Permit Fact Sheet for Modification

Changes from the previous permit fact sheet are highlighted in grey.

General Information

Permit Number:	WI-0020958-10-1
Permittee Name:	Village of Coon Valley, 205 Anderson Rd, P O Box 129, Coon Valley WI 54623
Discharge Location:	• Coon Valley Wastewater Treatment Plant, 200 Jack Berg Ln., Coon Valley, WI 54623 • South bank of Coon Creek, 1600 feet south of USH 14 & 61 and STH 162 intersection. • SE1/4, SW1/4, Section 7, T14N R05W, Village of Coon Valley, Vernon County, WI
Receiving Water:	Coon Creek in the Coon Creek Watershed of the Bad Axe-La Crosse River Basin in Vernon County
StreamFlow ($Q_{7,10}$):	24 cfs
Stream Classification:	Coldwater (Category 5) community, non-public water supply, Exceptional Resource Water (s. NR 102.11, Wis. Adm. Code)
Design Flow(s)	0.181 MGD Annual Average
Significant Industrial Loading?	None
Operator at Proper Grade?	The operator in charge holds the required certification for Biological Treatment: Ponds, Lagoons and Natural Systems - Basic WWTP A4. Operator will need to take the SS-Sanitary Sewage Collection System subclass within a year of the new permit reissuance
Approved Pretreatment Program?	N/A

Facility Description

The Coon Valley Wastewater Treatment Plant treats domestic waste from the Village of Coon Valley and the Town of Coon. The annual average design flow of the facility is 0.181 million gallons per day (MGD) and the actual annual average influent flow in 2021 was 0.044 MGD. Treatment is via a three-celled aerated lagoon system. The permittee will at times be operating the lagoon system as a modified fill and draw during the spring and fall turnover conditions or during episodes of heavy algae growth, not to exceed the design flow. The Village usually uses retention time to meet their fecal limits, but also has the ability to add chlorine for additional disinfection if needed prior to discharge to Coon Creek, which is categorized as exceptional resource water. An upgrade occurred during the last permit term to allow for chemical addition for phosphorus treatment. Significant effluent monitoring and/or limit changes proposed in the upcoming permit term are as follows: 1) the addition of annual effluent monitoring for total nitrogen, nitrite + nitrate nitrogen and total Kjeldahl nitrogen, 2) fecal coliform monitoring and limits will be replaced during the permit term with *Escherechia coli* (*E. coli*) monitoring and limits, per the associated compliance schedule, 3) the variable daily maximum ammonia limit table has been expanded to include applicable limits at a lower effluent pH, and 4) Monitoring every other month for PFOS and PFOA has been added in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code. The sample frequent for both influent and effluent flow have been changed from “continuous” to “daily” for eDMR reporting purposes.

Substantial Compliance Determination

There have been no formal enforcement actions taken at this facility during the previous permit term. A notice of noncompliance (NON) for July 2019 SSOs was issued. The SSOs occurred due to a high amount of rain during a short period of time, with flooding. Lift station upgrades have alleviated much of the issue.

Per Julia Stephenson: After a desk top review of all discharge monitoring reports, CMARs, land application reports, compliance schedule items, and a site visit on 03/11/2022 this facility has been found to be in substantial compliance.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
701	0.044 MGD (2021)	Representative influent samples shall be collected at the manhole prior to the first aerated lagoon.
001	0.052 MGD (2021)	Representative effluent samples shall be collected from the chlorine contact tank prior to discharge to Coon Creek. Chlorine samples shall be taken after the chlorine contact tank. The limits below apply for both a continuous discharge and in the event that the system is operated as a fill and draw system, not to exceed an annual average design flow of 0.181 MGD.
002	According to their permit reissuance application, the permittee has not removed sludge since 1/1/2000.	Representative composite lagoon sludge samples shall be collected from the first lagoon during 2024 and monitored for List 1 and PCBs. If sludge is removed from the lagoon during the permit term, sludge shall be monitored for Lists 1 & 2, and the requirements of List 3 and 4 shall be met, prior to landspreading.

1 Influent - Monitoring

Sample Point Number: 701- MANHOLE PRIOR to 1st LAGOON

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	Weekly	24-Hr Comp	
Suspended Solids, Total		mg/L	Weekly	24-Hr Comp	

Changes from Previous Permit:

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

Explanation of Limits and Monitoring Requirements

Monitoring of influent flow, BOD5 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.

2 Surface Water - Monitoring and Limitations

Sample Point Number: 001- EFFLUENT to COON CREEK

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate	Daily Max	0.326 MGD	Daily	Continuous	
BOD5, Total	Monthly Avg	30 mg/L	Weekly	24-Hr Flow Prop Comp	
BOD5, Total	Weekly Avg	45 mg/L	Weekly	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	Weekly	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	45 mg/L	Weekly	24-Hr Flow Prop Comp	
pH Field	Daily Max	9.0 su	Daily	Grab	
pH Field	Daily Min	6.0 su	Daily	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max - Variable	mg/L	Weekly	24-Hr Flow Prop Comp	Limit varies with effluent pH. See ammonia section below for limits.
Nitrogen, Ammonia Variable Limit		mg/L	Weekly	24-Hr Flow Prop Comp	
Fecal Coliform	Geometric Mean - Monthly	400 #/100 ml	Weekly	Grab	Interim limit effective May through September annually until the final E. coli limit goes into effect per the Effluent Limitations for E. coli Schedule.
E. coli		#/100 ml	Weekly	Grab	Monitoring only May through September annually until the final limit goes into effect per the Effluent Limitations for E. coli Schedule.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
E. coli	Geometric Mean - Monthly	126 #/100 ml	Weekly	Grab	Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit Effective May through September annually per the Effluent Limitations for E. coli Schedule. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Chlorine, Total Residual	Daily Max	38 ug/L	Daily	Grab	Limit & monitoring apply May-Sept when chlorinating for disinfection.
Phosphorus, Total	Monthly Avg	3.3 mg/L	Monthly	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	4.9 lbs/day	Monthly	Calculated	
Nitrogen, Total Kjeldahl		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	Monitoring required in specific quarters. See Nitrogen Series Monitoring section below for more info.
Nitrogen, Nitrite + Nitrate Total		mg/L	See Listed Qtr(s)	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	See Listed Qtr(s)	Calculated	
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET testing section below
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	
PFOS		ng/L	Annual	Grab	Monitoring only. See PFOS/PFOA Minimization Plan Determination of Need schedule.
PFOA		ng/L	Annual	Grab	

Changes from Previous Permit

The effluent monitoring frequency for all parameters were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance Document "Monitoring Frequencies for Individual Wastewater Permits". The department has determined at this time that no changes in monitoring frequency are warranted. Previously permitted monitoring frequencies for BOD5, TSS, fecal coliform, ammonia and phosphorus are at the minimum frequency recommended. This monitoring frequency was previously based on historic justification for lagoon systems. