

# Permit Fact Sheet

## General Information

Permit Number:	WI-0003468-10-0						
Permittee Name:	Pixelle Androscoggin LLC - Water Renewal Center						
Address:	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;"><b>Stevens Point Mill</b></td> <td style="width: 50%; text-align: center;"><b>Water Renewal Center</b></td> </tr> <tr> <td style="text-align: center;">707 Arlington Place</td> <td style="text-align: center;">2690 West River Drive</td> </tr> <tr> <td style="text-align: center;">Stevens Point, Wisconsin 54481</td> <td style="text-align: center;">Stevens Point, Wisconsin 54481</td> </tr> </table>	<b>Stevens Point Mill</b>	<b>Water Renewal Center</b>	707 Arlington Place	2690 West River Drive	Stevens Point, Wisconsin 54481	Stevens Point, Wisconsin 54481
<b>Stevens Point Mill</b>	<b>Water Renewal Center</b>						
707 Arlington Place	2690 West River Drive						
Stevens Point, Wisconsin 54481	Stevens Point, Wisconsin 54481						
City/State/Zip:	STEVENS POINT WI 54481						
Discharge Location:	The Wisconsin River in Portage County, and the groundwaters of primarily Adams, Clark, Jackson, Juneau, Marathon, Portage, Waushara, and Wood Counties via approved landspreading sites.						
Receiving Water:	Wisconsin River						
StreamFlow (Q <sub>7,10</sub> ):	7-Q10 = 1110 cfs						
Stream Classification:	Warm Water Sport Fish (WWSF) community and non-public water supply						
Discharge Type:	Continuous						

## Facility Description

Pixelle Androscoggin LLC continues to operate the Stevens Point Mill and the Water Renewal Center under WPDES permit no. WI-0003468-10-0.

The Stevens Point Mill is a non-integrated paper mill that has two specialty paper machines with an annual capacity of approximately 210,000 tons per year. In addition, the facility operations include an off-machine hot soft calender, two finishing winders and four salvage winders. The mill has a stock preparation area that processes market pulp as raw material stock for the paper machines and there are two independent coating departments that provide surface coatings to the respective paper machines. There are two gas-fired boilers that provide steam to the mill and one turbine generator associated with one of the boilers. Some of the specialty products include flexible packaging papers for pouches, spiral canisters, bags and various types of wrapping paper; label papers for bottles, jars and cans; high-gloss papers that are metalized; and technical papers for sales receipts, address labels, postage stamps and release liners. The mill's acid papermaking process is elemental chlorine-free. The mill holds the following certifications for its operations and products: FSC, SFI, PEFC, ISO 9001-2015 and Green Matters.

Pixelle Androscoggin LLC draws 2.95 MGD of municipal water for the processing operations at the Stevens Point Mill and 5,651 GPD from the Village of Whiting for Water Renewal Center. Of this, 0.060 MGD is returned to the municipal wastewater treatment plant from the Mill's sanitary usage and 0.030 MGD is returned to the atmosphere from the paper drying process.

The Mill does not use additives to treat the seal water prior to use nor does it treat the seal water prior to discharge. The Water Renewal Center discharges treated process wastewater to the Wisconsin River by way of outfall 003 during normal operations. The Water Renewal Center provides pH neutralization, primary clarification, activated sludge secondary treatment and sludge dewatering. In addition to treating process wastewaters from the Stevens Point Mill, the Water Renewal Center treats leachate from the Water Renewal Center landfill, which is adjacent to the Water Renewal Center.

## Substantial Compliance Determination

Enforcement During Last Permit: None

After a desk top review of all discharge monitoring reports, land app reports, compliance schedule items, and a site visit on 11/30/2022, the Pixelle Androscoggin LLC- Water Renewal Center has been found to be in substantial compliance with their current permit.

Compliance determination entered by Nicholas Lindstrom on March 12, 2024.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)
003	Maximum Day <sup>1</sup> : 5.87 MGD [April, 2022] Maximum Annual Average <sup>1</sup> : 4.27 MGD [2022]	OUTFALL: At Sampling Point 003, which is located in the sample house east of the Water Renewal Center's secondary clarifiers, final effluent from the Water Renewal Center shall be monitored prior to discharge to the Wisconsin River, which is located in the tailrace of the Whiting Mill dam on the east, downstream side of the dam. Effluent discharged through Outfall 003 can also be diverted to serve as gate deicing water for the Whiting Mill dam.
012	Maximum Annual Average <sup>1</sup> : 3,042 GPD [2021]	OUTFALL: At Sampling Point 012 (formerly 112), which is located in a manhole southwest of the Water Renewal Center's aeration basins, landfill groundwater shall be monitored prior to discharge to an unnamed drainage ditch that empties to the Wisconsin River on the west bank downstream from the Whiting Mill dam.
013	Waste Volume Annual Average <sup>1</sup> : 5,235 tons (dry weight basis)	SLUDGE: Wastewater treatment system sludge from the Water Renewal Center (ConsoGro2) shall be sampled prior to land application via Outfall 013.
117	N/A	FIELD BLANK: Mercury field blank to accompany mercury sampling at Sampling Point 003, Water Renewal Center effluent.

<sup>1</sup>: As reported in submitted application.

## 1 Inplant - Monitoring and Limitations

### Sample Point Number: 117- WRC MERCURY FIELD BLANK

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Quarterly	Blank	Effective through 2025, 2026 and 2027.

### Changes from Previous Permit:

Sample Point 117 monitoring requirements were re-evaluated for the proposed permit term and no changes were made from the previous permit.

## Explanation of Limits and Monitoring Requirements

**Mercury:** Quarterly mercury sample collection is required for 3 of the permit term's 5 years to satisfy the data requirements of s. NR 106.145(2)(b), Wis. Adm. Code.

## 2 Surface Water - Monitoring and Limitations

### Sample Point Number: 003- WRC EFFLUENT(tailrace outfall)

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	See permit subsection 2.2.1.1
BOD5, Total	Daily Max	3,958 lbs/day	5/Week	Calculated	
BOD5, Total	Monthly Avg	2,149 lbs/day	5/Week	Calculated	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	See permit subsection 2.2.1.1
Suspended Solids, Total	Daily Max	4,976 lbs/day	5/Week	Calculated	
Suspended Solids, Total	Monthly Avg	2,601 lbs/day	5/Week	Calculated	
Mercury, Total Recoverable		ng/L	Quarterly	Grab	Effective through 2025, 2026 and 2027.
Phosphorus, Total	Monthly Avg	0.93 mg/L	Weekly	24-Hr Flow Prop Comp	Existing concentration limits that are already in effect (Interim, TBEL, WQBELs dictated by s. NR 217.13, Wis. Adm. Code) will be maintained to prevent backsliding.
Phosphorus, Total	6-Month Avg	13 lbs/day	Monthly	Calculated	See TMDL section below.
Phosphorus, Total	Monthly Avg	40 lbs/day	Monthly	Calculated	See TMDL section below.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL section below.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					the last day of the month on the DMR. See TMDL section below.
PFOS		ng/L	Monthly	24-Hr Flow Prop Comp	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	Monthly	24-Hr Flow Prop Comp	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
Temperature		deg F	Daily	Continuous	
pH (Minimum)	Daily Min	5.0 su	Daily	Continuous	See permit subsection 2.2.1.7
pH (Maximum)	Daily Max	9.0 su	Daily	Continuous	See permit subsection 2.2.1.7
pH Total Exceedance Time Minutes	Monthly Total	446 minutes	Daily	Continuous	See permit subsection 2.2.1.7
pH Exceedances Greater Than 60 Minutes	Daily Max	0 Number	Daily	Continuous	See permit subsection 2.2.1.7
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See permit subsection 2.2.1.8

### Changes from Previous Permit

Sample Point 003 monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit;

**Limits:** Limits from theoretical Outfall 011 have been added under Outfall 003 now that Outfall 011 has been deleted. The last emergency bypass discharges through Outfalls 009 and 010 occurred in 2009. Since Outfall 011 accounted for the combined discharge of Outfall 003 and bypass Outfalls 009 and 010, it is no longer necessary.

**BOD<sub>5</sub>:** Daily max of 3,958 lbs/day and monthly average of 2,149 lbs/day limits added at the frequencies of five times per week. These limits were previously part of theoretical outfall 011 limits, although the frequency has now changed from three times per week to five times per week to better track the significant variability of the data and per the [Monitoring Frequencies for Individual Wastewater Permits](#) guidance (April 12, 2021). Standard monitoring frequency of daily is not deemed necessary as the facility has demonstrated excellent performance levels that will allow for limit compliance to be met. BOD<sub>5</sub> concentration parameter also added as standard set-up as this helps the Department verify the mass conversions.

**Suspended Solids:** Daily max of 4,976 lbs/day and monthly average of 2,601 lbs/day limits added at the frequencies of five times per week. These limits were previously part of theoretical outfall 011 limits, although the frequency has now changed from three times per week to five times per week to better track the significant variability of the data and per the

Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021). Standard monitoring frequency of daily is not deemed necessary as the facility has demonstrated excellent performance levels that will allow for limit compliance to be met. Suspended solids concentration parameter also added as standard set-up as this helps the Department verify the mass conversions.

**Phosphorus:** Mass based phosphorus TMDL limits of 13 lbs/day as a six-month average and 40 lbs/day as a monthly average have been added to the permit to comply with requirements of the Wisconsin River TMDL. Effluent concentration limit of 0.93 mg/L remains to prevent backsliding but frequency of sampling changed from one time per month to one time per week as current data shows significant variability and because weekly sampling has been the minimum sampling frequency for similar facilities. Upon permit reissuance, concentrations will be used to calculate amounts reported for mass-based limits. An additional reporting requirement for lbs/month will be used to calculate the facility's 12-month rolling sum of total monthly discharge, which can be compared directly to the facility's designated WLA.

**PFOS and PFOA:** Monthly monitoring is included in the permit in accordance with s. NR 106.98(2)(d), Wis. Adm. Code.

**Temperature:** Daily temperature monitoring added.

**pH:** The limits have remained the same but they are now expanded in the table.

#### **Narrative Requirements:**

- "Sample Frequency for BODs and Total Suspended Solids (TSS)" subsection replaced by "Sample Frequency for BOD5, Total Suspended Solids (TSS) and Phosphorus" to include phosphorus information too and update sample frequency information.
- To explain the new Phosphorus requirements, subsection "Total Maximum Daily Load (TMDL) Limitations for Total Phosphorus" was added.
- "PFOS/PFOA Sampling and Reporting Requirements" and "PFOS/PFOA Minimization Plan Determination of Need" subsections were added to discuss PFOS/PFOA requirements.
- "Effluent Temperature Monitoring" subsection added to explain how continuous temperature samples shall be collected.

### **Explanation of Limits and Monitoring Requirements**

Refer to the WQBEL memo for the detailed calculations, prepared by the Water Quality Bureau dated March 09, 2023 used for this reissuance.

**BOD<sub>5</sub> and Suspended Solids:** Technology based effluent limits. See fact sheet attachment Appendix A: Technology Based Effluent Limitations for more information.

**Wisconsin River Total Maximum Daily Load (TMDL):** The permitted facility is included within the Wisconsin River Basin Total Maximum Daily Load (TMDL), which was approved by EPA April 26, 2019. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin originally included in Appendix K of the TMDL report and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee's approved SSC-based limits are consistent with the assumptions and requirements of the EPA-approved WLA in the TMDL.

The approved TMDL expresses WLAs as 3,197 lbs/year and 8.76 lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the department's *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Program*, mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at <https://prodoasint.dnr.wi.gov/swims/downloadDocument.do?id=167886175>). Continuously

discharging facilities covered by the WRB TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits (averaging period of May through October and November through April) are also included. The equivalent effluent concentration of 0.246 mg/L was calculated for the facility, thus, TMDL based mass limits are expressed as a six-month average and a monthly average equal to three times the six-month average limits.

Facilities with WRB TMDL based effluent limits for phosphorus must report the 12-month rolling sum of total monthly discharge (lbs/yr). If reported 12-month rolling sums exceed the facility's max annual WLA, the facility's mass limits (monthly average and six-month average) may be recalculated using more appropriate CVs or monitoring frequencies when the permit is reissued to bring discharge levels into compliance with the facility's given WLA.

**PFOS and PFOA:** NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for industrial dischargers to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(d), Wis. Adm. Code. The department evaluated the need for PFOS and PFOA monitoring taking into consideration industry type and other potential sources of PFOS or PFOA. Based on information available at the time the proposed permit was drafted, it was identified that the industrial discharger category may be a potential source of PFOS/PFOA. Therefore, monthly monitoring is included. The initial determination of need sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

**Temperature:** Temperature data for this outfall is necessary to perform a reasonable potential analysis. Currently, no temperature data is available for Outfall 003. Temperature data was collected at Outfalls 021 and 022 which discharged seal water and noncontact cooling water. Outfalls 021 and 022 have been closed off and the discharge has been rerouted to Outfall 003. These discharges are expected to contribute the majority of the heat load at Outfall 003.

**pH:** Limits for pH remain unchanged. Both current and proposed permits specify pH limits of 5.0 minimum and 9.0 maximum pursuant to s. NR 284.12, Wis. Adm. Code, while allowing occasional excursions.

**Monitoring Frequencies:** The Monitoring Frequencies for Individual Wastewater Permits guidance (April 12, 2021) recommends that standard monitoring frequencies be included in individual wastewater permits based on the size and type of the facility, in order to characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Guidance and requirements in administrative code were considered when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term.

The department has determined at this time that an increase in monitoring frequency is warranted because of data variability.

**Expression of Limits:** In accordance with the federal regulation 40 CFR 122.45(d) and s. NR 205.065, Wis. Adm. Code. limits in this permit are to be expressed as daily maximum and monthly average limits whenever practicable.

**Whole effluent toxicity:** Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09, Wis. Adm. Code, as revised August 2016. (See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at <http://dnr.wi.gov/topic/wastewater/wet.html>).

## Sample Point Number: 012- WRC LANDFILL GROUNDWATER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		gpd	1/ 6 Months	Estimated	
COD, Filtered		mg/L	1/ 6 Months	Grab	

### Changes from Previous Permit

Sample Point 012 monitoring requirements were re-evaluated for the proposed permit term and no changes were made from the previous permit.

## 3 Land Application - Sludge/By-Product Solids (industrial only)

### Sample Point Number: 013- WRC SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Quarterly	Grab Comp	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Grab Comp	
Cadmium Dry Wt		mg/kg	Annual	Grab Comp	
Copper Dry Wt		mg/kg	Annual	Grab Comp	
Dioxin, 2,3,7,8-TCDD Dry Wt		ng/kg	Annual	Grab Comp	
Dioxin, 2,3,7,8-TCDD TE		ng/kg	Annual	Calculated	
Furan, 2,3,7,8-TCDF Dry Wt		ng/kg	Annual	Grab Comp	
Lead Dry Wt		mg/kg	Annual	Grab Comp	
Nickel Dry Wt		mg/kg	Annual	Grab Comp	
Nitrogen, Ammonia (NH3-N) Total		Percent	Annual	Grab Comp	
pH Field		su	Annual	Grab	
Phosphorus, Total		Percent	Annual	Grab Comp	
Phosphorus, Water Extractable		% of Tot P	Annual	Calculated	
Potassium, Total Recoverable		Percent	Annual	Grab Comp	
Zinc Dry Wt		mg/kg	Annual	Grab Comp	

**Monitoring Requirements and Limitations**

<b>Parameter</b>	<b>Limit Type</b>	<b>Limit and Units</b>	<b>Sample Frequency</b>	<b>Sample Type</b>	<b>Notes</b>
Aluminum Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Barium, Total Recoverable		mg/kg	Once	Grab Comp	Sample in 2025.
Boron Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Calcium Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Chloride		Percent	Once	Grab Comp	Sample in 2025.
Fluoride		mg/kg	Once	Grab Comp	Sample in 2025.
Iron Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Magnesium Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Manganese Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Molybdenum Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Nitrogen, Nitrite + Nitrate Total		Percent	Once	Grab Comp	Sample in 2025.
Sodium Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
Strontium, Total Recoverable		mg/kg	Once	Grab Comp	Sample in 2025.
Sulfate, Total		mg/kg	Once	Grab Comp	Sample in 2025.
PCB Total Dry Wt		mg/kg	Once	Grab Comp	Sample in 2025.
PFOA + PFOS		µg/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
Priority Pollutant Scan			Once	Grab Comp	As specified in ch. NR 215.03 (1-6), Wis. Adm. Code (excluding asbestos). Use grab samples for mercury, cyanide and VOCs. Use 24-hr flow proportional samples for all other parameters.
Dioxins & Furans (all congeners)			Once	Grab Comp	As specified in ch. NR 106.115, Wis. Adm. Code.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more



Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					information.

### Changes from Previous Permit:

Sample Point 013 monitoring requirements were re-evaluated for the proposed permit term and the following changes were made from the previous permit;

**PCB Total Dry Wt:** This parameter is part of a picklist in the Department’s coding system and the default has changed from ug/kg to mg/kg.

**PFOA + PFOS and PFAS Dry Wt:** Annual monitoring is included in the permit pursuant s. NR 214.18(5)(b), Wis. Adm. Code.

