27% (the reciprocal of the dilution factor). The LC50 or greater than of equal to 100% remains unchanged in the draft permit.

Review of DMR data collected from January 2005 to December 2007 reveals that the acute limit has not been exceeded, however, the chronic limit has been exceeded on two occasions.

Although the facility has requested that toxicity testing be reduced, EPA is not reducing the toxicity testing at this time since these exceedences have occurred within the past four years.

Therefore, the monitoring frequency of 1/Quarter remains unchanged in the draft permit.

However, in the case that the permittee submits two years and a minimum of eight consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from EPA that the WET testing requirement has been changed.

The permittee shall test the daphnid, Ceriodaphnia dubia, and fathead minnow, Pimephales promelas. This is a change from the previous permit, which only required the permittee to test the daphnid. The requirement to test the fathead minnow has been added based on the exceedences of toxicity limitations during this permit cycle. 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 28<sup>th</sup>, May 31<sup>st</sup>, August 31<sup>st</sup>, and November 30<sup>th</sup>. The chronic test may be used to calculate the acute LC<sub>50</sub> at the 48 hour exposure interval.

j. Ammonia

EPA's *Current National Recommended Water Quality Criteria*, freshwater criteria for ammonia are pH, temperature, and life-stage dependent. According to the procedures described in the *Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses*, except possibly where a very sensitive species is important at a site, freshwater aquatic life should be protected if both conditions specified in Appendix C to the Preamble - Calculation of Freshwater Ammonia Criterion are satisfied. Assuming salmonid fish absent and using the maximum pH value of 8.1 SU from the recent DMRs, the one-hour average concentration of total ammonia nitrogen shall not exceed, more than once every three years on the average, a CMC (acute criterion) of 6.95 mg N/L (ammonia nitrogen concentration). (See Attachment E – pH Dependent Values of the CMC). Using the minimum and maximum temperature values of 67°F (19°C) and 89.6°F (32°C) as representative of winter and summer temperatures, respectively, and assuming fish early life stages are present, the thirty-day concentration of total ammonia nitrogen shall not exceed, more than once every three years on the average, a CCC (chronic criterion) of approximately 1.6 mg N/L during the winter and 0.773 mg N/L during the summer (See Attachment F – Temperature and pH Dependent Values of the CCC for Fish Early Life Stages Present).

Review of Seaman Paper's permit re-application shows that the maximum detected level of ammonia from 6 analyses was 9.9 mg/L and the long term average was 3.1 mg/L. Converted to ammonia, the calculated freshwater ammonia nitrogen CMC of 6.95 mg N/L is approximately 8.95 mg/L total ammonia, and the CCC's of 1.6 mg N/L and 0.773 mg N/L are approximately 2.06 mg/L and 0.996 mg/L total ammonia, respectively.<sup>2</sup> Based on available dilution, the CMC for ammonia applicable to the discharge through Outfall 001 is 33.1 mg/L ( $8.95 \times 3.7$ ) and the seasonal CCC's for ammonia applicable to the discharge are 7.6 mg/L ( $2.06 \times 3.7$ ) and 3.7 mg/L ( $0.996 \times 3.7$ ), during the winter (November 1 – April 30) and summer (May 1 – October 31), respectively.

Therefore, based on the available 6 samples of 9.9 mg/L maximum daily and 3.1 mg/L long term average ammonia, there is no evidence to suggest that the discharge violates the calculated CMC of 33.1 mg/L or seasonal CCC's of 7.6 mg/L and 3.7 mg/L at this time. However, since these 6 samples were taken during a compressed time period (and also during the winter) EPA believes that more information is necessary in order to determine if this discharge may violate the seasonal CCC's. Therefore, the draft permit requires monitoring of average monthly ammonia, at a frequency of 1/week.

#### k. Iron

Review of Seaman Paper's permit re-application reveals that iron has been detected on one occasion at a concentration of 2.2 mg/L. The National Recommended Water Quality Criteria contains a freshwater CCC for iron of 1000 µg/L (1 mg/L). Accounting for dilution, the applicable CCC for the discharge through Outfall 001 is 3.7 mg/L ( $1 \times 3.7$ ). Since the measured level of iron is below this CCC when accounting for dilution, EPA does not believe a limit is appropriate at this time. However, since only one data point is available for iron, EPA believes more information is necessary to determine the actual levels of iron in the discharge, in order to make a determination if effluent limitations may be necessary in the future. Therefore, the draft permit requires sampling of average monthly and maximum daily iron, at a frequency of 1/week.

#### l. Additional Requirements and Conditions

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

The remaining conditions of the draft permit are based on the NPDES regulations, Part 122 through 125 and consist primarily of management requirements common to all permits.

#### 2. Outfall 001A

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<sup>2</sup> The conversion factor of 1.2883 is based upon weight proportions of the nitrogen and hydrogen in ammonia (1.3 grams ammonia contain 1 gram nitrogen).

Outfall 001A shall be defined as the discharge through Outfall 001 during low flow conditions. Low flow conditions occur when the total daily flow in the receiving water, as measured at the USGS Gage Station No. 01163200, has been equal to or less than 17 cfs for 30 or more consecutive days.

a. Flow

In the event of normal upstream flow conditions (not low flow conditions), the permittee shall enter “NODI 9” on the DMR for flow for this month, and report the flow in Part I.A.1 of the permit for Outfall 001.

b. Biological Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS)

During low flow conditions, the permittee shall achieve maximum daily limits of 200 lbs/day for both BOD and TSS. For example, if on June 15<sup>th</sup>, the total daily receiving water flow fell below 17 cfs and remained under 17 cfs for 30 consecutive days through July 15<sup>th</sup>, the permittee shall achieve the maximum daily limit of 200 lbs/day for both BOD and TSS starting on July 15<sup>th</sup> and continuing for each day the total daily flow remains below 17 cfs.

