Permit Fact Sheet

General Information

Permit Number	WI-0020681-10-0
Permittee Name and Address	VILLAGE OF OREGON 117 Spring St, Oregon, WI 53575
Permitted Facility Name and Address	Oregon Wastewater Treatment Facility 101 NORTH PERRY PARKWAY, OREGON, WISCONSIN
Permit Term	April 01, 2026 to March 31, 2031
Discharge Location	North Bank of Oregon Branch of Badfish Creek, 1/4 mile upstream of the Hwy 14 culvert
Receiving Water	Oregon Branch (Badfish Creek Watershed, LR07 - Lower Rock River Basin) in Dane County
Stream Flow ($Q_{7,10}$)	0 cfs
Stream Classification	Limited Aquatic Life (LAL); from the Oregon outfall downstream to juncture with the Madison Met effluent ditch
Discharge Type	Existing; Continuous
Annual Average Design Flow	2.084 MGD
Industrial or Commercial Contributors	All Color
Plant Classification	A1 - Suspended Growth Processes; B - Solids Separation; C - Biological Solids/Sludges; P - Total Phosphorus; L - Laboratory; SS - Sanitary Sewage Collection System
Approved Pretreatment Program?	N/A

Facility Description

Oregon Wastewater Treatment Facility consists of an activated sludge treatment system with grit removal and automated fine screens as preliminary treatment. The activated sludge process is designed to remove phosphorus biologically as well as BOD and suspended solids. Wastewater passes through four final clarifiers for final settling. Chemical phosphorus treatment with alum is available primarily to treat side streams from sludge processing. A facility plan was approved in 2024 including various treatment plant upgrades including construction of a UV disinfection channel to meet disinfection requirements. New flow ratings were also approved. Sludge is aerobically digested, thickened with a gravity belt thickener and stored in a sludge storage tank. Biosolids are ultimately landspread on DNR approved agricultural fields.

Substantial Compliance Determination

Enforcement During Last Permit: A Notice of Noncompliance (NON) was sent 7/21/25 for a Sanitary Sewer Overflow (SSO). The facility has completed all previously required actions as part of the enforcement process.

After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on **07/09/2024**, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Ashley Brechlin, Wastewater Engineer, on July 31, 2024.

Sample Point Descriptions

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**
701	1.27 MGD (Avg. May 2020-July 2025)	Influent: 24-Hr flow proportional composite samples collected prior to screening and grit removal.
107	N/A – flow monitoring not required	In-Plant: Mercury field blank collected using standard sample handling procedures.
001	1.27 MGD (Avg. May 2020-July 2025)	Effluent: 24-Hr Flow Proportional composite samples collected prior to step aerator and grab samples collected after step aerator prior to discharge to the Oregon Branch. A Parshall flume with ultrasonic meter is used to measure flow after the UV disinfection tank.
004	Estimated 163 dry US tons/year	Sludge: Aerobically digested, thickened liquid, Class B. Representative sludge samples shall be collected after the gravity belt thickener.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Quarterly	24-Hr Flow Prop Comp	See the Mercury Monitoring permit section.

1.1.1 Changes from Previous Permit

Influent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

- The sample frequency for flow has been changed from “continuous” to “daily” for eDMR reporting purposes.

1.1.2 Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD_5 and total suspended solids is required by s. NR 210.04(2), Wis. Adm. Code, to assess wastewater strengths and volumes and to demonstrate the percent removal requirements in s. NR 210.05, Wis. Adm. Code, and in the Standard Requirements section of the permit. Mercury monitoring is included as a condition of the mercury variance.

2 In-plant - Monitoring and Limitations

2.1 Sample Point Number: 107- GEN PLANT (Hg blank)

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury, Total Recoverable		ng/L	Quarterly	Blank	See the Mercury Monitoring permit section.

2.1.1 Changes from Previous Permit

In-plant limitations and monitoring requirements were evaluated for this permit term and no changes were required.

2.1.2 Explanation of Limits and Monitoring Requirements

Mercury Field Blank – Monitoring is included in the permit pursuant to s. NR 106.145, Wis. Adm. Code. Field blanks must meet the requirements under s. NR 106.145(9) and (10), Wis. Adm. Code. The permittee shall collect a mercury field blank for each set of mercury samples (a set of samples may include a combination of influent, effluent or other samples all collected on the same day). Field blanks are required to verify a sample has not been contaminated during collection, transportation or analysis.

3 Surface Water - Monitoring and Limitations

3.1 Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	Monitoring begins April 1, 2027. See the Install Continuous Flow Recording Device Schedule.
BOD5, Total	Weekly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	20 mg/L	3/Week	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Suspended Solids, Total	Weekly Avg	30 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	20 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	348 lbs/day	3/Week	Calculated	Limit effective in January.
Suspended Solids, Total	Weekly Avg	430 lbs/day	3/Week	Calculated	Limit effective in February.
Suspended Solids, Total	Weekly Avg	414 lbs/day	3/Week	Calculated	Limit effective in March, May and July.
Suspended Solids, Total	Weekly Avg	428 lbs/day	3/Week	Calculated	Limit effective in April, June and November.
Suspended Solids, Total	Weekly Avg	359 lbs/day	3/Week	Calculated	Limit effective in August.
Suspended Solids, Total	Weekly Avg	234 lbs/day	3/Week	Calculated	Limit effective in September.
Suspended Solids, Total	Weekly Avg	365 lbs/day	3/Week	Calculated	Limit effective in October.
Suspended Solids, Total	Weekly Avg	364 lbs/day	3/Week	Calculated	Limit effective in December.
Suspended Solids, Total	Monthly Avg	247 lbs/day	3/Week	Calculated	Limit effective in January.
Suspended Solids, Total	Monthly Avg	305 lbs/day	3/Week	Calculated	Limit effective in February.
Suspended Solids, Total	Monthly Avg	294 lbs/day	3/Week	Calculated	Limit effective in March, May and July.
Suspended Solids, Total	Monthly Avg	303 lbs/day	3/Week	Calculated	Limit effective in April, June and November.
Suspended Solids, Total	Monthly Avg	255 lbs/day	3/Week	Calculated	Limit effective in August.
Suspended Solids, Total	Monthly Avg	166 lbs/day	3/Week	Calculated	Limit effective in September.
Suspended Solids, Total	Monthly Avg	259 lbs/day	3/Week	Calculated	Limit effective in October.
Suspended Solids, Total	Monthly Avg	258 lbs/day	3/Week	Calculated	Limit effective in December.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
pH Field	Daily Max	9.0 su	3/Week	Grab	
pH Field	Daily Min	6.0 su	3/Week	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	3/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	10 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective October through May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.2 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective in April and May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.3 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective June through September.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective October through March.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.5 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective in April and May.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.6 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective June through September.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	10 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective October through March.
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Monitoring and limit effective March through November annually beginning April 1, 2027. See the Disinfection and Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Monitoring and limit effective March through November annually beginning April 1, 2027. See the Disinfection and Effluent Limitations for E. coli Schedule. See also the E. coli Percent Limit permit section. Enter the result in the eDMR on the last day of the month.
Chloride		mg/L	Monthly	24-Hr Flow Prop Comp	Monitoring only January through December 2029.
Mercury, Total Recoverable		ng/L	Quarterly	Grab	Monitoring only until the final limits become effective. See the Mercury

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					Monitoring permit section and the Mercury Effluent Limits Schedule.
PFOS		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need Schedule.
PFOA		ng/L	1/ 2 Months	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need Schedule.
Phosphorus, Total	Monthly Avg	1.0 mg/L	3/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	6-Month Avg	0.6 mg/L	3/Week	24-Hr Flow Prop Comp	This is an Adaptive Management interim limit effective upon permit issuance until April 30, 2026.
Phosphorus, Total	6-Month Avg	0.5 mg/L	3/Week	24-Hr Flow Prop Comp	This is an Adaptive Management interim limit that goes into effect May 1, 2026. See the Schedules section and effluent requirements in the permit.
Phosphorus, Total		lbs/day	3/Week	Calculated	Calculate the daily mass discharge of phosphorus in lbs/day on the same days phosphorus sampling occurs. Mass (lbs/day) = Concentration (mg/L) x Flow (MGD) x 8.34
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity (WET) Testing section.
Chronic WET	Monthly Avg	1.0 TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See the Whole Effluent Toxicity (WET) Testing section.

3.1.1 Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

- **Flow** – Addition of flow monitoring to become effective April 1, 2027, per the Install Continuous Flow Recording Device Schedule.
- **Ammonia Nitrogen** – Updated monthly average limits.
- **Disinfection & E. coli –** Addition of Escherichia coli (E. coli) monitoring and limits effective March 1-November 30 annually beginning April 1, 2027, per the Disinfection and Effluent Limitations for E. coli Schedule.
- **Mercury –** Addition of effluent limits to become effective per the Mercury Effluent Limits Schedule. Monitoring only until the limits become effective at the end of the schedule.
- **PFOS/PFOA** – Addition of monitoring at a frequency of every other month in accordance with s. NR 106.98(2), Wis. Adm. Code.
- **Phosphorus** – Updated adaptive management interim limit from 0.6 mg/L to 0.5 mg/L (as a 6-month average) to become effective May 1, 2026.
- **Chronic WET** – Updated monthly average limit.
- **Temperature** – Removed monitoring requirements.

3.1.2 Explanation of Limits and Monitoring Requirements

Detailed discussions of limits and monitoring requirements can be found in the attached water quality-based effluent limits (WQBEL) memo dated September 17, 2025.

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 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.

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 weekly average and monthly average limits whenever practicable. Minor changes have been made to the limits for mercury.

Disinfection & E. coli – Revisions to bacteria surface water quality criteria to protect recreational uses and accompanying E. coli WPDES permit implementation procedures became effective May 1, 2020. Section NR 102.04(5)(a), Wis. Adm. Code, states that all surface waters shall be suitable for recreational use and meet the E. coli criteria established to protect

this use. Section NR 102.04(5)(b), Wis. Adm. Code, states that exceptions to the disinfection requirement can be made if the Department determines, in accordance with the procedures specified in s. NR 210.06(3), Wis. Adm. Code, that disinfection is not required to meet water quality criteria. As part of the reissuance process, the requirements for disinfection were reviewed under s. NR 210.06(3), Wis. Adm. Code. It was determined that the permittee is required to disinfect during the months of March-November. See the WQBEL memo for further explanation.