### Narrative Requirements:

- “Total Dioxin Equivalents (TDE) Limitations” and “Calculation of Dioxin Toxicity Equivalence (TEQ)” language updated to align this permit’s monitoring requirements with those of similar facilities. As part of this update, Dioxin Toxicity Equivalence (TEQ) calculations were added to the permit, outlining the Toxicity Equivalency Factors to be used for each specific congener.
- “Prediction of TDE Loading Prior to Application” section added to predict the TDE loading prior to application to prevent potential overloading of the site.
- “Daily Log” subsection added to add important information pertaining to daily log requirements.
- “Sludge Monitoring for PFAS” subsection added to further explain which PFAS compounds shall be sampled.
- “Sampling and Reporting Sludge Samples for PFAS” subsection added to explain sampling and reporting procedures.
- “PFAS Land Application Requirements” subsection added as additional information.

### Explanation of Limits and Monitoring Requirements

s. NR 214.18(5), Wis. Adm. Code, states: “*The department may require in a WPDES permit that the sludge spreading-discharge be monitored for total suspended solids, forms of nitrogen, chloride, metals or any other pollutant that may be present. The department shall select the pollutants to be monitored and the required frequency of monitoring on a case-by-case basis by considering the potential public health impacts, probable environmental impact, soil and geologic conditions, past operating performance, concentrations and characteristics of pollutants in the discharge and other relevant information.*” This forms the basis for the following monitoring requirements.

**Total Solids:** ‘Total Solids’ monitoring is important for waste characterization. This also ensures the permittee is reporting the solids results already obtained from the lab.

**TKN:** ‘TKN (Total Kjeldahl Nitrogen)’ monitoring is required for calculation of application rates for nutrient tracking purposes.

**Chloride:** ‘Chloride’ monitoring is required to ensure the NR 214 chloride loading limit of 170 lbs/acre/year (or 340 lbs/acre/2 years) is not exceeded.

**Ammonia:** Ammonia monitoring on an annual basis allows further tracking of nitrogen and characterization of the waste type.

**Metals:** Metals (Lead, Zinc, Copper, Cadmium, Nickel) monitoring is proposed to track the specific metal loading rates on approved landspreading sites in accordance with the requirements of s. NR 214.18, Table 4, Wis. Adm. Code.

**Table 4**  
**Maximum Cumulative Cadmium, Copper, Lead, Nickel**  
**and Zinc Application for a Landspreading Site**

	Soil Cation Exchange Capacity (meq/100g)			
	Less than 5 lbs/ac	5–10 lbs/ac	10–15 lbs/ac	Greater than 15 lbs/ac
Lead	445	890	1,335	1,750
Zinc	225	445	670	890
Copper	110	220	335	445
Nickel	45	90	135	180
Cadmium				
Soil pH < 6.5	4.5	4.5	4.5	4.5
Soil pH ≥ 6.5	4.5	9.0	13.5	18

**PCBs:** Total PCBs is required as pulp/paper manufacturers are historical users of these compounds. This will allow the department to determine the health risks associated with this landspreading activity.

**Dioxins & Furans:** Monitoring for all 17 congeners of Dioxins and Furans is required as pulp/paper manufacturers are historical users of these compounds. They're listed here:

- 2,3,7,8–TCDD
- 1,2,3,7,8–PeCDD
- 1,2,3,4,7,8–HxCDD
- Page 25 of 65
- 1,2,3,6,7,8–HxCDD
- 1,2,3,7,8,9–HxCDD
- 1,2,3,4,6,7,8–HpCDD
- OCDD
- 2,3,7,8–TCDF
- 1,2,3,7,8–PeCDF
- 2,3,4,7,8–PeCDF
- 1,2,3,4,7,8–HxCDF
- 1,2,3,6,7,8–HxCDF
- 2,3,4,6,7,8–HxCDF
- 1,2,3,7,8,9–HxCDF
- 1,2,3,4,6,7,8–HpCDF
- 1,2,3,4,7,8,9–HpCDF
- OCDF

**Priority Pollutant Scan:** A priority pollutant scan is required to adequately characterize this waste and assess potential health risks.

**PFAS:** The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA is currently developing a risk assessment to determine future land application rates and expects to release this risk assessment by the end of 2024. In the interim, the department has developed the “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS”.

Collecting sludge data on PFAS concentrations from a wide range of wastewater treatment facilities will help protect public health from exposure to elevated levels of PFAS and determine the department’s implementation of EPA’s recommendations. To quantitate this risk, PFAS sampling has been included in the proposed WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code

**Water Extractable Phosphorus-** Water extractable phosphorus (WEP) is the coefficient for determining plant available phosphorus from measured total phosphorus. In Wisconsin, the Penn State Method is utilized and is expressed in percent. While a total P may be significant, the WEP may show that only a small percentage of the P is available to plants because of factors such as treatment processes and chemical addition that “tie-up” phosphorus limiting the amount of phosphorus that is plant available. As part of the Wisconsin’s nutrient management plan (NMP) requirements, the accounting of all fertilizers must be included over the NMP cycle. The fertilizer value of the waste needs to be communicated to the farmer and accounted for in the NMP.

**Total Dioxin Equivalent:** The maximum concentration of 1.2 ng/kg TDE in the soil profile for agricultural sites is based on a human health risk assessment that was undertaken in 1992 by Jay Goldring, Ph.D., Toxicology of the Wisconsin Department of Health and Social Service’s Division of Health. In a May 4, 1994 update of the risk assessment, Dr. Goldring established the maximum concentration of 0.5 ng/kg of total dioxin equivalence in the soil profile for sites with grazing livestock. The definitions of agricultural and livestock grazing sites were based on language in these risk assessments. Monitoring for Dioxin, 2,3,7,8-TCDD TE will allow Cascades Tissue to track TDE concentrations to agricultural and livestock grazing sites so that the above limits are exceeded. Therefore, monitoring for Dioxin 2,3,7,8-TCDD TE is retained in the permit.

The addition to the definition of soil profile for sites where livestock will graze, 2 centimeters below the litter soil interface when sludge or sludge mixed with ash are not incorporated, was taken from “Exposure Analysis for Dioxins, Dibenzofurans, and CoPlanar Polychlorinated Biphenyls in Sewage Sludge: Technical Background Document”, October 17, 2003, Center for Environmental Analysis, RTI International.

The cumulative loading limit of 0.53 mg TDE per acre for silvicultural sites and the toxicity equivalency factors of 1 and 0.0013 for 2,3,7,8-TCDD and 2,3,7,8-TCDF are taken from a wildlife exposure case study performed by the Department and Nekoosa Paper Company in 1992 (“Establishing Safe Dioxin Criteria for Land Application of sludge (or Other Products): A Wildlife Exposure Case Study,” Wisconsin Department of Natural Resources, October 1992). The definition of silvicultural sites was based on language in these studies. Monitoring for 2,3,7,8-TCDD and 2,3,7,8-TCDF will allow Cascades Tissue to calculate and track TDE loadings to silvicultural sites. Therefore, monitoring for 2,3,7,8-TCDD and 2,3,7,8-TCDF is retained in the permit.

The department has the regulatory authority to impose limits on the land application of sludges that contain bioaccumulative organics in s. NR 214.18(4)(i), Wis. Adm. Code.

Pre-application prediction of TDE loading to land application sites is added. The permit requires Pixelle to assume that TDE from previous applications of sludge are still present in the soil profile unless soil from the application site has been tested for 2,3,7,8-TCDD and 2,3,7,8-TCDF. The pre-application predication allows for a more accurate estimate of post-application TDE concentrations in the soil profile and, therefore, helps prevent exceedances of cumulative TDE limits at land application sites.

When monitoring is required for the seventeen 2,3,7,8-substituted dioxins and furans, the results shall be calculated and converted to TCDD TEQ. The permittee should use the provided toxic equivalency factors (TEF) to express dioxins and furans in terms of the most toxic form of dioxin, 2,3,7,8 TCDD. The permittee shall report the TCDD TEQ as 2,3,7,8-TCDD TE for the results of the seventeen 2,3,7,8-substitued dioxin and furan congeners. This calculation and TEFs are based a system developed by the World Health Organization in 2005. The sludge concentration, recommended by the Wisconsin Division of Health (1989), shall not exceed 80 ng/kg TCDD TEQ. This calculation allows for a more thorough evaluation of the potential toxicity of the sludge. The calculated 2,3,7,8-TCDD TE monitoring is used for reporting the dioxin TEQ calculated from the results of the scan of the seventeen 2,3,7,8-substitued dioxin and furan congeners.

## 4 Schedules

### 4.1 Total Dioxin Equivalents Loadings Report

By February 28th of each year, the permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during the previous calendar year.