During low flow conditions, if the total daily flow in the receiving water remains below 17 cfs for an additional 30 consecutive days, the permittee shall achieve 30 day average limits of 150 lbs/day for both BOD and TSS. For example, if on June 15<sup>th</sup>, the total daily receiving water flow fell below 17 cfs and remained under 17 cfs for 30 consecutive days through July 15<sup>th</sup>, and then the total daily flow remains below 17cfs for an additional 30 consecutive days until August 14<sup>th</sup>, the permittee shall achieve 30 day average limits for BOD and TSS on August 14<sup>th</sup>, using all effluent data collected during the 30 day period (since July 15<sup>th</sup>). As long as the daily receiving water flow remains under 17 cfs, the permittee would be subject to the limits; the 30 day average for subsequent days would be calculated using effluent sampling results from that day and the previous 29 days.

In the event of normal upstream flow conditions (not low flow conditions), the permittee shall enter “NODI 9” on the DMR for BOD and TSS for this month, and report the required parameters in Part I.A.1 of the permit for Outfall 001. See Part IV.E.c of this fact sheet for more detail on the low flow monitoring requirements for BOD and TSS.

## **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.

EPA has reviewed the federal endangered or threatened species of fish and wildlife to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. Based on the low levels of concern, permit conditions, and distribution of listed species in the vicinity of the facility's discharge, EPA has determined that there will be no effects on these 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 Otter 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. 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.

**VIII. 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, 1 Congress Street, Suite 1100 (CIP), Boston, Massachusetts 02114-2023 or via email to [kowalski.nicole@epa.gov](mailto: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.

**IX. 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  
1 Congress Street, Suite 1100 (CIP)  
Boston, Massachusetts 02114-2023  
Telephone: (617) 918-1746 FAX: (617) 918-0746  
email: [kowalski.nicole@epa.gov](mailto:kowalski.nicole@epa.gov)

Paul Hogan, Massachusetts Department of Environmental Protection  
Division of Watershed Management, Surface Water Discharge Permit Program  
627 Main Street, 2<sup>nd</sup> Floor  
Worcester, Massachusetts 01608  
Telephone: (508) 767-2796 FAX: (508) 791-4131  
email: [paul.hogan@state.ma.us](mailto:paul.hogan@state.ma.us)

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Date

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

## **X. ATTACHMENTS**

### **A. Site Plan**

### **B. DMR Data Summary**

### **C. Flow Schematic**

### **D. Schematic of Intake Structure**

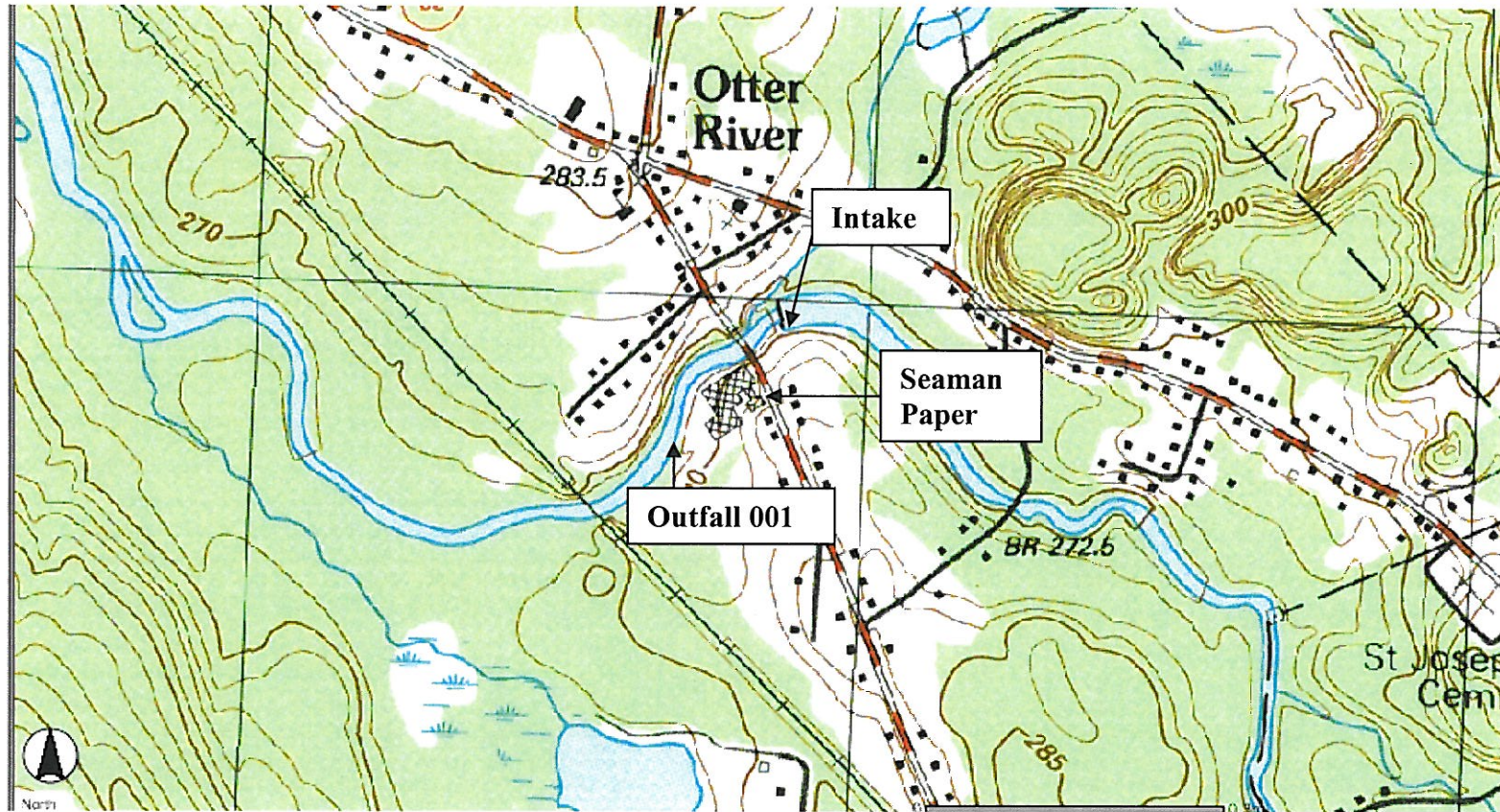
### **E. pH – Dependent Values of the CMC (Acute Criterion)**