Mercury – Requirements for mercury are included in s. NR 106.145, Wis. Adm. Code. (See http://dnr.wi.gov/topic/Mercury/). Mercury effluent limits are required based on mercury data collected during the previous permit term (May 2020-July 2025). A schedule for complying with mercury effluent limits is included in the proposed permit. Limits become effective at the end of the schedule. However, the permittee is required to request a re-evaluation of the need for mercury limits per the schedule. If the Department determines there is no reasonable potential to exceed the calculated mercury limits, permit modification would be required to remove the mercury effluent limits and remaining schedule actions.

PFOS and PFOA – NR 106 Subchapter VIII - Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the Department evaluated the need for PFOS and PFOA monitoring taking into consideration the presence of potential PFOS or PFOA industrial wastes, remediation sites and other potential sources of PFOS or PFOA. Every other month monitoring is included in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code.

Phosphorus – New administrative rules for phosphorus discharges took effect December 1, 2010. Details regarding the administrative rules for phosphorus discharges may be found at: https://dnr.wisconsin.gov/topic/Wastewater/Phosphorus. Phosphorus rules are contained in s. NR 102.06 and ch. NR 217, Subchapter III, Wis. Adm. Code. A monthly average interim limit of 1 mg/L is effective upon reissuance and remains in effect for the duration of the reissued permit term. An Adaptive Management interim limit of 0.5 mg/L expressed as a 6-month average (averaging period of May through October and November through April) becomes effective May 1, 2026. Compliance with the 6-month average interim limit is evaluated at the end of each six-month period on April 30th and October 31st annually.

Adaptive Management for Total Phosphorus Compliance – The permittee requested and the Department approved a plan to implement a watershed adaptive management approach under s. NR 217.18, Wis. Adm. Code, and s. 283.13(7) Wis. Stats., as a means to achieve compliance with the phosphorus water quality standard in s. NR 102.06, Wis. Adm. Code. The phosphorus limitations and conditions in this permit reflect the approved Adaptive Management (AM) Plan No. AM-2025-02 (September 2025). The permittee shall implement the actions identified in the approved AM Plan in accordance with the goals and measures identified. The goal of the AM Plan is to reduce phosphorus loadings within the watershed action area by a minimum of 22,817 lbs/yr by the end of this permit term. In addition, annual reports are required. See the Schedules section for more details. The Department may terminate the AM option based on the reasons enumerated in NR 217.18(3)(e)2, Wis. Adm. Code. Surface water monitoring requirements are included in the proposed permit in support of the goals and measures of the Adaptive Management Plan. Sampling is required on the day(s) each week as outlined in the approved Adaptive Management Plan.

Acute and Chronic WET – Testing is required during the following quarters: October – December 2026; July – September 2027; April – June 2028; January – March 2029; and October – December 2030.

4 Land Application - Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
004	B	Liquid	Fecal Coliform	Injection	Land Application	163 dry US tons/year

Does sludge management demonstrate compliance? Yes.
Is additional sludge storage required? No.
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No.
Is a priority pollutant scan required? No.

4.1 Sample Point Number: 004- SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Monitoring required in 2027. See Sludge Analysis for PCBs permit section and the Standard Requirements section for Monitoring and Calculating PCB Concentrations in Sludge.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Monitoring required in 2027. See Sludge Analysis for PCBs permit section and the Standard Requirements section for Monitoring and Calculating PCB Concentrations in Sludge.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOA and PFOS. See PFAS Permit Sections for more information.
PFAS Dry Wt			Annual	Grab	Perfluoroalkyl and Polyfluoroalkyl Substances based on updated DNR PFAS List. See PFAS Permit Sections for more information.

4.1.1 Changes from Previous Permit

Sludge limitations and monitoring requirements were evaluated for this permit term and the following changes were made from the previous permit.

- **PFAS** – Annual monitoring has been added pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.
- **PCBs –** The year in which PCB monitoring is required has been updated to calendar year 2027.

4.1.2 Explanation of Limits and Monitoring Requirements

Requirements for disposal, including land application of municipal sludge, are determined in accordance with ch. NR 204, Wis. Adm. Code. Ceiling and high-quality limits for metals in sludge are specified in s. NR 204.07(5). Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k). Radium requirements are addressed in s. NR 204.07(3)(n).

PFAS – The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA has developed a draft risk assessment to determine future land application rates and released this risk assessment in January of 2025. The Department is evaluating this new information. Until a decision is made, the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS" should be followed.

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 this WPDES permit pursuant to ss. NR 214.18(5)(b) and NR 204.06(2)(b)9., Wis. Adm. Code.

5 Schedules

5.1 Mercury Effluent Limits

This compliance schedule requires the permittee to achieve compliance by the specified date.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of mercury. The report shall include an evaluation of collected effluent data and the facility's ability to comply with the final mercury effluent limits. The report shall conclude whether current treatment, operational improvements, or a pollutant minimization program will result in compliance with the final mercury effluent limits.	03/31/2027
Action Plan: Submit an action plan for complying with the final mercury effluent limits.	09/30/2027
Initiate Actions: Initiate the actions identified in the plan.	03/31/2028
Progress Report: Submit a progress report detailing progress made toward meeting the final mercury effluent limits, including all available mercury sample results, a summary of actions taken and any mercury pollutant minimization activities conducted during the previous year.	03/31/2029
Final Evaluation Report: Submit a final evaluation report including all mercury sampling data and a conclusion on the likelihood that mercury effluent limits will still apply. The permittee shall submit a request to re-evaluate the need for mercury effluent limits. If the Department determines there is no reasonable potential to exceed the calculated mercury limits, permit modification would be required to remove the mercury effluent limits and remaining schedule actions.	03/31/2030
Complete Actions: Complete actions necessary to achieve compliance with the final mercury effluent limits.	03/31/2031

5.1.1 Explanation of Schedule

Mercury Effluent Limits – Mercury effluent limits are required based on mercury data collected during the previous permit term (May 2020-July 2025). This schedule allows the permittee time to come into compliance with the calculated mercury effluent limits. Limits become effective at the end of the schedule on April 1, 2031. However, the permittee is required to request a re-evaluation of the need for mercury limits in the Final Evaluation Report. If the Department determines there is no reasonable potential to exceed the calculated mercury limits, permit modification would be required to remove the mercury effluent limits and remaining schedule actions before April 1, 2031.

5.2 PFOS/PFOA Minimization Plan Determination of Need

Required Action	Due Date
Report on Effluent Discharge: 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.	03/31/2027
Report on Effluent Discharge and Evaluation of Need: 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. 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.	03/31/2028

5.2.1 Explanation of Schedule

PFOS/PFOA Minimization Plan Determination of Need – As stated above, ch. NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Section 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.

5.3 Watershed Adaptive Management Option Annual Report Submittals

The permittee shall submit annual reports on the implementation of AM Plan No. AM-2025-02 (September 2025) as specified in permit Sections 3.2.1.7 and 3.2.1.8 and the following schedule.

Required Action	Due Date
Annual Adaptive Management Report #6: Submit an annual adaptive management report. The annual adaptive management report shall: o Confirm continued support of AM Plan No. AM-2025-02 (September 2025) with a narrative	07/31/2026

describing the permittee's support of the Plan and demonstrate fulfillment of the permittee's deliverables specified under the Yahara WINS intergovernmental agreement.	
Annual Adaptive Management Report #7: Submit an Adaptive Management report as defined above.	07/31/2027
Annual Adaptive Management Report #8: Submit an Adaptive Management report as defined above.	07/31/2028
Annual Adaptive Management Report #9: Submit an Adaptive Management report as defined above.	07/31/2029
Final Adaptive Management Report for 2nd Permit Term: Submit an Adaptive Management report as defined above. The report shall summarize continued support for AM Plan No. AM-2025-02 (September 2025) throughout the next permit term and indicate continued participation in the Yahara WINS intergovernmental agreement.	07/31/2030
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek continued coverage under AM Plan No. AM-2025-02 (September 2025) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, this schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the Adaptive Management Reopener Clause section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	09/30/2030
Annual Adaptive Management Report #10: Submit an Adaptive Management report as defined above.	07/31/2031
Annual Adaptive Management Report #11: Submit an Adaptive Management report as defined above.	07/31/2032
Annual Adaptive Management Report #12: Submit an Adaptive Management report as defined above.	07/31/2033
Annual Adaptive Management Report #13: Submit an Adaptive Management report as defined above.	07/31/2034
Final Adaptive Management Report for 3rd Permit Term: Submit an Adaptive Management report as defined above. The report shall summarize continued support for AM Plan No. AM-2025-02 (September 2025) throughout the next permit term and indicate continued participation in the Yahara WINS intergovernmental agreement.	07/31/2035
Renewal of Adaptive Management Plan for Permit Reissuance: If the permittee intends to seek continued coverage under AM Plan No. AM-2025-02 (September 2025) per s. NR 217.18, Wis. Adm. Code, for the reissued permit term, this schedule may be modified to incorporate any changes in AM goals and actions, removed if the AM program is terminated per the Adaptive Management Reopener Clause section, or removed if the adaptive management plan has achieved water quality standards as determined by the Department within the AM action area.	09/30/2035
Annual Adaptive Management Report #14: Submit an Adaptive Management report as defined above.	07/31/2036
Annual Adaptive Management Report #15: Submit an Adaptive Management report as defined above.	07/31/2037
Annual Adaptive Management Report #16: Submit an Adaptive Management report as defined above.	07/31/2038

Annual Adaptive Management Report #17: Submit an Adaptive Management report as defined above.	07/31/2039
Final Adaptive Management Report: Submit an Adaptive Management report as defined above. The report shall summarize continued support for AM Plan No. AM-2025-02 (September 2025) throughout the next permit term and indicate continued participation in the Yahara WINS intergovernmental agreement.	07/31/2040
Achieve Water Quality Standards and Adaptive Management Plan Success: All the receiving waters identified within the AM Plan No. AM-2025-02 (September 2025) shall be measured for success in accordance with Section IV of the AM Plan. Compliance may be demonstrated using effluent data and watershed modeling that uses similar assumptions as the TMDL to demonstrate that the sum total of the allocations have been achieved for each reach. If some, but not all, reaches are complying with the allocations of the TMDL, only those point sources in the complying reaches will be considered in compliance at the end of the adaptive management period. The permittee shall continue to comply with applicable effluent limits (required under s. NR 217.18(3)(e)3, Wis. Adm. Code, expressed as a 6-month avg and 1.0 mg/L monthly avg) and continue support of monitoring per AM-2025-02 (September 2025) at a minimum of monthly May through October for total phosphorus. If the allocations in the TMDL have been achieved but the applicable phosphorus water quality criterion in s. NR 102.06, Wis. Adm. Code, has not been achieved for the facility's receiving water, consistent with s. 283.13(5), Wis. Stats., and Clean Water Act section 301(b)(1)(C), further evaluation and additional actions will be necessary in the next reissued permit as necessary to achieve phosphorus water quality criterion (e.g., DNR reevaluation of TMDL allocations, imposition of more stringent limits, etc.).	03/31/2041

5.3.1 Explanation of Schedule

Watershed Adaptive Management Option Annual Report Submittals – This compliance schedule requires the permittee to submit annual Adaptive Management (AM) reports that show progress towards meeting the goals and measures contained in the approved AM Plan. The schedule may be modified at permit reissuance, should changes in AM goals and measures or timing necessitate different dates for schedule items.