Required Action	Due Date
<b>First Annual Total Dioxin Equivalents Loading Report:</b> The permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during 2024	02/28/2025
<b>Second Annual Total Dioxin Equivalents Loading Report:</b> The permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during 2025	02/28/2026
<b>Third Annual Total Dioxin Equivalents Loading Report:</b> The permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during 2026	02/28/2027
<b>Fourth Annual Total Dioxin Equivalents Loading Report:</b> The permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during 2027	02/28/2028
<b>Fifth Annual Total Dioxin Equivalents Loading Report:</b> The permittee shall report the cumulative loading of total dioxin equivalents for each site that received ConsoGro2 during 2028	02/28/2029

## Explanation of Schedules

### 2,3,7,8-TCDD Total Dioxin Equivalents Cumulative Loading Limits

The cumulative loading limits for total dioxin equivalents are based on a human health risk assessment that was undertaken in 1992 by the Wisconsin Department of Health and Social Services and Wisconsin Department of Natural Resources.

Consistent with the current permit, the proposed permit requires the permittee to test sites for 2,3,7,8-TCDD and 2,3,7,8-TCDF prior to sludge application when calculated total dioxin equivalents will exceed 0.8 ng/kg in the soil profile after application of the sludge. The proposed requirement should ensure that accurate background information for dioxin and furan is available at application sites that are approaching the 1.2-ng/kg limit for total dioxin equivalents.

Also consistent with the current permit, the proposed permit reissuance requires the permittee to report cumulative loadings of total dioxin equivalents. While SWAMP verifies compliance with nitrogen and metals loading limits, it currently does not automatically verify compliance with total dioxin equivalents loading limits. Therefore, the proposed permit requires the permittee to report by **February 28<sup>th</sup>** of each year the cumulative loading of total dioxin equivalents for each site that has received Water Renewal Center sludge during the previous calendar year. The permittee should submit the cumulative loadings of total dioxin equivalents in a separate document from the sludge characteristic report (Form 3400-49) and the annual land application report (Form 3400-55).

## 4.2 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
<b>Report on Effluent Discharge:</b> Submit a report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations. This analysis should also include a comparison to the applicable narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code.  This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.	06/30/2025
<b>Report on Effluent Discharge and Evaluation of Need:</b> Submit a final report on effluent PFOS and PFOA concentrations and include an analysis of trends in monthly and annual average PFOS and PFOA concentrations of data collected over the last 24 months. The report shall also provide a comparison on the likelihood of the facility needing to develop a PFOS/PFOA minimization plan.	06/30/2026

This report shall include all additional PFOS and PFOA data that may be collected including any influent, intake, in-plant, collection system sampling, and blank sample results.

The permittee shall also submit a request to the department to evaluate the need for a PFOS/PFOA minimization plan.

If the department determines a PFOS/PFOA minimization plan is needed based on a reasonable potential evaluation, the permittee will be required to develop a minimization plan for department approval no later than 90 days after written notification was sent from the department. The department will modify or revoke and reissue the permit to include PFOS/PFOA minimization plan reporting requirements along with a schedule of compliance to meet WQBELs. Effluent monitoring of PFOS and PFOA shall continue as specified in the permit until the modified permit is issued.

If, however, the department determines there is no reasonable potential for the facility to discharge PFOS or PFOA above the narrative standard in s. NR 102.04(8)(d), Wis. Adm. Code, no further action is required and effluent monitoring of PFOS and PFOA shall continue as specified in the permit.

## **Explanation of Schedules**

### **PFOS/PFOA Minimization Plan Determination of Need**

As stated above, NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. S. NR 106.98, Wis. Adm. Code, specifies steps to generate data in order to determine the need for reducing PFOS and PFOA in the discharge. Data generated per the effluent monitoring requirements will be used to determine the need for developing a PFOS/PFOA minimization plan. As part of the schedule, the permittee is required to submit two annual Reports on Effluent Discharge.

If the Department determines that a minimization plan is needed, the permit will be modified or revoked/reissued to include additional requirements.

## **Special Reporting Requirements**

No special requirements.

## **Other Comments:**

No comments.

## **Attachments:**

Appendix A - Technology Based Effluent Limits [December 15, 2023]

Appendix B - Water Quality Based Effluent Limits [March 9, 2023]

**Expiration Date: June 30, 2029**

## **Justification Of Any Waivers From Permit Application Requirements**

No waivers were given from permit application monitoring and reporting requirements

**Prepared By: Laura Rodriguez Alvarez**

**Wastewater Engineer**

**Date: 04/10/2024**

## Appendix A

### Technology Based Effluent Limits for Effluent Limitations Guidelines (ELG)

#### Background:

Pixelle Androscoggin LLC Water Renewal Center is a secondary wastewater treatment facility which treats the process wastewater from the Stevens Point Mill and the leachate from the Water Renewal Center Landfill, located adjacent to the Water Renewal Center. Note that ELGs do not apply to the landfill leachate because the landfill only received sludge generated by Pixelle Androscoggin LLC Water Renewal Center, therefore the exemption in 40 CFR 445.1(e) applies. The Stevens Point Mill has two paper machines which produce coated and uncoated specialty papers. In the past, it also received wastewater from the Whiting Mill, but it has not been in operation since 2011. Production at the Whiting Mill will not resume, so only current production from the Stevens Point Mill will be taken into consideration.

The Water Renewal Center is subject to the effluent limitations and standards of performance for continuous dischargers of process wastes from the pulp and paper industry and subcategories thereof of ch. NR 284, Wis. Adm. Code. The Stevens Point Mill facility makes nonintegrated fine papers from purchased pulp using wood fiber and is therefore regulated by Subpart K 40 CFR 430. It is important to note that chlorophenolic-containing biocides are not used at this facility. Chapter NR 284, Wis. Adm. Code, is based on 40 CFR 430 and because no differences between state and federal rule were noted, all references in this analysis are to the state rule.

Stevens Point Mill has two machines, Paper machine number 34 (N34) began paper production in 1990 while paper machine number 35 (N35) started production in 1997. Both paper machines are subject to the new source performance standards (NSPS) of s. NR 284.12(3), Wis. Adm. Code because construction of the machine commenced after November 18, 1982.

The ELG standards are based on the following calculation:

$$\text{ELG Limit} = \text{Production} \times \text{ELG Standard}$$

$$\frac{\text{lb [pollutant]}}{\text{day}} = \frac{\text{Ton Production}}{\text{day}} \times \frac{\text{lb[pollutant]}}{\text{Ton Production}}$$

As specified by rule, production used to calculate limits is based on ss. NR 284.04 and NR 284.115, Wis. Adm. Code (see rule language below). Note that the rule allows production based on “present trends or committed growth”. In this case, the permittee has provided past production figures and a production increase estimate for the Stevens Point Mill of 3,500 tons per year. This means that by the end of the next permit term, production is expected to increase by 21,000 tons which is 58 lbs/day.

“The production basis for application of the limitations and standards set forth in this chapter shall be the annual production divided by the number of operating days in the year for each subcategory subject to the provisions of this chapter.”

“Paper or paperboard production shall be measured at the paper machine take-up reel in off-the-machine moisture content, except for the semi-chemical, unbleached kraft, unbleached kraft-neutral sulfite semi-chemical (cross recovery), and paperboard from wastepaper subcategories where paper and paperboard production shall be measured in air-dry-tons (10% moisture content). Market pulp shall be measured in air-dry-tons (10%

moisture). Production shall be determined based on past production practices, present trends or committed growth.”

Limit Calculations:

The daily maximum and monthly average limits for BOD<sub>5</sub>, TSS, and pH for each machine are shown in the tables below. It compares the limits from the current permit with the limits calculated using the highest production rates of the last 5 years (2018-2022) plus an additional 58 tons per day to account for the 21,000 tons production increase expected to occur over the next 6 years (5 years permit term + 1 drafting of permit). The limits for N34 are calculated using the 2022 production rate of 305 tons/day plus the 58 tons/day growth factor which results in 363 tons/day. The limits for N35 are calculated using the 2021 rates of 284 tons/day plus the 58 tons/day growth factor which results in 342 tons/day. Limits from all machines are summed for each pollutant to then provide a total permit limit at the end. In this reissuance, the facility did not request an increase in limits.

**N34:**

		Stevens Point Mill Paper Machine #34	
		NSPS	Permit Limit Using 2022 Production Rates for Nonintegrated Fine Papers Wood Fiber Furnish
Parameter	Limit Type	lbs per ton of product	lbs/day
BOD <sub>5</sub>	Daily Max	7	2541
	Monthly Avg	3.8	1379
TSS	Daily Max	8.8	3194
	Monthly Avg	4.6	1670
pH	within the range of 5.0 - 9.0 su		

*Table 1. Calculation of ELG Limits based on NSPS for Machine #34*

**N35:**

		Stevens Point Mill Paper Machine #35	
		NSPS	Permit Limit Using 2021 Production Rates for Nonintegrated Fine Papers Wood Fiber Furnish
Parameter	Limit Type	lbs per ton of product	lbs/day
BOD <sub>5</sub>	Daily Max	7	2394
	Monthly Avg	3.8	1300
TSS	Daily Max	8.8	3010
	Monthly Avg	4.6	1573



pH	within the range of 5.0 - 9.0 su
----	----------------------------------

*Table 2. Calculation of ELG Limits based on NSPS for Machine #35*

**Final limits Conclusion:**

A comparison of the current permit ELG limits and the calculated ELG limits for reissuance shows that the most stringent limits are those currently established in the permit. Although production increased, the limits will not be increased because the facility did not request or demonstrate a need for increased limits and such request would require an antidegradation review. Therefore, the more stringent limits of the current permit will carry over.

		Stevens Point Mill Paper Machine #34	Stevens Point Mill Paper Machine #35	Total Permit Limit for Nonintegrated Fine Papers Wood Fiber Furnish (N34 + N35)	Current Permit Limit
Parameter	Limit Type	lbs/day	lbs/day	lbs/day	lbs/day
BOD <sub>5</sub>	Daily Max	2541	2394	4935	<b>3958</b>
	Monthly Avg	1379	1300	2679	<b>2149</b>
TSS	Daily Max	3194	3010	6204	<b>4976</b>
	Monthly Avg	1670	1573	3243	<b>2601</b>
pH	<b>within the range of 5.0 - 9.0 su and subject to s. NR 205.06, Wis. Adm. Code</b>				

*Table 3. Total ELG Limits*

Prepared by:

Laura Rodriguez Alvarez, Wastewater Engineer

December 15, 2023

DATE: May 17, 2024

TO: Laura Rodriguez Alvarez – WY/3

FROM: Diane Figiel – WY/3 *Diane Figiel*

SUBJECT: Water Quality-Based Effluent Limitations for the Pixelle Androscoggin LLC – Water Renewal Center WPDES Permit No. WI-0003468-10-0

This is in response to your request for an evaluation of the need for water quality-based effluent limitations (WQBELs) using chapters NR 102, 104, 105, 106, 207, 210, 212, and 217 of the Wisconsin Administrative Code (where applicable), for the discharge from the Pixelle Androscoggin LLC – Water Renewal Center in Portage County. This industrial facility discharges to the Wisconsin River, located in the City of Steven’s Point Wisconsin River Watershed in the Upper Wisconsin River Basin. This discharge is included in the Wisconsin River TMDL as approved by EPA on April 26, 2019 with site-specific criteria approved by EPA on July 9, 2020. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis:

#### Outfall 003 – WRC Effluent

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD <sub>5</sub>	3,958 lbs/day			2,149 lbs/day		5
TSS	4,976 lbs/day			2,601 lbs/day		5
pH	9.0 s.u.	5.0 s.u.				2
Mercury						1
PFOA and PFOS						3
Phosphorus				40 lbs/day 0.93 mg/L	13 lbs/day	6
Temperature						1
Acute WET						4

#### Footnotes:

1. Monitoring only
2. This is a technology based effluent limit (TBEL) applicable to discharges with continuous pH monitoring. Conditions of the effluent limit are outlined in section 3.2.1.2 of the current permit. TBEL pH limits are consistent with s. NR 102.04(4)(c) and s. NR 102.05(3)(h).
3. Monthly monitoring is required in accordance with s. NR 106.98(2), Wis. Adm. Code.
4. Annual WET testing is recommended in the reissued permit. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).
5. The mass limits are categorical limits based on ch. NR 284, Wis. Adm. Code. These limits are not addressed in this memo and may need to be adjusted based on current production.

6. The phosphorus mass limit is based on the Total Maximum Daily Load (TMDL) for the Wisconsin River Basin to address phosphorus water quality impairments within the TMDL area. The TMDL was approved by EPA on April 26, 2019.

The recommended limits meet the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Codes, and additional limits are not required.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Diane Figiel at [Diane.Figiel@wisconsin.gov](mailto:Diane.Figiel@wisconsin.gov).

Attachments (2) – Narrative & Map

E-cc: Nick Lindstrom, Wastewater Engineer – WCR/Eau Claire  
Jason Knutson, Wastewater Section Chief – WY/3

**Water Quality-Based Effluent Limitations for  
Pixelle Androscoggin LLC – Water Renewal Center**

**WPDES Permit No. WI-0003468-10-0**

Prepared by: Rachel Fritz/ Diane Figiel

**PART 1 – BACKGROUND INFORMATION**

**Facility Description**

Pixelle Androscoggin LLC – Water Renewal Center (previously Verso Minnesota Wisconsin LLC) is a secondary wastewater treatment facility which treats the process wastewater from the Stevens Point Mill. The Steven’s Point Mill operates two paper machines, one off-machine hot-soft calender, two finishing winders and four cut down winders and produces coated specialty papers. The mill’s acid papermaking process is elemental chlorine-free.

The Stevens Point Mill transfers approximately 3.34 MGD of process wastewater, noncontact cooling water, and seal water to the Water Renewal Center. Noncontact cooling water and seal water were previously discharged via other outfalls but as of September 2021 they have been transferred to the Water Renewal Center combined with the process wastewater. This has increased the flow volume received by the Water Renewal Center. The Water Renewal Center treatment system includes pH neutralization, primary clarification, activated sludge secondary treatment and sludge dewatering. In addition to treating process wastewaters from the Stevens Point Mill, the Water Renewal Center treats leachate from the Water Renewal Center landfill, which is adjacent to the Water Renewal Center. The treated process wastewater is discharged to the Wisconsin River via Outfall 003 during normal operations.

Outfall 012 is landfill groundwater which intermittently discharges to a ditch to the Wisconsin River. Discharge from Outfall 012 occurred on 12 days from 2017 to 2022 and the average discharge volume was 4942 gpd.

This evaluation focuses on the discharge from Outfall 003. Attachment #2 is a map of the area showing the approximate location of the outfall.

The previous permit allowed Water Renewal Center and Stevens Point Mill to maintain Outfalls 009 and 010 for emergency discharges with a calculated combined discharge from outfalls 003, 009 and 010 designated as Outfall 011 in the permit. These outfalls have not been used since 2009 and will be removed from the permit at this issuance. Other previous outfalls include Outfalls 021 and 022 (noncontact cooling waters and vacuum pump seal) which have been retired. There are no intakes from the Wisconsin River remaining at either the Water Renewal Center or the Steven Point Mill. The city water used at the same outfall locations is now routed to discharge with the process wastewater.

**Existing Permit Limitations**

The current permit, which expired on 5/31/23, includes the following effluent limitations and monitoring requirements.

**Outfall 003 – WRC Effluent**

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD <sub>5</sub>						1
TSS						1
pH	9.0 s.u.	5.0 s.u.				2
Mercury						1
Phosphorus						1
Acute WET						1

**Outfall 011 – Combined Discharge of Outfalls 003, 009, and 010**

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Flow Rate						1
BOD <sub>5</sub>	3,958 lbs/day			2,149 lbs/day		3
TSS	4,976 lbs/day			2,601 lbs/day		3
Phosphorus						4
Interim				46 lbs/day 0.93 mg/L		
Final				0.300 mg/L	0.100 mg/L 3.8 lbs/day	

## Footnotes:

1. Monitoring only
2. This is a technology based effluent limit (TBEL) applicable to discharges with continuous pH monitoring. Conditions of the effluent limit are outlined in section 3.2.1.2 of the current permit. TBEL pH limits are consistent with s. NR 102.04(4)(c) and s. NR 102.05(3)(h).
3. These are categorical limitations which are not being evaluated as part of this review.
4. The permit includes a compliance schedule to meet the final limits by April 1, 2025.

**Receiving Water Information**

- Name: Wisconsin River
  - Waterbody Identification Code (WBIC): 1179900
  - Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply.
  - Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: The following 7-Q<sub>10</sub> and 7-Q<sub>2</sub> values are from USGS for the Wisconsin River at Steven's Point, where Outfall 003 is located.
    - 7-Q<sub>10</sub> = 1110 cfs (cubic feet per second)
    - 7-Q<sub>2</sub> = 1740 cfs
    - 90-Q<sub>10</sub> = 1479 cfs (estimated as 85% of 7-Q<sub>2</sub>)
    - Harmonic Mean Flow = 2697 cfs estimated using an average flow of 4110 cfs estimated by the Stream Natural Community Model.
- The Harmonic Mean has been estimated based on average flow and the 7-Q<sub>10</sub> using an equation from U.S. EPA's *Technical Support Document for Water Quality-Based Toxics Control* (March 1991, EPA/505/2-90-003, pgs. 88-89).