### **F. Temperature and pH – Dependent Values of the CCC (Chronic Criterion) for Fish Early Life Stages Present**

Attachments to Fact Sheet

Seaman Papers – MA0000469

Attachment A – Site Plan



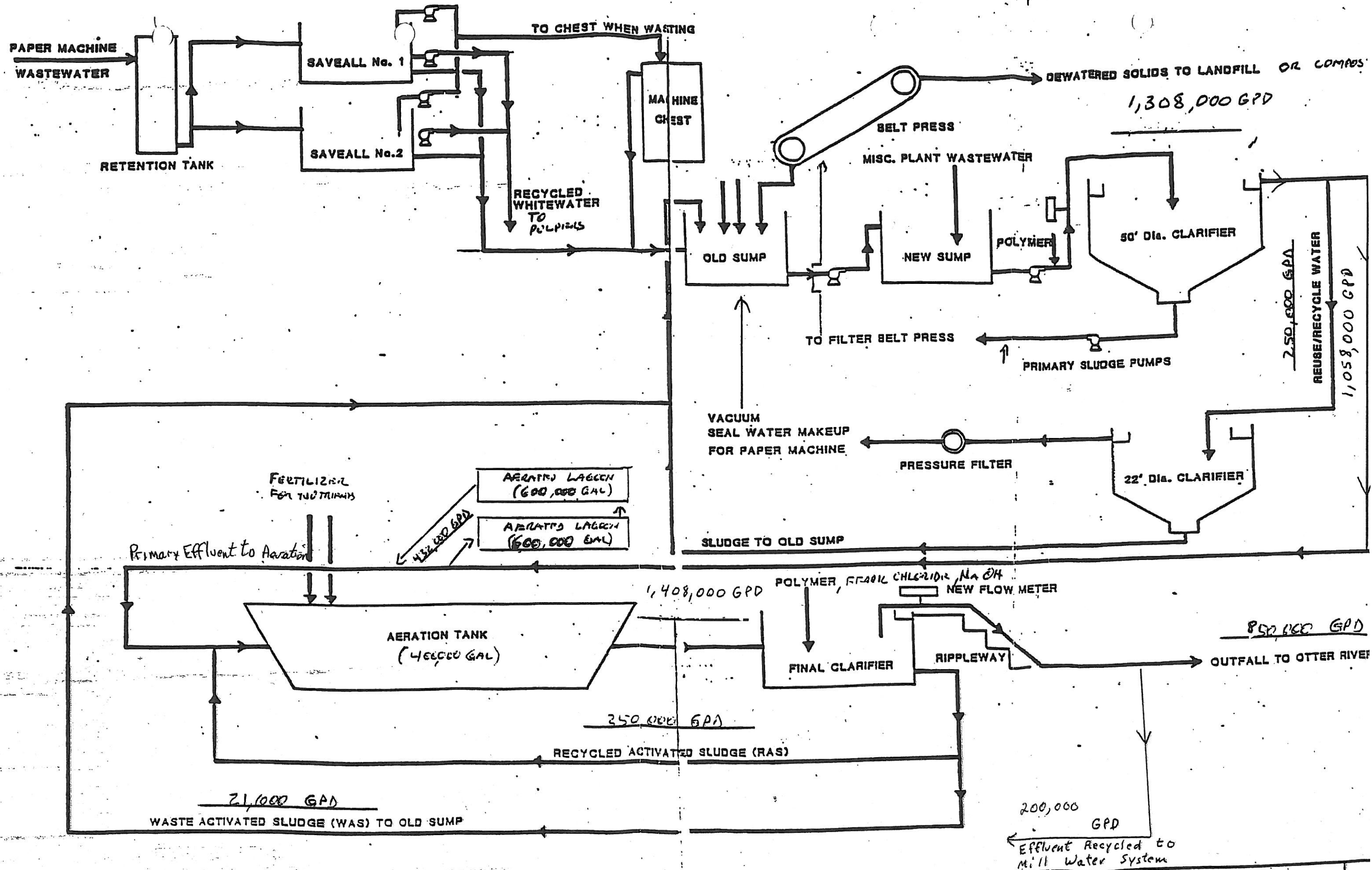


Attachment B - DMR Summary  
Seaman Paper Company - Outfall 001

Date	BOD (May-Oct)**		BOD (Nov-April)		Flow		DO (June-Sept)	pH		Phosphorus	TSS (May-Oct)**		TSS (Nov-April)		Temperature		Upstream Temperature (May-Oct)		BOD5 (May-Oct)		TSS (May-Oct)		Aluminum		LC50	C-NOEC	monthly ave ambient flows	PRTI
	150 lb/d	200 lb/d	400 lb/d	700 lb/d	1.1 Mgal/d	1.4 Mgal/d	Req. Mon. mg/L	6 SU	8.3 SU	.2 mg/L	150 lb/d	200 lb/d	700 lb/d	900 lb/d	Req. Mon. deg F	90 deg F	Req. Mon. deg F	Req. Mon. deg F	286 lb/d	400 lb/d	400 lb/d	600 lb/d	.38 mg/L	3.3 mg/L	100%	23%	USGS gage #01163200	calculated using ave ambient flow
	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MINIMUM	MINIMUM	MAXIMUM	MO AVG	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AV MN	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	MO AVG	DAILY MX	DAILY MN	DAILY MN	cfs	
1/31/2005			104.2	260.6	0.9029	1.1573		6.35	7.5				127.5	193	64.1	67							0.044	0.044	100	50	96.6	
2/28/2005			38.3	98	0.8161	1.1608		6.2	7.05				71.1	97.6	66	70											75.9	
3/31/2005			71.9	132.7	0.8542	1.1178		6.4	7.05				103.8	163	66	72											106.2	
4/30/2005			42.8	67.4	0.8396	1.0226		6.5	7.25	0.162			77	97.3	68.6	70							0	0	100	50	230.6	
5/31/2005					0.8771	1.1182		6.45	7.2	0.171					68.9	77	66.5	67	55	90.5	76	108.9					112.5	0.1538
6/30/2005					0.8892	1.0796	6.8	6.35	7.3	0.166					81.2	88	77.9	78.8	47.4	100.5	59.8	100.5					69.5	0.2211
7/31/2005					0.8213	1.0497	6.2	6.35	7.55	0.186					85.7	89.6	76.5	77	39.5	64.1	74.1	93.3	0	0	100	50	50.3	0.4068
8/31/2005					0.9299	1.1839	6.4	6.2	7.4	0.12					84	88	78	80	34.5	49.3	73.4	93.1					16.8	0.8722
9/30/2005	46.7	66.5			0.8395	1.0414	6.2	6.4	7.35	0.12					80	86	62.5	64	42.5	117.1	74.3	108.9					10.3	3.4411
10/31/2005					0.879	1.0719		6.35	7.25	0.11					71	78	64.5	67	60	103.7	96.7	126.2	0.054	0.054	100	50	201.3	0.0906
11/30/2005			58.2	179.8	0.7398	0.9284		6.25	8.1				87.7	116.8	71	72											125	
12/31/2005			27.2	39	0.7295	0.8728		6.25	7.3				75.7	109.1	64.9	71											113.7	
1/31/2006			35.6	62.7	0.7172	0.8995		6.15	7.6				78.3	103.6	64.8	67							0.024	0.024	100	100	154	
2/28/2006			52.1	116.8	0.708	0.9292		6.55	7.2				89.2	120.1	66.2	68											127.4	
3/31/2006			40.1	49.3	0.718	0.9273		6.7	7.15				77	108.2	70.1	74											51.5	