Pursuant to s. NR 217.18(1) Wis. Adm. Code., phosphorus water quality criteria must be achieved "as soon as possible". The duration for this adaptative management schedule is 15 years. This timeframe is consistent with the approved AM Plan, and represents the shortest possible duration based upon the following factors that influence time required for the water body to achieve the phosphorus criterion:

- Magnitude of point and/or nonpoint source phosphorus reductions required;
- Costs associated with point and/or nonpoint source phosphorus reductions;
- For nonpoint source reductions, the time required to contact landowners and receive adequate participation to implement practices;
- Physical characteristics of the watershed and receiving water, including landuse, soil properties, slopes, channel gradient, and level of legacy sediment/phosphorus currently in the system.

5.4 Disinfection and Effluent Limitations for E. coli

This compliance schedule requires the permittee to achieve compliance by the specified date.

Required Action	Due Date
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades.	09/30/2026

Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	03/31/2027
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	04/01/2027

5.4.1 Explanation of Schedule

Disinfection and Effluent Limitations for E. coli – This compliance schedule is included to provide time for the permittee to complete the necessary facility upgrades and install disinfection treatment for meeting E. coli water quality-based effluent limits and disinfection requirements pursuant to s. NR 210.06, Wis. Adm. Code.

5.5 Install Continuous Flow Recording Device

The permittee shall install a continuous flow recording device at Sampling Point 001 (Effluent) in accordance with the following schedule.

Required Action	Due Date
Complete Install: The permittee shall complete installation of the continuous flow recording device at Sampling Point 001 (Effluent).	04/01/2027

5.5.1 Explanation of Schedule

Install Continuous Flow Recording Device – This schedule is included to provide time for the facility to install a continuous flow recording device at Sampling Point 001.

5.6 Land Application Management Plan

A management plan is required for the land application system.

Required Action	Due Date
Land Application Management Plan Submittal: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with ch. NR 204, Wis. Adm. Code, by the Due Date. This management plan shall 1) specify information on pretreatment processes (if any); 2) identify land application sites; 3) describe site limitations; 4) address vegetative cover management and removal; 5) specify availability of storage; 6) describe the type of transporting and spreading vehicle(s); 7) specify monitoring procedures; 8) track site loading; 9) address contingency plans for adverse weather and odor/nuisance abatement; and 10) include any other pertinent information. Once approved, all landspreading activities shall be conducted in accordance with the plan. Any changes to the plan must be approved by the Department prior to implementing the changes.	03/31/2027

5.6.1 Explanation of Schedule

Land Application Management Plan Submittal – This schedule requires the permittee to submit an updated Land Application Management Plan to demonstrate compliance with ch. NR 204, Wis. Adm. Code. The plan is due by the Due Date or at least 60 days prior to landspreading sludge.

Attachments

Water Quality-Based Effluent Limitations for the Oregon Wastewater Treatment Facility WPDES Permit No. WI-0020681-10-0, by Sarah Luck, Water Resources Engineer, dated September 17, 2025

Adaptive Management Plan No. AM-2025-02 (September 2025)

Adaptive Management Conditional Approval Letter (November 2025)

Justification Of Any Waivers From Permit Application Requirements

No waivers from permit application requirements were requested or granted.

Prepared By: Sarah Donoughe, Wastewater Specialist-Adv **Date:** November 7, 2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: September 17, 2025

TO: Sarah Donoughe – SER/Green Bay

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Water Quality-Based Effluent Limitations for the Oregon Wastewater Treatment Facility
WPDES Permit No. WI-0020681-10-0

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 Oregon Wastewater Treatment Facility in Dane County. This municipal wastewater treatment facility (WWTF) discharges to the Oregon Branch, located in the Badfish Creek Watershed in the Lower Rock River Basin. This discharge is included in the Rock River TMDL as approved by EPA on 09/28/2011. 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 at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
BOD_5			30 mg/L	20 mg/L		1
TSS Concentration Limit Mass Limit			 30 mg/L TMDL	 20 mg/L TMDL		1,2
pH	9.0 s.u.	6.0 s.u.				1
Dissolved Oxygen		4.0 mg/L				1
Ammonia Nitrogen April – May June – September October – March	 10 mg/L - 10 mg/L		 6.2 mg/L 6.3 mg/L 10 mg/L	 2.5 mg/L 2.6 mg/L 10 mg/L		-
E. coli March 1 – November 30				126 #/100 mL geometric mean		4
Chloride						5
Mercury Concentration Limit Mass Limit Wet Weather Mass Limit			 **1.3 ng/L** **-** **-**	 1.3 ng/L 2.2 $x10^{-5}$ lbs/day 3.5 $x10^{-5}$ lbs/day		3,6
PFOS and PFOA						7
Phosphorus AM Interim Limits Final Conc. Limits Final Mass Limits				 1.0 mg/L 0.225 mg/L TMDL	 0.50 mg/L 0.075 mg/L	8
TKN, Nitrate+Nitrite, and Total Nitrogen						1,9
Acute WET						10,12
Chronic WET				1.0 TU_c		11.12

Footnotes:

1. No changes from the current permit.

2. Additional TSS and phosphorus mass limitations are required in accordance with the wasteload allocations specified in the Rock River TMDL.

Month	Monthly Ave TSS Effluent Limit (lbs/day)	Weekly Ave TSS Effluent Limit (lbs/day)	Monthly Ave Total P Effluent Limit (lbs/day)
January	247	348	2.18
February	305	430	2.43
March	294	414	2.11
April	303	428	2.16
May	294	414	2.04
June	303	428	2.20
July	294	414	2.02
August	255	359	1.95
September	166	234	1.95
October	259	365	1.99
November	303	428	2.17
December	258	364	2.16

3. Additional limits to comply with the expression of limits requirements in ss. NR 106.07 and NR 205.065(7), Wis. Adm. Code, are included in bold.
4. Additional final limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
5. Monitoring at a frequency to ensure that 11 samples are available at the next permit issuance.
6. These are the WQBELs for mercury. The wet weather mass limit applies when the dry weather mass limit is exceeded and the facility demonstrates to the Department the exceedance occurred during a wet weather event.
7. PFOS and PFOA monitoring is recommended at a frequency of once every two months in accordance with s. NR 106.98(2), Wis. Adm. Code.
8. Under the phosphorus Adaptive Management (AM) Plan, the interim limits (and technology-based effluent limit (TBEL) of 1.0 mg/L, monthly average and 0.50 mg/L, six-month average should be effective upon permit reissuance. The final water quality based effluent limits are 0.225 mg/L as a monthly average, 0.075 mg/L as a six-month average, and the Rock River TMDL mass limits in the above table.
9. As recommended in the Department's October 1, 2019 *Guidance for Total Nitrogen Monitoring in Wastewater Permits*, quarterly total nitrogen monitoring is recommended for all municipal major permittees. Sections 283.37(5) and 283.55(1)(e), Wis. Stats, and ss. NR 200.065(1)(g) and NR 200.065(1)(h), Wis. Adm. Code, provide the authority to request this monitoring during the permit term. Total Nitrogen is the sum of nitrate (NO_3), nitrite (NO_2), and total Kjeldahl nitrogen (TKN) (all expressed as N).
10. Annual acute WET monitoring is required. 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.
11. Annual chronic WET monitoring is required. The Instream Waste Concentration (IWC) to assess chronic test results is 100%. According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), chronic testing shall be performed using a dilution series of 100%, 75%, 50%, 25% & 12.5%. The primary control water used in chronic WET tests conducted on Outfall 001 shall be a grab sample collected from the Oregon Branch.
12. 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. Testing should continue after the permit expiration date (until the permit is reissued).

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

Attachments (2) – Narrative and Site Map

PREPARED BY: Sarah Luck _____ Date: September 17, 2025

Sarah Luck
Water Resources Engineer

E-cc: Ashley Brechlin, Wastewater Engineer – SCR/Fitchburg
Lisa Creegan, Regional Wastewater Supervisor – SCR/Fitchburg
Diane Figiel, Water Resources Engineer – WY/3
Kari Fleming, Environmental Toxicologist – WY/3
Nate Willis, Wastewater Section Manager – WY/3

Attachment #1

Water Quality-Based Effluent Limitations for
Oregon Wastewater Treatment Facility

WPDES Permit No. WI-0020681-10-0

PART 1 – BACKGROUND INFORMATION

Facility Description

Oregon Wastewater Treatment Facility consists of an activated sludge treatment system with grit removal and automated fine screens as preliminary treatment. The activated sludge process is designed to remove phosphorus biologically as well as BOD and suspended solids. Wastewater passes through four final clarifiers for final settling. Chemical phosphorus treatment with alum is available primarily to treat side streams from sludge processing. A facility plan was approved in 2024 including various treatment plant upgrades including construction of a UV Disinfection channel to meet disinfection requirements. New flow ratings were also approved. Sludge is aerobically digested, thickened with a gravity belt thickener and stored in a sludge storage tank. Biosolids are ultimately land spread on DNR approved agricultural fields.

Attachment #2 is a map of the area showing the approximate location of Outfall 001.