## Attachment #1

- Hardness = 40 mg/L as CaCO<sub>3</sub>. This value represents the geometric mean of WET testing data from 2013 to 2017.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Metals data from the Wisconsin River at Conover and receiving water mercury data collected by the facility from 2013 to 2022 (Sampling Point 602) is used for this evaluation. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: There are several other dischargers to the Wisconsin River however they are not in the immediate vicinity and the mixing zones do not overlap. The closest other discharge is the Village of Whiting which is about 1600 ft away from Outfall 003 with a design flow rate of only 0.67 MGD. The ratio of effluent discharged from Pixelle Androscoggin to the 7Q10 flow is about 170:1. Therefore, the other dischargers do not impact this evaluation.
- Impaired water status: The Wisconsin River is listed as impaired for PCBs and mercury.

### Effluent Information

- Flow rates:
  - Max annual average = 4.28 MGD (Million Gallons per Day)
  - Peak daily = 5.31 MGD
  - Peak weekly = 4.81 MGD
  - Peak monthly = 4.58 MGD

For reference, the actual average flow from January 2017 to December 2022 was 3.38 MGD. Since the noncontact cooling water and seal water have been routed with the process wastewater as of September 2021, the flow rates from Outfall 003 have increased significantly. The max annual average flow rate in 2021 was 2.96 MGD and in 2022 it was 4.28 MGD.

- Hardness = 223 mg/L as CaCO<sub>3</sub>. This value represents the geometric mean of permit application data and data from WET testing from 2013 to 2021.
- Acute dilution factor used in accordance with s. NR 106.06(3)(c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water source: The water renewal center uses water from the Village of Whiting. The process wastewater from the Steven’s Point Mill is sourced from the City of Steven’s Point. Intake of river water has been permanently discontinued.
- Additives: The facility uses four water quality conditioners in the treatment process. These are discussed in Part 7.
- Effluent characterization: This facility is categorized as an industrial discharger, so the permit application required effluent sample analyses for all the “priority pollutants” except for the Dioxins and Furans as specified in s. NR 200.065, Table 1, Wis. Adm. Code. The permit-required monitoring for mercury from January 2017 to December 2022 is used in this evaluation.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled “MEAN EFFL. CONC.”. Otherwise, substances with multiple effluent data are shown in the tables below or in their respective parts in this evaluation.

Attachment #1

Sample Date	Mercury ng/L	Sample Date	Mercury ng/L
02/03/2017	<0.20	02/11/2020	0.88
06/27/2017	<0.20	05/06/2020	<0.20
08/09/2017	<0.20	08/27/2020	1.80
11/30/2017	<0.40	11/16/2020	0.34
02/14/2018	<0.20	03/08/2021	0.46
05/23/2018	<0.20	05/12/2021	0.22
05/13/2019	<0.12	09/09/2021	<0.12
07/31/2019	<0.12	11/17/2021	<0.12
12/04/2019	0.16	02/16/2022	<0.12
		Average	0.21

“<” means that the pollutant was not detected at the indicated level of detection. The mean concentration was calculated using zero in place of the non-detected results.

The following table presents the average concentrations and loadings at Outfall 003 from January 2017 to December 2022 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

	Average Measurement*
BOD <sub>5</sub>	171 lbs/day
TSS	315 lbs/day
pH field	6.97 s.u.
Phosphorus	0.102 mg/L

\*Results below the level of detection (LOD) were included as zeroes in calculation of average.

**PART 2 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR TOXIC SUBSTANCES – EXCEPT AMMONIA NITROGEN**

Permit limits for toxic substances are required whenever any of the following occur:

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99<sup>th</sup> percentile (or P<sub>99</sub>) value exceeds the comparable calculated limit (s. NR 106.05(4), Wis. Adm. Code)
3. If fewer than 11 detected results are available, the mean effluent concentration exceeds 1/5 of the calculated limit (s. NR 106.05(6), Wis. Adm. Code)

**Acute Limits based on 1-Q<sub>10</sub>**

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for

other limits along with the 1-Q<sub>10</sub> receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

$$\text{Limitation} = \frac{(\text{WQC})(Q_s + (1-f)Q_e) - (Q_s - fQ_e)(C_s)}{Q_e}$$

Where:

WQC = Acute toxicity criterion or secondary acute value according to ch. NR 105, Wis. Adm. Code.

Q<sub>s</sub> = average minimum 1-day flow which occurs once in 10 years (1-day Q<sub>10</sub>)  
 if the 1-day Q<sub>10</sub> flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q<sub>10</sub>).

Q<sub>e</sub> = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

f = Fraction of the effluent flow that is withdrawn from the receiving water, and

C<sub>s</sub> = Background concentration of the substance (in units of mass per unit volume) as specified in s. NR 106.06(4)(e), Wis. Adm. Code.

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q<sub>10</sub> method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for Pixelle Androscoggin and the limits are set based on two times the acute toxicity criteria.

The following tables list the calculated WQBELs for this discharge along with the results of effluent sampling for all the detected substances. All concentrations are expressed in terms of micrograms per Liter (µg/L), except for hardness and chloride (mg/L) and mercury (ng/L).

**Daily Maximum Limits based on Acute Toxicity Criteria (ATC)**

RECEIVING WATER FLOW = 888 cfs, (1-Q<sub>10</sub> (estimated as 80% of 7-Q<sub>10</sub>)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic		340	679.6	135.9	<0.85
Cadmium	223	25.9	51.7	10.3	<0.19
Chromium	223	3476	6952.4	1390	<1.1
Chromium (+6)		16.0	32.0	6.41	0.96
Copper	223	33.1	65.6	13.1	<1.9
Lead	223	232	463.6	92.7	<4.3
Nickel	223	924	1848.8	370	<1.2
Zinc	223	243	484.1	96.8	<5.7
Chloride (mg/L)		757	1514.0	303	45

\*\* The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q<sub>10</sub> flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.



**Weekly Average Limits based on Chronic Toxicity Criteria (CTC)**

RECEIVING WATER FLOW = 278 cfs (¼ of the 7-Q<sub>10</sub>), as specified in s. NR 106.06(4)(c), Wis. Adm. Code

SUBSTANCE	REF. HARD. mg/L	CTC	MEAN BACK-GRD.	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic		152.2		6531	1306.3	<0.85
Cadmium	40	1.20	0.01	51.24	10.2	<0.19
Chromium	40	62.36	0.27	2665	533.0	<1.1
Chromium (+6)		10.98		471.2	94.24	0.96
Copper	40	4.72	0.27	191.3	38.26	<1.9
Lead	40	11.55	0.17	488.6	97.7	<4.3
Nickel	40	24.04		1032	206.3	<1.2
Zinc	40	54	0.60	2292	458.4	<5.7
Chloride (mg/L)		395		16951	3390.2	45

**Monthly Average Limits based on Wildlife Criteria (WC)**

RECEIVING WATER FLOW = 370 cfs (¼ of the 90-Q<sub>10</sub>), as specified in s. NR 106.06(4), Wis. Adm. Code

SUBSTANCE	WC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Mercury (ng/L)	1.30	3.20	1.3	0.26	0.21

**Monthly Average Limits based on Human Threshold Criteria (HTC)**

RECEIVING WATER FLOW = 641 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Cadmium	370	0.01	36179	7235.8	<0.19
Chromium (+3)	3818000	0.27	373333629	74666726	<1.1
Chromium (+6)	7636		746667	149333	0.96
Lead	140	0.17	13673	2734.7	<4.3
Nickel	43000		4204648	840930	<1.2

**Monthly Average Limits based on Human Cancer Criteria (HCC)**

RECEIVING WATER FLOW = 641 cfs (¼ of Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK-GRD.	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	13.3		1300.5	260.10	<0.85

In addition to evaluating the need for limits for each individual substance for which HCC exist, s. NR 106.06(8), Wis. Adm. Code, requires the evaluation of the cumulative cancer risk. Because no effluent limits are needed based on HCC, determination of the cumulative cancer risk is not needed per s. NR 106.06(8), Wis. Adm. Code.

**Conclusions and Recommendations**

Based on a comparison of the effluent data and calculated effluent limitations, effluent limitations are required for toxic substances. **Mercury monitoring should continue in the reissued permit, ideally to ensure that at least 11 detect results are available at permit reissuance. Chlorine monitoring should be required with the next permit application.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Based on the primary industry category of discharge, **PFOS and PFOA monitoring is recommended at a monthly frequency.**

**PART 3 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR AMMONIA NITROGEN**

The State of Wisconsin promulgated revised water quality standards for ammonia nitrogen in ch. NR 105, Wis. Adm. Code, effective March 1, 2004 which includes criteria based on both acute and chronic toxicity to aquatic life. Given the fact that the Pixelle Androscoggin does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

Four samples for ammonia nitrogen were submitted with the permit application, and their results were as follows:

**Ammonia Nitrogen Effluent Data**

Sample Date	Ammonia Nitrogen mg/L
10/31/2022	0.85
11/04/2022	0.12
11/08/2022	0.87
11/12/2022	0.28
Average	0.53

Considering the available dilution (Qs:Qe of about 170:1), these values are well below the lowest limits that would be calculated. Therefore, no ammonia limits or additional monitoring are recommended in the reissued permit.

**PART 4 – PHOSPHORUS**

**Technology-Based Effluent Limit**

Subchapter II of Chapter NR 217, Wis. Adm. Code, requires industrial facilities that discharge greater than 60 pounds of Total Phosphorus per month to comply with a 12-month rolling average limit of 1.0 mg/L, or an approved alternative concentration limit.

Because Pixelle Androscoggin currently has a limit of 0.93 mg/L as a monthly average, this limit should be included in the reissued permit. This limit remains applicable unless a more stringent concentration limit is given.

**Water Quality-Based Effluent Limits (WQBEL) - Wisconsin River TMDL**

Total phosphorus (TP) effluent limits in lbs/day are calculated as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* (May 2020). The wasteload allocations (WLA) that implement site-specific criteria for Lakes Petenwell, Castle Rock, and Wisconsin are found in Appendix K of the *Total Maximum Daily Loads for Total Phosphorus in the Wisconsin River Basin (WRB TMDL)* report dated April 26, 2019 and are expressed as maximum annual loads (lbs/year) and maximum daily loads (lbs/day). The WLA that implement statewide criteria found in Appendix J of the TMDL report are no longer applicable following approval of these site-specific criteria. The daily WLAs in the WRB TMDL equals the annual WLA divided by the number of days in the year. Therefore, the daily WLA is an annual average. Since the derivation of daily WLAs from annual WLAs does not take effluent variability or monitoring frequency into consideration, maximum daily WLAs from the WRB TMDL should not be used directly as permit effluent limits.

For the reasons explained in the April 30, 2012 paper entitled *Justification for Use of Monthly, Growing Season and Annual Average Periods for Expression of WPDES Permit Limits for Phosphorus Discharges in Wisconsin*, WDNR has determined that the phosphorus WQBELs set equal to WLAs would not be consistent with the assumptions and requirements of the TMDL.

Therefore, limits given to continuously discharging facilities covered by the WRB TMDL are given monthly average mass limits. If the equivalent effluent concentration is less than or equal to 0.3 mg/L, six-month average mass limits are also included. The following equation shows the calculation of equivalent effluent concentration:

$$\begin{aligned} \text{TP Equivalent Effluent Concentration} &= \text{Daily WLA} \div (\text{Flow Rate} * \text{Conversion Factor}) \\ &= 8.76 \text{ lbs/day} \div (4.28 \text{ MGD} * 8.34) \\ &= 0.246 \text{ mg/L} \end{aligned}$$

Since this value is less than 0.3 mg/L, both a six-month average mass limit and a monthly average mass limit are applicable for total phosphorus. The monthly average limit is set equal to three times the six-month average limit.

$$\begin{aligned} \text{TP Six-Month Average Permit Limit} &= \text{Daily WLA} * \text{Six-Month Average Multiplier} \\ &= 8.76 \text{ lbs/day} * 1.54 \\ &= 13 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{TP Monthly Average Permit Limit} &= \text{TP Six-Month Average Permit Limit} * 3 \\ &= 13 \text{ lbs/day} * 3 \\ &= 40 \text{ lbs/day} \end{aligned}$$

The multiplier used in the six-month average calculation was used as recommended in TMDL implementation guidance. A coefficient of variation (CV) was calculated, based on phosphorus mass monitoring data, to be 0.99. This is the standard deviation divided by the mean of mass data. The facility is able to meet the permit limits based on the WLA so the current CV is used. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies phosphorus monitoring as monthly; if a monitoring more frequently than weekly is required in the permit, the stated limits should be reevaluated. The current permit specifies phosphorus monitoring as monthly, but the EPA recommends that permit limits be derived using a frequency of at least weekly.

The WRB TMDL establishes TP wasteload allocations to reduce the loading in the entire watershed including WLAs to meet water quality standards, for tributaries to the Wisconsin River. Therefore, WLA-based WQBELs are protective of immediate receiving waters and TP WQBELs derived according to s. NR 217.13, Wis. Adm. Code are not required.

Since wasteload allocations are expressed as annual loads (lbs/yr), permits with TMDL-derived monthly average permit limits should require the permittee to calculate and report rolling 12-month sums of total monthly loads for TP. Rolling 12-month sums can be compared directly to the annual wasteload allocation. Six-month average limits apply in the periods May – October and November – April.

**Effluent Data**

The following table lists the statistics for effluent phosphorus levels from January 2017 to December 2022 for informational purposes. In the cases where reporting the mass discharge is not required in the current permit, the mass is calculated using the reported phosphorus concentration and the effluent flow rate for that day. There would have been zero exceedances of the calculated limits from 2017 to 2022.

**The effluent data indicates that the calculated TMDL limits are readily attainable, and no compliance schedule is necessary.**

Total Phosphorus Statistics		
	Concentration mg/L	Mass Discharge lbs/day
1-day P <sub>99</sub>	0.46	14
4-day P <sub>99</sub>	0.26	7.8
30-day P <sub>99</sub>	0.15	4.3
Mean	0.10	2.9
Std	0.094	2.9
Sample Size	74	74
Range	<0.022 - 0.63	0 - 19

**Conclusions:**

In summary, the following limits are recommended by this evaluation. The currently effective concentration limit should be maintained in the reissued permit to prevent backsliding.

- Monthly average Total Phosphorus mass limit of 40 lbs/day
- Six-month average Total Phosphorus mass limit of 13 lbs/day
- Monthly average Total Phosphorus concentration limit of 0.93 mg/L

The previously calculated WQBELs have not become effective in the permit yet so no antidegradation or antibacksliding demonstration is required to drop the previously calculated limits.

**PART 5 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL**

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106

Attachment #1

(Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

Due to the amount of upstream flow available for dilution in the limit calculation ( $Q_s:Q_e > 20:1$ ), the lowest calculated limitation is 120° F (s. NR 106.55(6)(a), Wis. Adm. Code).

No temperature data for the whole discharge from Outfall 003 is available. Temperature data was collected at Outfalls 021 and 022 which discharged seal water and noncontact cooling water. These outfalls have been closed off and the discharge has been rerouted to Outfall 003. These discharges are expected to contribute the majority of the heat load at Outfall 003. The table below summarizes the maximum temperatures reported during monitoring from January 2017 to December 2022.

**Monthly Temperature Effluent Data & Limits**

Month	Outfall 021 Representative Highest Monthly Effluent Temperature		Outfall 022 Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum	Daily Maximum	Weekly Maximum	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)	(°F)	(°F)	(°F)
JAN	67	83	73	77	NA	120
FEB	66	72	74	92	NA	120
MAR	73	78	77	83	NA	120
APR	81	93	90	94	NA	120
MAY	95	102	99	107	NA	120
JUN	101	105	109	112	NA	120
JUL	106	109	110	115	NA	120
AUG	104	105	109	111	NA	120
SEP	104	109	109	111	NA	120
OCT	89	94	92	99	NA	120
NOV	81	84	80	83	NA	120
DEC	67	72	72	75	NA	120

**Reasonable Potential**

Permit limits for temperature are recommended based on the procedures in s. NR 106.56, Wis. Adm. Code.

- An acute limit for temperature is recommended for each month in which the representative daily maximum effluent temperature for that month exceeds the acute WQBEL. The representative daily maximum effluent temperature is the greater of the following:
  - (a) The highest recorded representative daily maximum effluent temperature
  - (b) The projected 99th percentile of all representative daily maximum effluent temperatures
- A sub-lethal limitation for temperature is recommended for each month in which the representative weekly average effluent temperature for that month exceeds the weekly average WQBEL. The representative weekly average effluent temperature is the greater of the following:

Attachment #1

- (a) The highest weekly average effluent temperature for the month.
- (b) The projected 99th percentile of all representative weekly average effluent temperatures for the month

At temperatures above approximately 103° F, conventional biological treatment systems do not function properly and experience upsets. There is no indication that this has ever occurred in this treatment system. Considering this and the available temperature data at Outfalls 021 and 022, **there is no reasonable potential for the discharge to exceed this limit.** However, Pixelle Androscoggin is a primary industry from a category with potential discharge significant heat loads. **Temperature monitoring for Outfall 003 is recommended in the reissued permit.**

### PART 6 – WHOLE EFFLUENT TOXICITY (WET)

WET testing is used to measure, predict, and control the discharge of toxic materials that may be harmful to aquatic life. In WET tests, organisms are exposed to a series of effluent concentrations for a given time and effects are recorded. Decisions below related to the selection of representative data and the need for WET limits were made according to ss. NR 106.08 and 106.09, Wis. Adm. Code. WET monitoring frequency and toxicity reduction evaluation (TRE) recommendations were made using the best professional judgment of staff familiar with the discharge after consideration of the guidance in the *Whole Effluent Toxicity (WET) Program Guidance Document (2022)*.