4/30/2006			42.3	89.2	0.7462	0.9722		6.6	7.25	0.186			87.4	105	76.9	80							0.016	0.016	100	23	46.4	
5/31/2006					0.7956	0.9565		6.7	7.25	0.211					78.3	84	63	64	53.9	140.4	90.6	121.9					89.1	0.3322
6/30/2006					0.8533	1.113	6.4	6.4	7.2	0.124					80.1	84	74.5	75	46.8	96.2	67.7	104.6					108.7	0.1426
7/31/2006					0.857	1.0285	6.3			0.16					83.6	88	75.5	76		77	101.7		0.057	0.057	100	12.5	50.1	0.3811
8/31/2006					0.8266	1.0658	6	6.4	7.15	0.122					82.5	89.5	74	80	28	36.7	80.9	111.4					37.5	0.4177
9/30/2006					0.7957	1.061	6.2	6.7	7.25	0.191					76.5	79	63.5	64	66.3	115	86	138.1					22.2	1.1091
10/31/2006					*	0.9266		6.7	7.4	0.13					70.8	76	50	52	57.1	159.1	82.4	119.3	0.03	0.03	100	100	74.6	0.4612
11/30/2006			42.8	78.6	0.7906	1.088		6.45	7.3				95.2	139.2	69.9	76											123.5	
12/31/2006			42.3	82.2	0.8426	1.0068		6.25	7.3				95.1	156.1	67.8	72											62.7	
1/31/2007			39.7	91.8	0.8106	0.9387		6.5	7.4				90.4	119.5	62.4	68							0.033	0.033	100	12.5	74.5	
2/28/2007			50.8	68	0.08072	1.0373		6.45	6.95				136.2	186.3	61.1	67											31	
3/31/2007			33	49.1	0.8204	0.9781		6.45	7.05				78.6	146.8	67.3	72											104.3	
4/30/2007			57.9	103.2	0.9494	1.237		6.6	7.45	0.132			88.3	130.6	70.1	81							0.019	0.019	100	50	188.2	
5/31/2007					0.8106	0.977		6.6	7.35	0.177					79.3	81			33.4	60.1	73.1	106.8					97	
6/30/2007					0.905	1.172	7	6.85	7.3	0.113					83.1	88	67.5	71	37.9	58.2	76.9	97.7					46.3	0.6657
7/31/2007					0.9083	1.1416	6.7	6.65	7.4	0.133					83	88	64.5	65	47.9	84.5	94.1	141.6	0.036	0.036	100	50	31	1.3103
8/31/2007					0.8127	1.1407	6.2	6.8	7.45	0.138					81.1	86	70.5	71	48.2	100.3	71.2	122.2					13.7	1.9321
9/30/2007					0.757	0.9678	6.8	6.55	7.64	0.105					75.6	82	65	68	29.5	59.4	71.8	102.8					12.7	1.6505
10/31/2007					0.7624	0.9711		6.31	7.55	0.132					77.1	82.5	61.5	63.3	28.1	40.5	72.6	132.7	0.027	0.027	100	50		
11/30/2007			22.4	28.4	0.6152	0.8971		6.25	7.17				61.4	100.4	70.8	74												
12/31/2007			31.1	59.7	0.6838	0.8536		6.16	6.9				58.6	112.7	65.5	68.9												
Average	46.7	66.5	46.3	92.0	0.7910	1.0303	6.4	6.452	7.31	0.147			87.7	128.1	73.2	77.9	68.0	69.6	44.5	86.8	77.7	112.9	0.028	0.028	100	49.8	83.49	0.8492
Maximum	46.7	66.5	104.2	260.6	0.9494	1.2370	7	6.850	8.1	0.211	0	0	136.2	193	85.7	89.6	78	80	66.3	159.1	96.7	141.6	0.057	0.057	100	100	230.6	3.44
Current Limit	150	200	400	700	1.1	1.4	Req. Mon. mg/L	6	8.3	0.2	150	200	700	900	Req. Mon. deg F	90 deg F	Req. Mon. deg F	Req. Mon. deg F	286	400	400	600	0.38	3.3	100	23		
Exceedences	0	0	0	0	0	0	0 NA	0	0	1	0	0	0	0 NA	0 NA	0 NA	0 NA	0 NA	0	0	0	0	0	0	0	2		