Existing Permit Limitations

The current permit, which expired on March 31, 2025, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
BOD_5			30 mg/L	20 mg/L		1
TSS Concentration Limit Mass Limit			 30 mg/L TMDL	 20 mg/L TMDL		1,2
pH	9.0 s.u.	6.0 s.u.				1
Dissolved Oxygen		4.0 mg/L				1
Ammonia Nitrogen April – May June – September October – March	 10 mg/L - 10 mg/L		 6.2 mg/L 6.3 mg/L 10 mg/L	 2.6 mg/L 2.6 mg/L 10 mg/L		-
Chloride						3
Mercury						3
Phosphorus AM Interim Limits Final Conc. Limits Final Mass Limits				 1.0 mg/L 0.225 mg/L TMDL	 0.6 mg/L 0.075 mg/L	2,4
Temperature						3
TKN, Nitrate+Nitrite, and Total Nitrogen						3

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Six-Month Average	Footnotes
Acute WET						5
Chronic WET				3.0 TU_c		5

Footnotes:

1. These limits are based on the Limited Aquatic Life (LAL) community of the immediate receiving water as described in s. NR 104.02(3)(b), Wis. Adm. Code. These limitations are not being evaluated as part of this review since the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed.
2. Additional TSS and phosphorus mass limitations are required in accordance with the wasteload allocations specified in the Rock River TMDL.

Month	Monthly Ave TSS Effluent Limit (lbs/day)	Weekly Ave TSS Effluent Limit (lbs/day)	Monthly Ave Total P Effluent Limit (lbs/day)
January	247	348	2.18
February	305	430	2.43
March	294	414	2.11
April	303	428	2.16
May	294	414	2.04
June	303	428	2.20
July	294	414	2.02
August	255	359	1.95
September	166	234	1.95
October	259	365	1.99
November	303	428	2.17
December	258	364	2.16

3. Monitoring only.
4. The facility is complying with phosphorus limits through Adaptive Management (AM).
5. Annual acute and chronic WET tests required. The IWC for chronic WET was 33%.

Receiving Water Information

- Name: Oregon Branch
- Waterbody Identification Code (WBIC): 800700
- Classifications used in accordance with chs. NR 102 and 104, Wis. Adm. Code:
    - Oregon Branch "From the Oregon outfall downstream to juncture with the Madison Met effluent ditch" is classified in ch. NR 104, Wis. Adm. Code, as limited aquatic (LAL).
    - The confluence of Badfish Creek and the Oregon Branch to CTH "A" (approximately 5.4 miles downstream of the confluence) is classified in ch. NR 104, Wis. Adm. Code, as limited forage fish (LFF).
    - Badfish Creek downstream of the CTH "A" bridge to the confluence with the Yahara River, near Cooksville, is classified a warmwater sport fish (WWSF) community.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code:
    - Oregon Branch
      The following 7-Q_{10} and 7-Q_2 values are from USGS for Station 05430030, where Outfall 001 is located.
      7-Q_{10} = 0 cubic feet per second (cfs)
      7-Q_2 = 0 cfs

90-Q_{10} = 0 cfs

- Confluence of Badfish Creek and the Oregon Branch
  The following 7-Q_{10} and 7-Q_2 values are from USGS station located at the NW ¼ of SE ¼ of SEC. 6, T5N-R10E.
  7-Q_{10} = 0.20 cfs
  7-Q_2 = 0.37 cfs

- Hardness = 355 mg/L as $CaCO_3$. Effluent hardness is used in place of receiving water because there is no receiving water flow upstream of the discharge.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: Not applicable where the receiving water low flows are zero.
- Source of background concentration data: Background concentrations are not included because they do not impact the calculated WQBEL when the receiving water low flows are equal to zero.
- Multiple dischargers: None.
- Impaired water status: Oregon Branch is listed as impaired for PCBs at the point of discharge, as is Badfish Creek, approximately 3.6 miles downstream of the outfall. Approximately 21 miles downstream of the outfall, the Yahara River is listed as impaired for phosphorus and TSS. A TMDL has been approved for the entire Rock River Basin for phosphorus and TSS.

Effluent Information

- Flow rates:
  Design annual average = 2.084 million gallons per day (MGD)
  Peak daily = 4.565 MGD
  Peak monthly = 3.2 MGD
  For reference, the actual average flow from May 2020 through July 2025 was 1.27 MGD.
- Hardness = 355 mg/L as $CaCO_3$. This value represents the geometric mean of four samples collected in June 2024 which were reported on the permit application.
- Wastewater source: Domestic wastewater with industrial contribution from All Color (powder coating; has a pretreatment notification from the Department).
- Water supply: Municipality waterworks.
- Additives: Alum (phosphorus removal)
- Effluent characterization: This facility is categorized as a major municipal 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 chloride and mercury is used in this evaluation.
- Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2, 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.

Copper Effluent Data

Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)	Sample Date	Copper (µg/L)
06/09/24	3.6	06/23/24	6.7	07/07/24	5.8
06/12/24	7.1	06/26/24	6.7	07/10/24	6.5
06/16/24	8.2	06/30/24	5.9	07/14/24	5.5
06/19/24	8.1	07/03/24	5.6		
1-day P_{99} = 9.9 µg/L					
4-day P_{99} = 8.0 µg/L					

Attachment #1

Chloride Effluent Data

Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)	Sample Date	Chloride (mg/L)
02/28/22	330	06/20/22	270	10/11/22	270
03/16/22	300	07/11/22	290	11/02/22	300
04/12/22	280	08/08/22	280	12/06/22	310
05/15/22	260	09/13/22	230		
1-day P_{99} = 352 mg/L					
4-day P_{99} = 316 mg/L					

Mercury Effluent Data

	Mercury (ng/L)
1-day P_{99}	2.7
4-day P_{99}	1.8
30-day P_{99}	1.3
Mean	1.1
Std	0.49
Sample size	19
Range	0.54 - 2.4

Note: The effluent result of 0.85 ng/L on 12/11/2023 was excluded from the dataset since the field blank on that day of 0.17 ng/L is equal to 1/5th of the effluent result per s. NR 106.145(9)(c)2, Wis. Adm. Code.

The following table presents the average concentrations and loadings at Outfall 001 from May 2020 through July 2025 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6), Wis. Adm. Code:

Parameters with Effluent Limits

	Average Measurement	Average Mass Discharged
BOD_5	6 mg/L*	
TSS	5.8 mg/L*	61.7 lbs/day
pH field	7.27 s.u.	
Dissolved Oxygen	7.17 mg/L	
Ammonia Nitrogen	.12 mg/L*	
Phosphorus	0.55 mg/L	5.973 lbs/day

*Results below the limit 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 99th percentile (or P_{99}) 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_{10}

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. Adm. 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_{10} 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.

$$\text{Limitation} = \frac{(WQC)\,(Qs + (1-f)\,Qe) - (Qs - f\,Qe)\,(Cs)}{Qe}$$

Where:

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

Qs = average minimum 1-day flow which occurs once in 10 years (1-day Q_{10}) if the 1-day Q_{10} flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q_{10}).

Qe = 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

Cs = 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_{10} method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations.

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

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD. mg/L	ATC	MAX. EFFL. LIMIT*	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P_{99}	1-day MAX. CONC.
Chlorine		19.0	19.0	3.81	-		
Arsenic		340	339.8	68.0	<1.1		
Cadmium	355	123.4	123.4	24.7	<0.098		
Chromium	301	4446	4445.8	889	<3.3		
Copper	355	51.3	51.3			9.9	8.2
Lead	355	364	363.6	72.7	<5.4		
Mercury (ng/L)		830	830			2.7	2.4
Nickel	268	1080	1080.3	216	<4.7		
Zinc	333	345	344.7	68.9	18		
Chloride (mg/L)		757	757.0			352	330

* Per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016 consideration of ambient concentrations and 1-Q_{10} flow rates yields a more restrictive limit than the 2 × ATC method of limit calculation.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	REF. HARD.* mg/L	CTC	WEEKLY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P_{99}
Chlorine		7.28	7.28	1.46	-	
Arsenic		152.2	152	30.4	<1.1	
Cadmium	175	3.82	3.82	0.8	<0.098	
Chromium	301	325.75	326	65.2	<3.3	
Copper	355	30.60	30.6			8.0
Lead	355	95.24	95.2	19.0	<5.4	
Mercury (ng/L)		440	440			1.8
Nickel	268	169.08	169	33.8	<4.7	
Zinc	333	344.68	345	68.9	18	
Chloride (mg/L)		395	395			316

Monthly Average Limits based on Wildlife Criteria (WC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	WC	MO'LY AVE. LIMIT	30-day P_{99}
Mercury (ng/L)	1.3	1.3	**1.3**

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HTC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P_{99}
Cadmium	880	880	176.0	<0.098	
Chromium (+3)	8400000	8400000	1680000	<3.3	
Lead	2240	2240	448.0	<5.4	
Mercury (ng/L)	336	336.0			1.3
Nickel	110000	110000	22000	<4.7	

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 0 cfs

SUBSTANCE	HCC	MO'LY AVE. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.
Arsenic	40	40.0	8.00	<1.1

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 mercury**. Limits and monitoring recommendations are made in the paragraphs below.

Hexavalent Chromium – Detects of chromium (+6) in 2016, 2017, and 2024 led Oregon Wastewater Treatment Facility to collect additional samples, presented in the table below.

Chromium (+6) Effluent Data

Sample Date	Cr (+6) (µg/L)	Sample Date	Cr (+6) (µg/L)	Sample Date	Cr (+6) (µg/L)
09/20/2016	2.2	10/02/2024	3.4	11/05/2024	3.2
05/23/2017	1.5	10/09/2024	3.3	11/12/2024	3.2
06/13/2024	7.6	10/23/2024	5.8	12/03/2024	16
08/07/2024	1.8	10/29/2024	4.6		

Only two paired samples with total recoverable chromium were collected, both of which were less than the chromium (+6) results. The Department has recently seen an uptick in this anomaly where the total recoverable chromium value is greater than the chromium (+6) result which would seem to be a sampling error since chromium (+6) would be detected in the total recoverable chromium analysis. Furthermore, depending on how the sample was analyzed, colorimetric analyses are more subject to interference (e.g., was the absorbance due to chromium (+6) or some turbidity?). Given these factors and that there are no significant industries discharging to the collection system, it is unlikely chromium (+6) is present at levels of concern in the effluent. Therefore, **no limits or additional monitoring for chromium (+6) are recommended in the permit. If additional chromium (+6) samples are collected, they should be paired with total recoverable chromium.**

Chloride – Considering available effluent data from the current permit term (February 2022 through December 2022), the 1-day P_{99} chloride concentration is 352 mg/L, and the 4-day P_{99} of effluent data is 316 mg/L. These effluent concentrations are below the calculated WQBELs for chloride; therefore, **no effluent limits are needed. Chloride monitoring is recommended to ensure that a minimum of 11 sample results are available at the next permit issuance** to meet the data requirements of s. NR 106.85, Wis. Adm. Code.