- Acute tests predict the concentration that causes lethality of aquatic organisms during a 48 to 96-hour exposure. To assure that a discharge is not acutely toxic to organisms in the receiving water, WET tests must produce a statistically valid LC<sub>50</sub> (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm Code.
- Chronic testing is usually not recommended where the ratio of the 7-Q<sub>10</sub> to the effluent flow exceeds 100:1. For the Pixelle Androscoggin, that ratio is approximately 168:1. With this amount of dilution, there is believed to be little potential for chronic toxicity effects in the Wisconsin River associated with the discharge from the Pixelle Androscoggin, so the need for chronic WET testing will not be considered further.
- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), a synthetic (standard) laboratory water may be used as the dilution water and primary control in acute WET tests, unless the use of different dilution water is approved by the Department prior to use. The primary control water must be specified in the WPDES permit.
- Shown below is a tabulation of all available WET data for Outfall 003. Efforts are made to ensure that decisions about WET monitoring and limits are made based on representative data, as specified in s. NR 106.08(3), Wis. Adm Code. Data which is not believed to be representative of the discharge was not included in reasonable potential calculations. The table below differentiates between tests used and not used when making WET determinations. Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005. Data collected before July 1, 2005 is excluded from this evaluation.

**WET Data History**

Date Test Initiated	Acute Results LC <sub>50</sub> %				Chronic Results IC <sub>25</sub> %				Footnotes or Comments
	<i>C. dubia</i>	Fathead minnow	Pass or Fail?	Used in RP?	<i>C. dubia</i>	Fathead Minnow	Pass or Fail?	Use in RP?	
08/01/2006	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
11/01/2007	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
01/24/2008	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
05/14/2009	>100	>100	Pass	No	>100	>100	Pass	No	1
05/15/2012	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
08/20/2013	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
10/07/2014	>100	>100	Pass	Yes	12.1	>100	Pass	Yes	
05/12/2015	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
03/22/2016	>100	>100	Pass	Yes	9.5	>100	Pass	Yes	
05/23/2017	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
08/01/2018	>100	>100	Pass	Yes					
11/20/2019	>100	>100	Pass	Yes					
05/06/2020	>100	>100	Pass	Yes					
01/06/2021	>100	>100	Pass	Yes					
06/26/2022	>100	>100	Pass	Yes					

Footnotes:

1. *Tests done by S-F Analytical, July 2008 – March 2011.* The DNR has reason to believe that WET tests completed by SF Analytical Labs from July 2008 through March 31, 2011 were not performed using proper test methods. Therefore, WET data from this lab during this period has been disqualified and was not included in the analysis.
- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. **WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.**

$$\text{Acute Reasonable Potential} = [(TU_a \text{ effluent}) (B)(AMZ)]$$

$$\text{Chronic Reasonable Potential} = [(TU_c \text{ effluent}) (B)(IWC)]$$

According to s. NR 106.08(6)(d), Wis. Adm. Code, TU<sub>a</sub> and TU<sub>c</sub> effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC<sub>50</sub>, IC<sub>25</sub> or IC<sub>50</sub> ≥ 100%).

Acute Reasonable Potential = 0 < 1.0, reasonable potential is not shown, and a limit is not required.

$$\text{Chronic Reasonable Potential} = [(TU_c \text{ effluent}) (B)(IWC)]$$

**Chronic WET Limit Parameters**

<b>TUc (maximum)</b> 100/IC <sub>25</sub>	<b>B</b> (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	<b>IWC</b>
100/9.5 = 10.5 TU <sub>c</sub>	3.8 Based on 2 detects	2%

$$[(TUc \text{ effluent}) (B)(IWC)] = 0.80 < 1.0$$

Therefore, no reasonable potential is shown for acute or chronic WET] limits using the procedures in s. NR 106.08(6) and representative data from 2006 to 2022.

The WET checklist was developed to help DNR staff make recommendations regarding WET limits, monitoring, and other related permit conditions. The checklist indicates whether acute and chronic WET limits are needed, based on requirements specified in s. NR 106.08, Wis. Adm. Code. The checklist steps the user through a series of questions, assesses points based on the potential for effluent toxicity, and suggests monitoring frequencies based on points accumulated during the checklist analysis. As toxicity potential increases, more points accumulate, and more monitoring is recommended to ensure that toxicity is not occurring. A summary of the WET checklist analysis completed for this permittee is shown in the table below. Staff recommendations based on best professional judgment are provided below the summary table. For guidance related to reasonable potential and the WET checklist, see Chapter 1.3 of the WET Guidance Document: <https://dnr.wisconsin.gov/topic/Wastewater/WET.html>.

**WET Checklist Summary**

	<b>Acute</b>
<b>AMZ/IWC</b>	Not Applicable. <b>0 Points</b>
<b>Historical Data</b>	Zero detect tests used to calculate RP. <b>0 Points</b>
<b>Effluent Variability</b>	Little variability, no violations or upsets, consistent WWTF operations. <b>0 Points</b>
<b>Receiving Water Classification</b>	WWSF <b>5 Points</b>
<b>Chemical-Specific Data</b>	Reasonable potential for limits for zero substances based on ATC; Cr <sup>6+</sup> , chloride, and ammonia detected. Additional Compounds of Concern: Chloroform, Dichlorobromomethane, and Methylene Chloride detected <b>5 Points</b>
<b>Additives</b>	Zero Biocides and 5 Water Quality Conditioners added. No phosphorus removal chemicals <b>5 Points</b>
<b>Discharge Category</b>	Pulp and Paper <b>15 Points</b>
<b>Wastewater Treatment</b>	Secondary Treatment <b>0 Points</b>
<b>Downstream Impacts</b>	No impacts known <b>0 Points</b>



Attachment #1

Acute	
<b>Total Checklist Points:</b>	<b>30 Points</b>
<b>Recommended Monitoring Frequency (from Checklist):</b>	3 tests during permit term
<b>Limit Required?</b>	No
<b>TRE Recommended? (from Checklist)</b>	No

After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above, the checklist point totals would correspond to three acute WET tests. However, a minimum of annual acute monitoring is recommended because Pixelle Androscoggin treats process wastewater from a primary industry. **Therefore, annual acute WET testing is recommended in the reissued permit.** Tests should be done in rotating quarters to collect seasonal information about this discharge. WET testing should continue after the permit expiration date (until the permit is reissued).

### PART 7 – ADDITIVE REVIEW

Unlike the metals and toxic substances evaluated in Part 2, most additives have not undergone the amount of toxicity testing needed to calculate water quality criteria. Instead, in cases where the minimum data requirements necessary to calculate a WQC are not met, a secondary value can be used to regulate the substance, according to s. NR 105.05, Wis. Adm. Code. Whenever an additive is discharged directly into a surface water without receiving treatment or an additive is used in the treatment process and is not expected to be removed before discharge, a review of the additive is needed. Secondary values should be derived according to s. NR 105.05, Wis. Adm. Code. Guidance related to conducting an additive review can be found in *Water Quality Review Procedures for Additives* (2019) (<http://dnr.wi.gov/topic/wastewater/Guidance.html>).

Due to the amount of dilution available, all limits based on the secondary acute value would be more stringent than those based on the secondary chronic value. Therefore, only the secondary acute value is shown in the table below.

#### Additive Parameters

Additive Name	Manufacturer	Purpose of Additive including where added	Intermittent or Continuous Feed	Max Usage Rate lbs/day	Max Estimated Discharge Concentration mg/L	Secondary Acute Value mg/L
Phosphoric Acid (NuPhos 36% LA)	Hydrite	Nutrient addition	Intermittent			-
FennoTech 1725	Kemira	Defoamer	Intermittent	7.1	0.20	108
Nalco 60103	Nalco	Defoamer	Intermittent	7.1	0.20	385
Nalco 7507 Plus	Nalco	Defoamer	Intermittent	7.1	0.20	125
Nalco 9913	Nalco	Polymer	Continuous		0	-
Nalco 8105	Nalco	Coagulant	Intermittent		0	-

1. Calculated based on toxicity data provided
2. Evaluation are not necessary for additives that have active ingredients consisting only of chlorine, caustic soda (sodium hydroxide), hypochlorite, sulfuric acid, hydrochloric acid

Attachment #1

Phosphoric acid is added as needed (about once per year) for nutrient addition to the aeration basin. Any overdosing of this product would be regulated by phosphorus limits and pH limits. Nalco 9913 and Nalco 8105 are polymers and coagulants that are removed with the solids during treatment and not expected to be present in the discharge. No secondary value calculation is necessary for these products.

Nalco 60103, FennoTech 1725, and Nalco 7507 Plus are defoamers used at the facility on an as needed basis. The maximum possible effluent concentrations of each product in the discharge from Outfall 003 are much lower than the calculated limits for protection of aquatic life. Therefore, these additives are approved at the listed usage rates.

Attachment #2