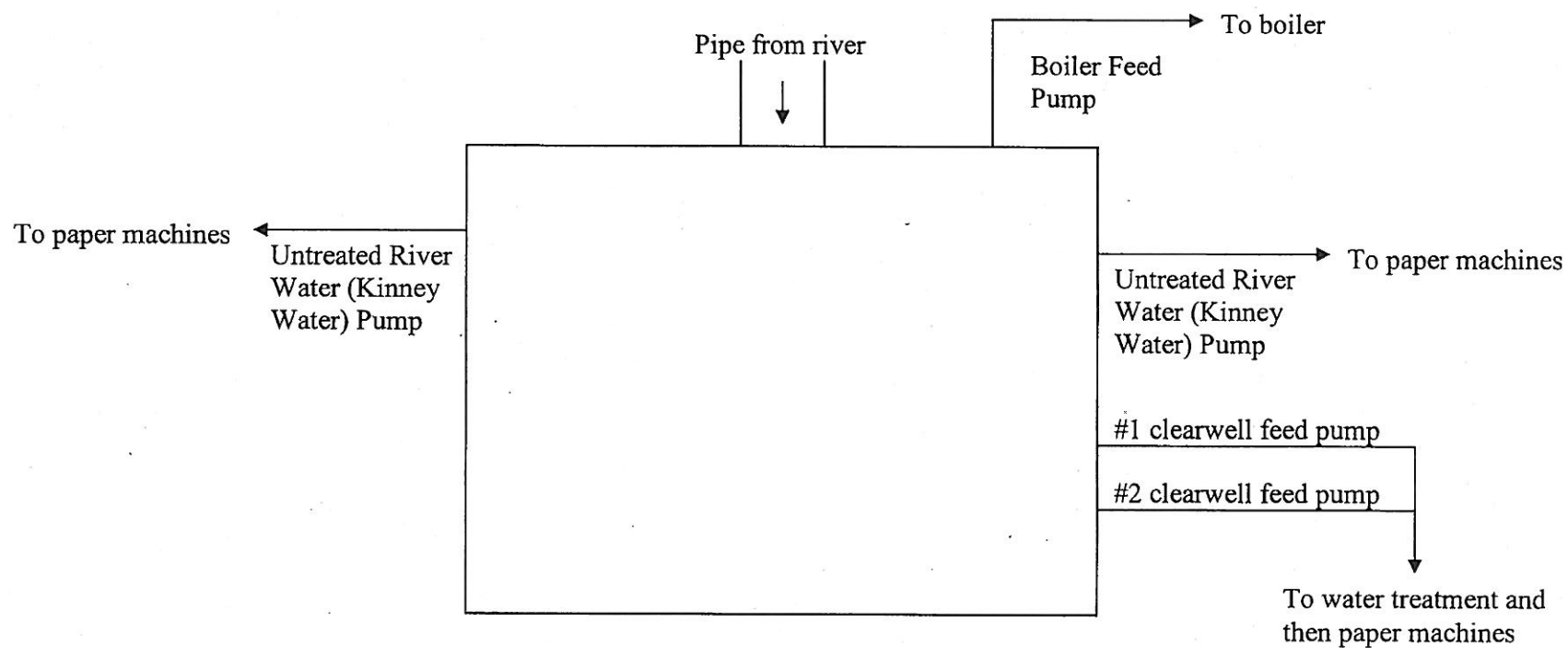
\*7312 MGD for 10/31/2006 is an outlier and has therefore been removed from the calculation

\*\*Apply when total daily flow measured at USGS Gage 01163200 is less than 17cfs for 30 consecutive days