Mercury –A review of data from May 2020 – July 2025 indicates the 30-day P_{99} is 1.3 ng/L, which is equal to the wildlife criterion of 1.3 ng/L. Therefore, a mercury effluent limit is required for Oregon Wastewater Treatment Facility. Note: the effluent result of 0.85 ng/L on 12/11/2023 was excluded from the dataset since the field blank on that day of 0.17 ng/L is equal to 1/5th of the effluent result per s. NR 106.145(9)(c)2, Wis. Adm. Code.

Oregon Wastewater Treatment Facility was previously covered under a mercury variance but then showed no reasonable potential for a limit last permit term. Therefore, Oregon Wastewater Treatment Facility would be subject to **the water quality-based effluent limit of 1.3 ng/L as a monthly average, the weekly average mass limit of 2.2 x10^{-5} lbs/day** (1.3x10^{-6} mg/L × 2.084 MGD × 8.34)**, and a wet weather mass limit of 3.5 x10^{-5} lbs/day** (1.3x10^{-6} mg/L × 3.2 MGD × 8.34) using the 30-day design flow rate in accordance with s. NR 106.07(9), Wis. Adm. Code. The wet weather mass limit applies when the

dry weather mass limit is exceeded and the facility demonstrates to the Department the exceedance occurred during a wet weather event.

Expression of Limits
Revisions to ch. NR 106, Wis. Adm. Code, align Wisconsin's water quality-based effluent limitations with 40 CFR 122.45(d), which requires WPDES permits for industrial discharges contain daily maximum and monthly average limitations, whenever practicable and necessary to protect water quality.

The methods for calculating limitations for continuous discharges subject to ch. NR 210 to conform to 40 CFR 122.45(d) are specified in s. NR 106.07(3), Wis. Adm. Code, and are as follows:

> Whenever a monthly average limitation is determined necessary to protect water quality, a weekly average limit shall be calculated using the following procedure and included in the permit unless a more restrictive limit is already determined necessary to protect water quality:
>
> Weekly Average Limitation = (Monthly Average Limitation × MF)
>
> Where:
>
> MF= Multiplication factor as defined in Table 1
>
> CV= coefficient of variation (CV) as calculated in s. NR 106.07(5m), Wis. Adm. Code.
>
> = Standard deviation/arithmetic mean of effluent concentration data (July 2020 through April 2025)
>
> = 0.49/1.1
>
> = 0.4
>
> n= the number of samples per month required in the permit

s. NR 106.07(3)(e)4, Table 1, Wis. Adm. Code — Multiplication Factor (for CV = 0.4)

CV	**n=1**	n=2	n=3	n=4	n=8	n=12	n=16	n=20	n=24	n=30
0.4	**1.00**	1.24	1.37	1.46	1.66	1.75	1.81	1.86	1.89	1.93

Note: This methodology is based on the *Technical Support Document for Water Quality-based Toxics Control* (March 1991). PB91-127415.

The current specifies a quarterly monitoring frequency. Since s. NR 106.07(3)(e)4, Table 1, Wis. Adm. Code, does not specify a multiplication factor for fewer than one sample per month, the MF of 1.00 is used. Therefore, based on a CV of 0.4 and a MF of 1.00, **an additional concentration limit of 1.3 ng/L as a weekly average is recommended.**

PFOS and PFOA – The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98(2), Wis. Adm. Code. Previous monitoring produced a PFOS result of 0.747 ng/L and a PFOA result of 3.20 ng/L. These results are less than one fifth of the respective criteria for each substance. However, based on the effluent flow rate (greater than 1 MGD but less than 5 MGD), **PFOS and PFOA monitoring is recommended at a frequency of once every two months.**

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. The current permit has daily maximum, weekly average, and monthly average limits.

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

Daily maximum limitations are based on acute toxicity criteria in ch. NR 105, Wis. Adm. Code, which are a function of the effluent pH and the receiving water classification. The acute toxicity criterion (ATC) for ammonia is calculated using the following equation:

$$\text{ATC in mg/L} = [A \div (1 + 10^{(7.204 - pH)})] + [B \div (1 + 10^{(pH - 7.204)})]$$

Where:

A = 0.633 and B = 90.0 for Limited Aquatic Life, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 824 sample results were reported from May 2020 through July 2025. The maximum reported value was 8.01 s.u. (Standard pH Units). The effluent pH was 7.91 s.u. or less 99% of the time. The 1-day P_{99}, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 8.02 s.u. The mean plus the standard deviation multiplied by a factor of 2.33, an estimate of the upper ninety ninth percentile for a normally distributed dataset, is 7.99 s.u. Therefore, a value of 8.01 s.u. is believed to represent the maximum reasonably expected pH, and therefore most appropriate for determining daily maximum limitations for ammonia nitrogen. Substituting a value of 8.01 s.u. into the equation above yields an ATC = 12.71 mg/L.

Daily Maximum Ammonia Nitrogen Effluent Limitations Calculation Method

In accordance with s. NR 106.32(2), Wis. Adm. Code, daily maximum ammonia limitations are calculated using the 1-Q_{10} receiving water low flow if it is determined that the previous method of acute ammonia limit calculation (2×ATC) is not sufficiently protective of the fish and aquatic life. The more restrictive calculated limits shall apply.

The calculated daily maximum ammonia nitrogen effluent limits using the mass balance approach with the 1-Q_{10} (estimated as 80 % of 7-Q_{10}) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit (mg/L)
2×ATC	25
1-Q_{10}	13

The 1-Q_{10} method yields the most stringent limit for Oregon Wastewater Treatment Facility.

The limit of 13 mg/L, calculated above, is greater than the current daily maximum limit of 10 mg/L. If Oregon Wastewater Treatment Facility would like to request an increase to the existing permit limits, an assessment of their effluent data consistent with the requirements of ss. NR 207.04(1)(a) and (c), Wis. Adm. Code, must be provided. This evaluation is on a parameter-by-parameter basis and includes consideration of operations, maintenance, and temporary upsets. **Without a demonstration of need for a higher limit in accordance with s. NR 207.04, Wis. Adm. Code, the current daily maximum limit of 10 mg/L must be continued in the reissued permit.**

Presented below is a table of daily maximum limitations corresponding to various effluent pH values. Use of this table is not necessarily recommended in the permit, but it is presented herein for informational purposes.

Attachment #1

Daily Maximum Ammonia Nitrogen Limits – LAL

Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)	Effluent pH (s.u.)	Limit (mg/L)
$6.0 \leq pH \leq 6.1$	83	$7.0 < pH \leq 7.1$	51	$8.0 < pH \leq 8.1$	11
$6.1 < pH \leq 6.2$	82	$7.1 < pH \leq 7.2$	46	$8.1 < pH \leq 8.2$	8.8
$6.2 < pH \leq 6.3$	80	$7.2 < pH \leq 7.3$	40	$8.2 < pH \leq 8.3$	7.3
$6.3 < pH \leq 6.4$	78	$7.3 < pH \leq 7.4$	35	$8.3 < pH \leq 8.4$	6.0
$6.4 < pH \leq 6.5$	75	$7.4 < pH \leq 7.5$	31	$8.4 < pH \leq 8.5$	5.0
$6.5 < pH \leq 6.6$	72	$7.5 < pH \leq 7.6$	26	$8.5 < pH \leq 8.6$	4.1
$6.6 < pH \leq 6.7$	69	$7.6 < pH \leq 7.7$	22	$8.6 < pH \leq 8.7$	3.4
$6.7 < pH \leq 6.8$	65	$7.7 < pH \leq 7.8$	19	$8.7 < pH \leq 8.8$	2.8
$6.8 < pH \leq 6.9$	60	$7.8 < pH \leq 7.9$	16	$8.8 < pH \leq 8.9$	2.4
$6.9 < pH \leq 7.0$	56	$7.9 < pH \leq 8.0$	13	$8.9 < pH \leq 9.0$	2.0

Weekly and Monthly Average Limits based on Chronic Toxicity Criteria (CTC)

The ammonia limit calculation also warrants evaluation of weekly and monthly average limits based on chronic toxicity criteria for ammonia because the design flow rate of the facility has changed from 1.8 MGD to 2.084 MGD.

Weekly average and monthly average limits for Ammonia Nitrogen are based on chronic toxicity criteria. The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified for Limited Aquatic Life is calculated by the following equation.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (su) of the receiving water,
E = 1.0,
$C = 8.09 \times 10^{(0.028 \times (25 - T))}$
T = the temperature of the receiving (ºC)

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as a Limited Forage Fishery is calculated by the following equation. Limits are adjusted for decay later in this report.

$$CTC = E \times \{[0.0676 \div (1 + 10^{(7.688 - pH)})] + [2.912 \div (1 + 10^{(pH - 7.688)})]\} \times C$$

Where:

pH = the pH (su) of the receiving water,
E = 1.0,
C = the minimum of 3.09 or $3.73 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or
$C = 3.73 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and
T = the temperature (ºC) of the receiving water – (Early Life Stages Present), or
T = the maximum of the actual temperature (ºC) and 7 - (Early Life Stages Absent)

The 4-day criterion is simply equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q_{10} (4-Q_3, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q_5 (estimated as 85% of the 7-Q_2 if the 30-Q_5 is not available) to derive monthly average limitations. The stream flow value is further adjusted to temperature. 100% of the flow is used if the Temperature ≥ 16 ºC. Only 25% of the flow is used if the Temperature < 11 ºC. And

50% of the flow is used if the Temperature ≥ 11 ºC but < 16 ºC. However, in this case, 100% of the flow rate is used for the downstream classification change.

The rules provide a mechanism for less stringent weekly average and monthly average effluent limitations when early life stages (ELS) of critical organisms are absent from the receiving water. This applies only when the water temperature is less than 14.5 ºC, during the winter and spring months. Burbot, an early spawning species, are not believed to be present in the Oregon Branch, based on conversations with local fisheries biologists. So "ELS Absent" criteria apply from October through March, and "ELS Present" criteria will apply from April through September.

Since minimal ambient data is available, the "default" basin assumed values are used for Temperature, pH and background ammonia concentrations, shown in the table below, with the resulting criteria and effluent limitations.