**Attachment D**

**Schematic of Intake Structure**





## Attachment E

### pH-Dependent Values of the CMC (Acute Criterion)

CMC, mg N/L		
pH	Salmonids Present	Salmonids Absent
6.5	32.6	48.8
6.6	31.3	46.8
6.7	29.8	44.6
6.8	28.1	42.0
6.9	26.2	39.1
7.0	24.1	36.1
7.1	22.0	32.8
7.2	19.7	29.5
7.3	17.5	26.2
7.4	15.4	23.0
7.5	13.3	19.9
7.6	11.4	17.0
7.7	9.65	14.4
7.8	8.11	12.1
7.9	6.77	10.1
8.0	5.62	8.40
8.1	4.64	6.95
8.2	3.83	5.72
8.3	3.15	4.71
8.4	2.59	3.88
8.5	2.14	3.20
8.6	1.77	2.65
8.7	1.47	2.20
8.8	1.23	1.84
8.9	1.04	1.56
9.0	0.885	1.32

The National Criterion for Ammonia in Fresh Water - EPA's Aquatic Water Quality Criteria for Ammonia, 1999 Update

## Attachment F

### Temperature and pH-Dependent Values of the CCC (Chronic Criterion) for Fish Early Life Stages Present

CCC for Fish Early Life Stages Present, mg N/L										
pH	Temperature, C									
	0	14	16	18	20	22	24	26	28	30
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

The National Criterion for Ammonia in Fresh Water - EPA's Aquatic Water Quality Criteria for Ammonia, 1999 Update

## **Response to Comments on Draft National Pollutant Discharge Elimination System (NPDES) Permit No. MA0000469 – Seaman Paper Company – Otter River, MA.**

### **Introduction:**

In accordance with the provisions of 40 C.F.R. §124.17, this document presents EPA's response to comments received on the draft NPDES permit modification for Seaman Paper Company (MA0000469). The response to comments explains and supports the EPA determinations that form the basis of the final permit modification. The Seaman Paper Company draft permit modification public comment period began January 6, 2009 and ended February 4, 2009. Comments were received on the draft permit modification from the Connecticut River Watershed Council (CRWC).

The final permit modification is identical to the permit modification that was available for public comment. Although EPA's knowledge of the facility has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit. The response to comments follows.

### **COMMENTS FROM CRWC:**

The permit modification involves changing the effluent limitation range for pH from 6.5-8.3 to 6.0-8.3. The previous permit finalized in 2004 has a pH effluent limitation range of 6.0-8.3. The Statement of Basis says that Seaman Paper will need to add caustic soda to meet the more stringent pH limit, and that the river system is subject to "natural" low pH conditions.

The Seaman facility lies a few miles downstream of the Gardner Wastewater Treatment Plant's discharge into the Otter River. The Fact Sheet for the draft Gardner Wastewater Treatment Plant NPDES permit does not necessarily support the claim that pH upstream of Seaman Paper is due to "natural" conditions. Page 6 of the Gardner Fact Sheet says, "Consequently, there is a reasonable potential that the discharge will cause or contribute to an exceedence of the minimum in-stream water quality standard of 6.5 s.u. under low flow conditions of the receiving water. Therefore, the draft permit establishes the lower pH limit at the in-stream criterion of 6.5 s.u." This Fact Sheet is online at <http://www.epa.gov/NE/npdes/permits/draft/2008/draftma0100994permit.pdf>.

The Gardner Wastewater Treatment Plant's design flow is 5.0 million gallons per day (MGD), which equals 7.75 cubic feet per second (cfs). The 7Q10 at Seaman Paper was re-calculated in the response to comment document to be 3.99 cfs. Therefore, especially under lower flow conditions, the Gardner Wastewater Treatment Plant's discharges have the potential to affect water quality of Seaman Paper Company's intake water. Our thought is that if the Gardner NPDES permit is finalized with the 6.5 limit, this will go a long way to alleviating Seaman's need to add caustic soda.

The Statement of Basis also says that “there is no evidence that in-stream biota have been affected by in-stream pH levels.” We are not certain what evidence was examined to make this statement, as it is not explained in the document. However, we would like to point out that mercury has been reported as a contaminant in the Otter River system (see Gardner Fact Sheet). Elevated mercury levels in fish have been associated with low pH in water bodies (for example, see “what factors affect methylation?” at <http://www.usgs.gov/themes/factsheet/146-00/>). Allowing a low pH discharge from this facility that’s not absolutely warranted may indeed affect stream biota in ways that current testing of in-stream biota (testing not explained in the Statement of Basis) might not detect.

Our suggestion is that the permit modification as proposed not be approved. Changes to the Gardner permit should be implemented, and the pH limit at Seaman Paper should be maintained at 6.5. Perhaps there could be a stipulation that if the Gardner changes don’t adequately address the issue after a certain period of time, the Seaman Paper Company could at that point petition EPA to change the permit. Testing the pH of the intake water might be a good idea to document the pH of the water that Seaman receives is lower than state standards. We are sympathetic to the desire not to use extra chemicals to meet effluent standards, but we believe a compromise can be worked out between EPA and Seaman Paper Company that would ultimately be better for the Otter River.

## **RESPONSE:**

EPA believes the pH effluent limitation range of 6.0 – 8.3 SU in the draft permit modification will not contribute to a violation of Massachusetts Water Quality Standards. EPA agrees with MassDEP that the pH limit of 6.0 will not result in the discharge from Seaman Paper Company contributing to a violation of the Massachusetts Surface Water Quality Standards (314 CMR 4.00). MassDEP states, “The in-stream flow will provide sufficient dilution such that the impact from the Seaman Paper Company will have little if any measureable change in the in-stream pH conditions.”<sup>1</sup>

EPA anticipates that an increased pH limit for the discharge from the Gardner WWTP (upstream of Seaman Paper) will have the effect of increasing the pH downstream of the WWTP, thus increasing the pH of the receiving water for Seaman Paper. This increase in the pH of the receiving water for Seaman Paper, however, will not change the determination that the in-stream flow of the Otter River will provide sufficient dilution such that the discharge will not violate Massachusetts Water Quality Standards. In fact, a receiving water with a higher pH will account even further than dilution for a pH discharge of 6.0 SU from Seaman Paper.

Regarding CRWC’s comment on methylation of mercury, the Massachusetts Water Quality Standards are protective of aquatic life; therefore, the discharge from Seaman is also expected to be protective of aquatic life based on the above discussion that it will not contribute to a violation of Massachusetts Water Quality Standards due to available dilution.

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<sup>1</sup> Email correspondence between Paul Hogan (MassDEP) and Nicole Kowalski (EPA), November 17, 2008.

Based upon these circumstances and the opinion of the agencies that chemical addition simply to meet the 6.5 level is not warranted, EPA believes allowing a discharge pH of 6.0 SU will maintain compliance with the Massachusetts Surface Water Quality Standards. Therefore the pH effluent limitation range of 6.0 – 8.3 SU for the discharge from Outfall 001 shall remain in the permit modification.

**RESPONSE TO PUBLIC COMMENTS****Seaman Paper Company of Massachusetts, Inc.  
NPDES No. MA0000469**

On December 9, 2003, the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) released for public notice and comment a draft National Pollutant Discharge Elimination System (NPDES) permit developed pursuant to an application from the Seaman Paper Company of Massachusetts, Inc., for the reissuance of a permit to discharge treated process wastewater to the Otter River via Outfall 001 at an average of 1.1 million gallons per day. The public comment period for this draft permit expired on January 7, 2004. The only Comments received were from the Riverways Program, Department of Fisheries, Wildlife & Environmental Law Enforcement and from the permittee.

After a review of the comments received, EPA has made a final decision to issue the permit authorizing this discharge. The following response to comments describes the changes that have been made to the permit from the draft and briefly describes and responds to the comments on the draft permit. Clarifications which EPA considers necessary are also included below. The comment letters are part of the administrative record and they may be paraphrased herein. A copy of the final permit may be obtained by writing or by calling Doug Corb, EPA Massachusetts NPDES Permits Program (CPE), 1 Congress Street, Suite 1100, Boston, MA 02114-2023; telephone: (617) 918-1565.

**Riverways Program, Dept. of Fisheries, Wildlife & Environmental Law Enforcement****Comment 1**

The draft permit will continue to allow a pH range of 6.0 to 8.3 s.u. in the effluent. The Massachusetts water quality standards for Class B waters require a pH of between 6.5 and 8.3 s.u. The draft permit indicates in Footnote # 1 pH is required for State Certification. Given this premise it is all the more important that the pH of the effluent comply with the State's water quality standards for Class B waters. The 7Q10 of the waterways was calculated to be 3.7 mgd. The Gardner Wastewater Treatment Plant discharge has a maximum allowable average flow of 5.0 mgd though it is below this monthly average and is generally around 3 mgd. The flow of the Gardner WWTP and 7Q10 is significant in the discussion about the allowable pH for the Seaman facility because the Gardner discharge frequently has depressed pH levels. Throughout all of 2000-2003 the minimum pH of the Gardner facility was below Class B standard of 6.5, often below 6 s.u., and frequently the maximum pH was barely above 6.5 as listed in the monthly discharge reports. In a low flow condition the acidic Gardner flow would dominate the Otter River leading to a situation where the Otter River may fail to meet MA Class B standards for pH due to wastewater discharges. The Seaman flow should be asked to meet Massachusetts' Class B warm water standards and not contribute to the possibility of pH levels in the river below state standards.

**Response 1**

The EPA Effluent Limitation Guidelines (ELG) for the facility, *40 CFR 430, Subpart J, Secondary Fiber Non-Deink*, sets effluent pH at 5.0-9.0 standard units. The permit limits are more stringent than those ELGs set for that effluent category. The ambient in-stream water which is used for part of the process water is often lower than the Class B standard of 6.5 thus indicating that the river system is subject to natural low pH conditions. In addition, ground water wells are also used for process water and such waters are normally low in pH. Surveys of the receiving water have not shown any adverse impact to biota due to the lower pH range in the system. Specifically, the DEP's, Millers River Basin 2002 Water Quality Assessment Report, Appendix A, Table 9, shows that the pH above the Gardner discharge has a natural range of 6.0 - 6.1 SU. The permit will remain at 6.0 as the lower limit based upon these circumstances and the opinion of the agencies that adjustment of the final effluent with chemical addition simply to meet the 6.5 level is not warranted. The 6.0-8.3 range is also reflective of the previous permit.

#### Comment 2

More stringent limits for BOD and TSS will be required of the facility if flows in the river at the USGS gage fall below 17 cfs for 30 consecutive days. How was both 17 cfs and 30 days arrived at as triggers? Adjusting loads based on season, flow and the characteristics of the receiving water, rather than a national technology based limit that use production rates rather than the ability of the receiving water to assimilate the load, is a sound approach, we merely wonder how the loads and flow rate was determined and if they are conservative enough for a river with several other point sources. The Fact Sheet lists the lowest gage reading seen in recent years as 5.67 cfs or about 3.7 mgd. During this same time period, Gardner had summer flows of between 2.3 and 3.2 mgd resulting in a receiving water dominated by Gardner's effluent. Gardner's TSS loadings ranged from 111 to 207 lbs/day average in the summer months of 1999-2001. The Otter River downstream of the Seaman discharge would have the combined load of Seaman and Gardner discharges with little dilution from base flow. The timing of the low flow limitation and the flow rate that triggers the lower loading can be significant for the water quality of the Otter River.