Limited Aquatic Life		**Spring**	**Summer**	**Winter**
		April & May	**June – Sept.**	**Oct. - March**
Background Information:	7-Q_{10} (cfs)	0	0	0
	7-Q_2 (cfs)	0	0	0
	Ammonia (mg/L)	0.09	0.07	0.135
	Temperature (°C)	15	19	7
	pH (su)	8.09	8.08	7.98
	% of Flow used	100	100	100
	Reference Weekly Flow (cfs)	0	0	0
	Reference Monthly Flow (cfs)	0	0	0
Criteria mg/L:	4-day Chronic	33.72	26.45	66.42
	30-day Chronic	13.49	10.58	26.57
Effluent Limits mg/L:	Weekly Average	33.72	26.45	66.42
	Monthly Average	13.49	10.58	26.57

Limited Forage Fish		**Spring**	**Summer**	**Winter**
		April & May	**June – Sept.**	**Oct. - March**
Background Information:	7-Q_{10} (cfs)	0.2	0.2	0.2
	7-Q_2 (cfs)	0.37	0.37	0.37
	Ammonia (mg/L)	0.09	0.07	0.135
	Temperature (°C)	15	19	7
	pH (s.u.)	8.21	8.21	7.98
	% of Flow used	100	100	100
	Reference Weekly Flow (cfs)	0.2	0.2	0.2
	Reference Monthly Flow (cfs)	0.3145	0.3145	0.3145
Criteria mg/L:	4-day Chronic			
	Early Life Stages Present	5.60	5.60	
	Early Life Stages Absent			30.62
	30-day Chronic			
	Early Life Stages Present	2.24	2.24	
	Early Life Stages Absent			12.25
Effluent Limitations mg/L:	Weekly Average			
	Early Life Stages Present	5.94	5.94	
	Early Life Stages Absent			32.51
	Monthly Average			

Limited Forage Fish		Spring	Summer	Winter
		April & May	June – Sept.	Oct. - March
	Early Life Stages Present	2.45	2.45	
	Early Life Stages Absent			13.43

Ammonia Decay

When evaluating the limits necessary to protect the Oregon Branch at the classification change from LAL to LFF, decay of ammonia as it travels from the outfall to the confluence with the Madison Met. effluent channel must be accounted for. Ammonia decay rates are dependent upon temperature and instream nitrification. Instream decay is expressed as first order decay model shown below:

$$N_{Limit} = \left(\frac{N_{down}}{EXP(-k_t T)}\right)$$

Where: N_{Limit} = Ammonia limit needed to protect downstream use (mg/L)
N_{down} = Ammonia limit calculated based on downstream classification (mg/L)
$-k_t$ = Ammonia decay rate at background stream temperature (day^{-1})
T = Travel time from outfall to downstream use (day)

Based on the available literature a decay rate of 0.25 day^{-1} at 20°C is suggested as a default rate. Use of a temperature correction factor of $\theta = 1.08$ is also suggested for temperatures above 10°C ($k_t = k_{20}\,\theta^{(T-20)}$). The velocity of the receiving water is assumed to be 5 miles per day and the distance from the point of discharge to the confluence is approximately 1.11 miles. This yields a travel time of roughly 0.22 days. The table below shows the calculated effluent limits that were adjusted for decay from the limits necessary to protect the downstream reach.

Ammonia Limits	Limited Forage Fish (mg/L)	Adjusted for Decay (mg/L)
April – May		
Weekly Avg	5.94	6.2
Monthly Avg	2.45	2.5
June – Sept		
Weekly Avg	5.94	6.3
Monthly Avg	2.45	2.6
Oct – March		
Weekly Avg	32.51	33.2
Monthly Avg	13.43	13.7

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from May 2020 through July 2025.

Ammonia Nitrogen Effluent Data

Ammonia Nitrogen (mg/L)	April – May	June – September	October – March
1-day P_{99}	1.129	0.555	1.491
4-day P_{99}	0.617	0.324	0.891
30-day P_{99}	0.292	0.138	0.376

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Ammonia Nitrogen (mg/L)	April – May	June – September	October – March
Mean*	0.161	0.060	0.156
Std	0.245	0.137	0.374
Sample size	139 (1 ND)	289 (16 ND)	380
Range	<0.025 - 1.299	<0.013 - 2.102	<0.011 - 2.841

*"<" 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 (ND) result.

Reasonable Potential

The need to include ammonia limits in the Oregon Wastewater Treatment Facility permit is determined by calculating 99th upper percentile (or P_{99}) values for ammonia during the month ranges and comparing those to the calculated limits. Based on this comparison, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. However, since the permit currently has daily, weekly, and monthly average limits year-round, **the limits must be retained regardless of reasonable potential**, consistent with s. NR 106.33(1)(b), Wis. Adm. Code:

> (b) If a permittee is subject to an ammonia limitation in an existing permit, the limitation shall be included in any reissued permit. Ammonia limitations shall be included in the permit if the permitted facility will be providing treatment for ammonia discharges.

Conclusions and Recommendations

In summary, after rounding to two significant figures, the following ammonia nitrogen limitations are recommended. No mass limitations are recommended in accordance with s. NR 106.32(5), Wis. Adm Code.

Final Ammonia Nitrogen Limits

	Daily Maximum (mg/L)	Weekly Average (mg/L)	Monthly Average (mg/L)
April – May	10	6.2	2.5
June – September	-	6.3	2.6
October – March	10	10	10

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

Oregon Wastewater Treatment Facility has previously been exempt from disinfection based on the limited aquatic life classification of the receiving water.

Section NR 102.04(5), Wis. Adm. Code, states that all surface waters shall be suitable for supporting recreational use and shall meet *E. coli* criteria during the recreation season. Section NR 102.04(5)(b), Wis. Adm. Code, allows the Department to make exceptions when it determines, in accordance with s. NR 210.06(3), Wis. Adm. Code, that wastewater disinfection is not required to meet *E. coli* limits and protect the recreational use. Section NR 210.06(3), Wis. Adm. Code, tasks the Department with determining the need for disinfection using a site-specific analysis based on potential risk to human or animal health. It sets out the factors that must be considered in determining the necessity to disinfect municipal wastewater or to change the length of the disinfection season.

Discharges to streams with $Q_{7,10}$ values < 0.1 cfs usually result in effluent-dominated situations. The risk of illness is related to the concentration of *E. coli* and therefore dilution is an important consideration when considering risk to human health. Since little to no dilution is present in these situations, disinfection should not be exempted.

The Department has considered the information required by s. NR 210.06(3), Wis. Adm. Code, and has determined that the discharge cannot meet bacteria limits without disinfection. Section NR 210.06(2)(a)1, Wis. Adm. Code, includes two limits which must be included in permits for facilities which are required to disinfect:

1. The geometric mean of *E. coli* bacteria in effluent samples collected in any calendar month may not exceed 126 counts/100 mL.
2. No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 counts/100 mL.

The reissued permit will require Oregon Wastewater Treatment Facility to disinfect from March 1 through November 30 annually. The Friends of Badfish Creek submitted an *E. coli* study showing bacteria present in the stream from Outfall 001 to 20 miles downstream. Additionally, information was submitted showing that recreation was occurring in Badfish Creek during the extended season. The disinfection season matches that of Madison Metropolitan Sewerage District. The facility has completed an upgrade to comply with bacteria limits using ultraviolet (UV) disinfection so likely no compliance schedule is needed.

PART 5 – PHOSPHORUS

Technology-Based Effluent Limit
Subchapter II of Chapter NR 217, Wis. Adm. Code, requires municipal wastewater treatment facilities that discharge greater than 150 pounds of total phosphorus per month to comply with a monthly average limit of 1.0 mg/L, or an approved alternative concentration limit.

Since Oregon Wastewater Treatment Facility currently has a phosphorus limit equal to the TBEL limit of 1.0 mg/L as a monthly average, the need for a TBEL will not be considered further.

In addition, the need for a WQBEL for phosphorus must be considered.

TMDL Limits
The Department has developed a TMDL for the Upper and Lower Rock River Basins. The US EPA approved the Rock River TMDL on September 28, 2011. The document, along with the referenced appendices, can be found at: https://dnr.wisconsin.gov/topic/TMDLs/RockRiver/index.html.

The monthly average total phosphorus effluent limits in pounds per day (lbs/day) are calculated based on the monthly phosphorus wasteload allocation (WLA) given in pounds per month as suggested in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs* dated April 15, 2013. The WLA for this facility is found in the *Total Maximum Daily Loads for Total Phosphorus and Total Suspended Solids in the Rock River Basin* report dated July 2011. The limits are equivalent to concentrations ranging from 0.11 mg/L to 0.14 mg/L at the updated facility design flow of 2.084 MGD. **Monthly average mass effluent limits in accordance with the following table are recommended for this discharge.**

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Total Phosphorus Effluent Limitations

Month	Monthly Total P WLA[1] (lbs/month)	Days Per Month	Monthly Ave Total P Effluent Limit[2] (lbs/day)
January	67.50	31	**2.18**
February	67.92	28	**2.43**
March	65.38	31	**2.11**
April	64.69	30	**2.16**
May	63.34	31	**2.04**
June	66.09	30	**2.20**
July	62.68	31	**2.02**
August	60.37	31	**1.95**
September	58.46	30	**1.95**
October	61.83	31	**1.99**
November	64.95	30	**2.17**
December	67.09	31	**2.16**

Footnotes:
1- Appendix P. Monthly Total Phosphorus Allocations by Wastewater Treatment Facility (p. 147)
2- Monthly Average Total P effluent limit (lbs/day) = monthly Total P WLA (lbs/month) ÷ days per month

Point of Discharge Limits

Section NR 217.16, Wis. Adm. Code, states that the Department may include a TMDL-derived water quality based effluent limit (WQBEL) for phosphorus in addition to, or in lieu of, a s. NR 217.13, Wis. Adm. Code, WQBEL in a WPDES permit. Since the receiving water is not a direct impaired segment covered under an approved TMDL, both TMDL-based limits and s. NR 217.13, Wis. Adm. Code, WQBELs are required.

As a limited aquatic life water, Oregon Branch does not have an applicable phosphorus criterion at Outfall 001. However, a phosphorus criterion of 0.075 mg/L applies for the Oregon Branch, located approximately 1.1 miles below the discharge, where the waterbody is classified as limited forage fish. Section NR 217.13, Wis. Adm. Code, limits are required to protect the downstream water of Oregon Branch where the classification changes and since the Oregon Branch was not listed as impaired prior to TMDL development.