#### Response 3

The BOD and TSS limits which are in effect when the receiving water flow falls below 17 CFS are the same limits which were in the previous permit. The limits are based on water quality modeling conducted by the permittee's consultant which demonstrated that the BOD limitations are protective of receiving water dissolved oxygen concentrations under low flow conditions.

In order to achieve the monthly average limitations when the trigger of 17 CFS for 30 consecutive days is met, the permittee must reduce its discharge well before the trigger date. The maximum daily limit must be met for all the days within the 30 consecutive day period (see footnote 3).

We would also note that the Templeton Wastewater Treatment Plant which is located in the same segment of the Otter River, 1.5 miles downstream of Seaman Paper, is undergoing an upgrade. Its permitted BOD load will decrease significantly due to the planned reduction in design flow from 2.8 MGD to 0.6 MGD.

The reissued permit for Seaman Paper will carry forward the limits from the 1998 permit. These limits may be revisited if a total maximum daily load is established for the Otter River or if water quality data indicates that there is an impairment of the water quality standards.

#### Comment 3

The facility has a maximum temperature limit but no maximum change in water temperature over ambient conditions. The facility should have a maximum allowable temperature change of 5.0 °F over the ambient water after reasonable mixing as required in the Class B Water Quality Standards in Massachusetts. The ambient water temperature should be measured upstream of the outflow in the main flow of the Otter River and at a depth that would be reflective of the average temperature of the main stem river. The downstream temperature should also be measured in a section of the river that would be representative of ambient conditions after reasonable dilution of the effluent.

#### Response 3

The permit will contain a statement that the discharge cannot result in an in-stream change in ambient temperature greater than 5 °F to be consistent with the Massachusetts Surface Water Quality Standards [314 CMR 4.05(3)(b)(2)]. The permit will also require temperature sampling twice per month upstream of the discharge for the period of May - October. The period of November - April historically exhibits higher stream flow where the dilution will reduce temperature increases. The agencies may use the data to decide if an effluent temperature reduction is warranted. After one year of temperature data collection, the permittee may petition the agencies for a reduction in the temperature monitoring requirements.

#### Comment 4

The Otter River has elevated phosphorus concentrations and this draft permit makes an admirable effort to reduce the phosphorus loading from the Seaman facility by decreasing allowable concentrations by an order of magnitude. The facility is unique in its ability to control phosphorus since it is a product added to the waste stream to facilitate proper operation. Given this flexibility it might be beneficial to the receiving water if the plant could have a special reduction for summer low flows as this permit institutes for BOD and TSS. At these low flow times, the receiving water would have a larger percentage of effluent to base flow from the Gardner WWTP.



While the Gardner WWTP may not have the same requirement, it is arguably easier for the Seaman plant to adjust its phosphorus concentrations/additions than a municipal treatment facility. If the plant's treatment process can operate smoothly with smaller additions of phosphorus during summer low flow periods, a reduction in concentration and loadings should be considered to protect the quality of the receiving water.

#### Response 4

The effluent limit of 0.2 mg/l represents the “highest and best” practicable level of phosphorus control. The facility uses phosphorus only to maintain the biomass in its treatment system. The level of phosphorus addition is monitored and maintained at a level deemed necessary to maintain the biomass but not to overuse the chemical. It is the opinion of the agencies that 0.2 mg/l is an appropriate limit and that variations during periodic low flow events are difficult to control and that use of the chemical will be restricted by the facility due to the cost of such addition. The seasonal limit of 0.2 mg/l will remain in the final permit.

#### Comment 5

The Fact Sheet says the seasonal TP limit will be adjusted to reflect the same seasonality as other Otter River permits: April 1 through October 31. The draft permit still has the seasonal phosphorus limit as starting May 1<sup>st</sup>.

#### Response 5

The recently reissued permit for the Town of Gardner has a phosphorus monitoring period of April 1<sup>st</sup> through October 31<sup>st</sup>. The final permit will have the same total phosphorus monitoring period as the Gardner permit.

#### **Seaman Paper Company of Massachusetts, Inc. (Seaman Paper)**

#### Comment 1

The current permit requires Seaman Paper to sample for whole effluent toxicity (WET) in the month of March. The draft permit requires WET testing during the month of April. Seaman Paper must contract with the WET testing laboratory well in advance of either sampling date. We do not know which permit will be in effect in March. Seaman Paper would request relief from having to schedule back-to-back quarterly WET tests in both March and April because of the uncertainty of the effective date of the new permit and the change in the sampling months.

#### Response 1

Occasionally when permits are delayed during the reissuance process, the scheduling of Whole Effluent Toxicity (WET) tests becomes problematic for the permittee. WET tests must be scheduled with the laboratory well in advance of the sampling date to insure test organisms are available.

The required sampling months have changed from the current permit (issued in 1998) and the reissued permit. Because EPA and DEP could not predict in which month the permit will be reissued, the permittee could not know which WET testing schedule applied. The permittee could not coordinate with their laboratory without the specific test dates. The permit has experienced repeated delays over a number of months. The permittee shall not be required to conduct the March/April, June/July or the September/October, 2004 WET tests based on the aforementioned reasons.