The conservation of mass equation is described in s. NR 217.13(2)(a), Wis. Adm. Code, for phosphorus WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream phosphorus concentrations (Cs):

$$\text{Limitation} = [(WQC)(Qs+(1-f)\ Qe) - (Qs-f\ Qe)\ (Cs)]/Qe$$

Where: WQC = 0.075 mg/L for Oregon Branch
Qs = 100% of the 7-Q_2 of 0.37 cfs at the downstream location
Cs = background concentration of phosphorus in the receiving water pursuant to s. NR 217.13(2)(d), Wis. Adm. Code
Qe = effluent flow rate = 2.084 MGD = 3.2 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall be calculated as a median using the procedures specified in s. NR 102.07(1)(b) to (c), Wis. Adm. Code. All representative data from the most recent 5 years shall be used, but data from the most recent 10 years may be used if representative of current conditions.

A previous evaluation resulted in a WQBEL of 0.075 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. No upstream data are available nor are any additional data than were considered in the previous evaluation, shown in the table below.

SWIMS ID	133044	10012601	543226
Station Name	Yahara River at U.S. Hwy 51	Badfish Creek - Casey Road	Yahara River at Sth 59 Near Fulton WI
Waterbody	Yahara River	Badfish Creek	Yahara River
Sample Count	6	6	20
First Sample	10/21/2008	10/18/2006	05/01/2000
Last Sample	09/15/2009	09/18/2007	09/18/2007
Mean	0.0782	0.304	0.219
Median	0.0765	0.294	0.208

Substituting a median value above criteria into the limit calculation equation above would result in a calculated limit that is less than the applicable criterion of 0.075 mg/L. However, s. NR 217.13(7), Wis. Adm. Code, specifies that "if the water quality-based effluent limitation calculated pursuant to the procedures in this section is less than the phosphorus criterion specified in s. NR 102.06, Wis. Adm. Code, for the water body, the effluent limit shall be set equal to the criterion."

Limit Expression

Since the calculated WQBEL is less than or equal to 0.3 mg/L, the effluent limit of 0.075 may be expressed as a six-month average. If a concentration limitation expressed as a six-month average is included in the permit, a monthly average concentration limitation of 0.225, equal to three times the WQBEL calculated under s. NR 217.13 shall also be included in the permit. The six-month average should be averaged during the months of May – October and November – April.

Mass Limits

A mass limit is also required since the discharge is upstream of a surface water that has an approved TMDL. The **monthly average mass limits based on WLA, discussed above, are recommended**.

Effluent Data

The following table summarizes effluent total phosphorus monitoring data from May 2020 through July 2025.

Total Phosphorus Effluent Data

	Concentration (mg/L)	**Mass (lbs/day)**
1-day P_{99}	1.84	22.016
4-day P_{99}	1.10	12.752
30-day P_{99}	0.72	8.055
Mean	0.55	5.973

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	Concentration (mg/L)	Mass (lbs/day)
Std	0.36	4.348
Sample size	818	805
Range	0.07 - 4.16	0.281 - 44.478

Total Phosphorus Effluent Mass Data by Month

Data in lbs/day	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
1-day P_{99}	16.521	13.519	14.010	15.777	37.578	20.348	21.896	17.376	13.325	28.423	18.424	21.438
4-day P_{99}	9.801	8.649	9.206	10.347	21.303	12.579	13.118	10.682	8.677	15.455	10.694	11.831
30-day P_{99}	6.411	6.177	6.752	7.575	12.976	8.658	8.692	7.306	6.309	8.408	6.778	6.786
Mean	4.883	5.012	5.579	6.250	9.344	6.845	6.684	5.749	5.182	5.468	5.039	4.640
Std	3.225	2.521	2.557	2.885	7.496	3.883	4.253	3.327	2.451	5.833	3.634	4.340
Sample size	69	62	67	64	75	78	78	68	64	63	52	65
Range	1.06 - 18.064	0.281 - 13.397	2.166 - 17.752	2.728 - 20.404	2.294 - 43.636	1.716 - 24.74	1.672 - 21.874	2.145 - 22.095	2.100 - 17.558	1.323 - 44.478	1.500 - 20.113	0.685 - 28.412

Reasonable Potential Determination

The discharge has reasonable potential to cause or contribute to an exceedance of the water quality criterion and is currently operating the treatment facility to remove phosphorus and meet the WQBELs. Therefore, **the WQBELs and TMDL mass limits are required to continue in the reissued permit per ss. NR 217.15 and 205.067(5), Wis. Adm. Code.**

Adaptive Management Interim Limit

Oregon Wastewater Treatment Facility intends to pursue adaptive management (AM) to comply with the total phosphorus effluent limitations calculated based on s. NR 217.13, Wis. Adm. Code, and the Rock River TMDL. Since this is the second permit term in which AM is being pursued, **the required interim limits are 0.50 mg/L, expressed as a 6-month average, and 1.0 mg/L, expressed as a monthly average,** per s. NR 217.18(3)(e)3, Wis. Adm. Code.

Oregon Wastewater Treatment Facility currently has an AM interim limit of 0.60 mg/L as a six-month average. The six-month average effluent data from the current permit term is shown below. Based on this data, **it appears Oregon Wastewater Treatment Facility can meet the 0.50 mg/L interim limit, and no compliance schedule is recommended in the reissued permit.**

Effluent Total Phosphorus Six-month Averages

	Concentration (mg/L)
May 2020 - Oct 2020	0.56
Nov 2020 - April 2021	0.63
May 2021 - Oct 2021	1.05
Nov 2022 - April 2022	0.65
May 2022 - Oct 2022	0.54
Nov 2022 - April 2023	0.52
May 2023 - Oct 2023	0.44

	Concentration (mg/L)
Nov 2023 - April 2024	0.38
May 2024 - Oct 2024	0.47
Nov 2024 - April 2025	0.32

PART 6 – TOTAL SUSPENDED SOLIDS

TMDL Limits

The Rock River TMDL also has wasteload allocations (WLA) for total suspended solids (TSS).

Total Suspended Solids (TSS) Effluent Limitations

Month	Monthly TSS WLA[1] (tons/month)	Days Per Month	Monthly Ave TSS Effluent Limit from WLA[2] (lbs/day)	Weekly Ave TSS Effluent Limit from WLA[3] (lbs/day)
January	3.83	31	**247**	**348**
February	4.27	28	**305**	**430**
March	4.55	31	**294**	**414**
April	4.55	30	**303**	**428**
May	4.55	31	**294**	**414**
June	4.55	30	**303**	**428**
July	4.55	31	**294**	**414**
August	3.95	31	**255**	**359**
September	2.49	30	**166**	**234**
October	4.01	31	**259**	**365**
November	4.55	30	**303**	**428**
December	4.0	31	**258**	**364**

Footnotes:
1- Appendix Q. Monthly Total Suspended Solids Allocations by Wastewater Treatment Facility (p. 149)
2- Monthly average TSS effluent limit (lbs/day) = maximum monthly TSS WLA (tons/month) ÷ days per month x 2,000 lbs/ton
3- Weekly average effluent limit (lbs/day) = monthly average limit (lbs/day) x 1.41 multiplier

Weekly average mass limits were calculated in 2014. At that time, the coefficient of variation (CV) (the standard deviation divided by the mean) was assumed to be 0.6, and the monitoring frequency was 3x/week. Given these two factors, a multiplier of 1.41 was used. Using updated mass data, the CV is calculated to be 0.41 (= 25.3 ÷ 61.7). However, since Oregon Wastewater Treatment Facility is meeting the wasteload allocation, the limits are not recalculated.

Effluent Data

Limits based on a WLA should be given in a permit regardless of reasonable potential. However, for informational purposes, the following table lists the statistics for TSS discharge, as both a concentration and a mass, from May 2020 through July 2025.

Overall TSS Effluent Data

Attachment #1

	Concentration (mg/L)	Mass (lbs/day)
1-day P_{99}	12.0	142.7
4-day P_{99}	8.5	96.9
30-day P_{99}	6.7	73.2
Mean	5.8	61.7
Std	2.0	25.3
Sample Size	816 (2 ND)	816
Range	<2.0 - 18.4	15.1 - 192.9

*"<" 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 (ND) result.

PART 7 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR THERMAL

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in Chapters NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. The daily maximum effluent temperature limitation shall be 86°F for discharges to surface waters classified as Limited Aquatic Life according to s. NR 104.02(3)(b)1, Wis. Adm. Code, except for those classified as wastewater effluent channels and wetlands regulated under ch. NR 103 and described in s. NR 106.55(2), Wis. Adm. Code, which has a daily maximum effluent temperature limitation of 120°F. The 86°F limit applies because the hydrologic classification is not listed as wetland or wastewater effluent channel in ch. NR 104, Wis. Adm. Code.

Reasonable Potential

Based on the available discharge temperature data from January 2022 through December 2022, shown below, the maximum daily effluent temperature reported was 71°F; therefore, no reasonable potential for exceeding the daily maximum limit exists, and **no limits or monitoring are recommended**.

Monthly Temperature Effluent Data & Limits

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
JAN	53	55	-	86
FEB	52	52	-	86
MAR	52	53	-	86
APR	54	56	-	86
MAY	59	62	-	86
JUN	65	67	-	86
JUL	69	69	-	86
AUG	70	71	-	86

Attachment #1

Month	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	Weekly Maximum (°F)	Daily Maximum (°F)	Weekly Average Effluent Limitation (°F)	Daily Maximum Effluent Limitation (°F)
SEP	70	71	-	86
OCT	66	67	-	86
NOV	62	64	-	86
DEC	58	58	-	86

PART 8 – 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_{50} (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm. Code.

- Chronic tests predict the concentration that interferes with the growth or reproduction of test organisms during a seven-day exposure. To assure that a discharge is not chronically toxic to organisms in the receiving water, WET tests must produce a statistically valid IC_{25} (Inhibition Concentration) greater than the instream waste concentration (IWC), according to s. NR 106.09(3)(b), Wis. Adm. Code. The IWC is an estimate of the proportion of effluent to total volume of water (receiving water + effluent). The **IWC of 100%,** shown in the WET Checklist summary below, was calculated according to the following equation, as specified in s. NR 106.03(6), Wis. Adm. Code:

$$\text{IWC (as \%)} = Q_e \div \{(1 - f)\, Q_e + Q_s\} \times 100$$

Where:

Q_e = annual average flow = 2.084 MGD = 3.2 cfs
f = fraction of the Q_e withdrawn from the receiving water = 0
Q_s = 0 cfs at the outfall

- The new IWC of 100% is higher than the previous IWC of 33%. This change is because the point at which the IWC is applied should consider the presence of aquatic organisms at the outfall and not just the use designation that is listed in code. The modeled natural community at the outfall is Cool-Warm Headwater which indicates aquatic organisms are likely to be present at the outfall and not just downstream where the classification changes to limited forage fish and then warm water sport fish. Therefore, the IWC should be protective of the aquatic life community found at the outfall location.

- 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.

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual* (s. NR 219.04, Table A, Wis. Adm. Code), receiving water must be used as the dilution water and primary control in chronic WET tests, unless the use of different dilution water is approved by the Department prior to use. The dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the receiving water location. The specific receiving water location must be specified in the WPDES permit.

- Shown below is a tabulation of all available WET data for Outfall 001. 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.

  Tests conducted prior to July 1, 2005 are not presented in the table below due to significant changes that were made to WET test methods in 2004. These changes were assumed to be fully implemented by certified labs by no later than June 2005. Data collected before July 1, 2005 do not show repeated toxicity that was never resolved and is not the only data that is available.

WET Data History

Date Test Initiated	Acute Results LC_{50} %				Chronic Results IC_{25} %				Footnotes or Comments
	C. dubia	Fathead minnow	Pass or Fail?	Used in RP?	*C. dubia*	Fathead Minnow	Pass or Fail?	Use in RP?	
05/23/2006	>100	>100	Pass	Yes	55.95	>100	Fail	Yes	1
07/17/2007	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
01/31/2008	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
10/13/2009	>100	>100	Pass	No	>100	>100	Pass	No	2
01/06/2015	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
05/03/2016	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
09/12/2017	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
10/02/2018	>100	>100	Pass	Yes	81.2	>100	Fail	Yes	1
03/12/2019	>100	>100	Pass	Yes	9.7	>100	Fail	Yes	
04/16/219	-	-	-	-	>100	>100	Pass	Yes	Retest
06/18/2019	-	-	-	-	78.5	>100	Fail	Yes	Retest,1
10/06/2020	>100	>100	Pass	Yes	92.9	>100	Fail	Yes	1
09/14/2021	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
05/17/2022	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
10/10/2023	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
02/13/2024	>100	>100	Pass	Yes	>100	>100	Pass	Yes	
02/11/2025	>100	>100	Pass	Yes	>100	>100	Pass	Yes	

Footnotes:

1. The IWC has been recalculated and has increased; therefore, this test appears as a failure based on the new IWC in WET Checklist analysis. The pass/fail setting does not impact the reasonable potential analysis - regardless of whether a test is called a pass or fail, these detects are used in the reasonable potential analysis to determine if a WET limit is required.
2. *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.**

  According to s. NR 106.08(6)(d), Wis. Adm. Code, TUa and TUc effluent values are equal to zero whenever toxicity is not detected (i.e. when the LC_{50}, IC_{25} or $IC_{50} \geq 100\%$).

  Acute Reasonable Potential = $0 < 1.0$, **reasonable potential is not shown, and an acute limit is not required.**

  Chronic Reasonable Potential = [(TU_c effluent) (B)(IWC)]

Chronic WET Limit Parameters

TUc (maximum) $100/IC_{25}$	**B** (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/9.7 = 10.3	2.3 Based on 5 detects	100%

[(TUc effluent) (B)(IWC)] = 24 > 1.0

Therefore, **reasonable potential is shown for a chronic WET limit** using the procedures in s. NR 106.08(6), Wis. Adm. Code, and representative data from 2006 through 2025.

Expression of WET Limit
Chronic WET limit = [100/IWC] TU_c = 100/100 = **1.0 TU_c expressed as a monthly average**

The chronic WET limit is changing from 3.0 TU_c to 1.0 TU_c since the IWC has changed from 33% to 100%.

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

	Acute	Chronic
AMZ/IWC	Not Applicable. **0 Points**	IWC = 100% **15 Points**
Historical Data	14 tests used to calculate RP. No tests failed. **0 Points**	16 tests used to calculate RP. Five tests failed based on newly calculated IWC. **0 Points**
Effluent Variability	Little variability, no upsets or significant violations, consistent WWTF operations. **0 Points**	Same as Acute. **0 Points**
Receiving Water Classification	> 4 miles to WWSF **0 Points**	Same as Acute. **0 Points**
Chemical-Specific Data	No reasonable potential for limits based on ATC. Ammonia nitrogen limit carried over from the current permit. Chloride, copper, mercury, and zinc detected. Additional Compounds of Concern: None. **8 Points**	Reasonable potential for mercury limit based on WC. Ammonia nitrogen limit carried over from the current permit. Chloride, copper, and zinc detected. Additional Compounds of Concern: None. **8 Points**
Additives	No biocides and one water quality conditioner (alum) added. Permittee has proper P chemical SOP in place. **1 Point**	All additives used more than once per 4 days. **1 Point**
Discharge Category	One industrial contributor (All Color Powder Coatings, Inc). **5 Points**	Same as Acute. **5 Points**
Wastewater Treatment	Secondary or better. **0 Points**	Same as Acute. **0 Points**
Downstream Impacts	No impacts known. **0 Points**	Same as Acute. **0 Points**
Total Checklist Points:	**14 Points**	**29 Points**
Recommended Monitoring Frequency:	No tests based on checklist; annual tests due to design flow >1.0 MGD.	3 tests during permit term based on checklist; annual tests due to WET limit and design flow >1.0 MGD.
Limit Required?	No	Limit = 1.0 TU_c
TRE Recommended? (from Checklist)	No	No

- After consideration of the guidance provided in the Department's *WET Program Guidance Document* (2022) and other information described above, **annual acute and annual chronic WET tests are recommended in the reissued permit.** 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. Testing should continue after the permit expiration date (until the permit is reissued).

- According to the requirements specified in s. NR 106.08, Wis. Adm. Code, **a chronic WET limit is required. The chronic WET limit shall be expressed as 1.0 TU_c as a monthly average** in the effluent limits table of the permit. A minimum of annual chronic monitoring is required because a chronic WET limit is required. Federal regulations in 40 CFR Part 122.44(i) require that monitoring occur at least once per year when a limit is present.

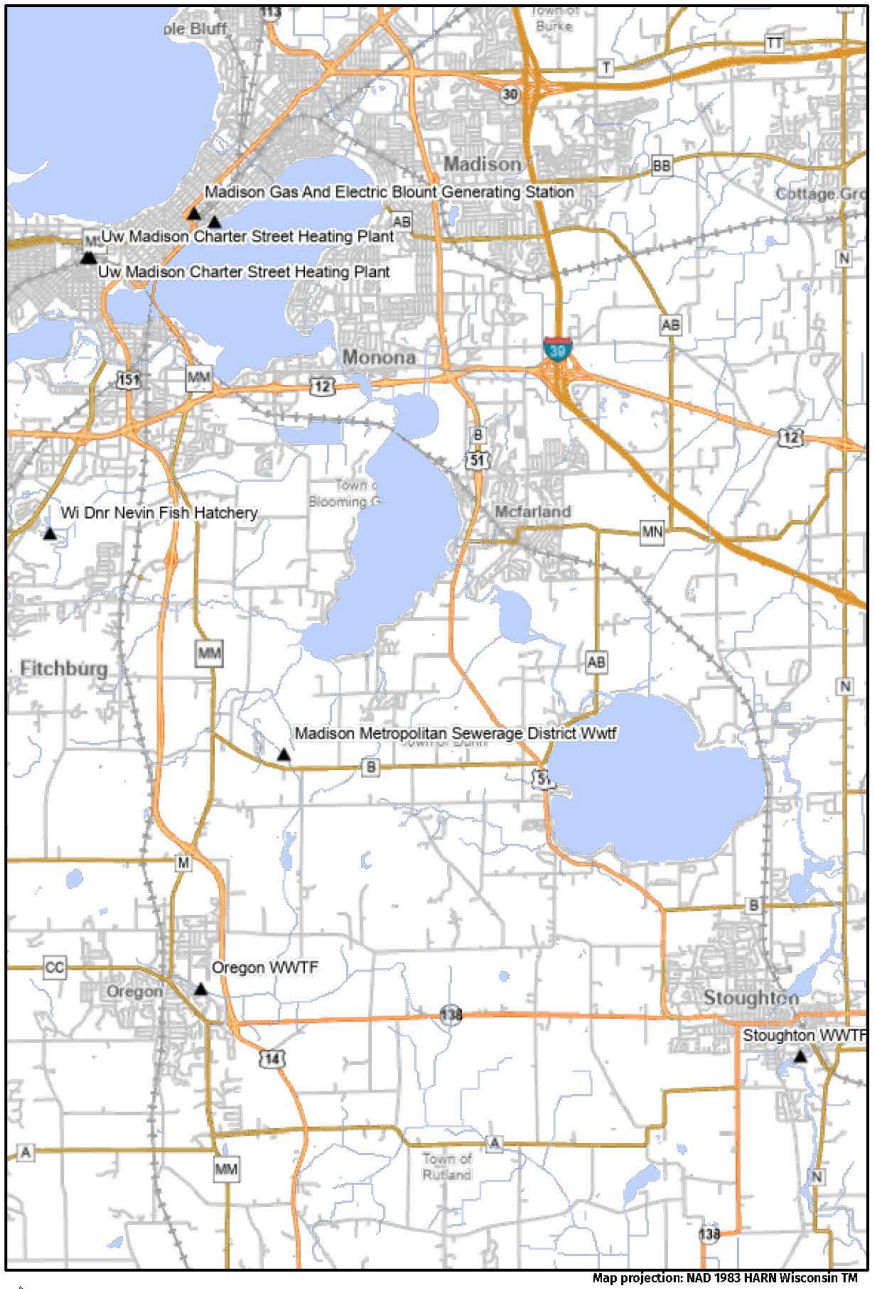
- **A minimum of annual acute and chronic monitoring is recommended because Oregon Wastewater Treatment Facility is a major municipal discharger** with a design flow greater than 1.0 MGD. Federal regulations at 40 CFR Part 122.21(j) require at least 4 acute and chronic WET tests with each permit application on samples collected since the previous reissuance. Therefore, annual monitoring is recommended in the permit term, so that data will be available for the next permit application.

Attachment #3

Site Map

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Oregon Wastewater Treatment Facility



Legend: (some map layers may not be displayed)

- Surface Water Outfalls
- Rivers and Streams
- Intermittent Streams
- Open Water
- City or Village
- County Boundaries

Major Roads

- Interstate Highway
- State Highway
- US Highway

County and Local Roads

- County HWY
- Local Road
- Railroads
- Tribal Lands

Notes:

No longer to scale.

Service Layer Credits:
Permits & Determinations^: WI DNR Bureau of Watershed Management, Cities, Roads & Boundaries: , Surface Water (Cached): WiDNR, USGS, and other data

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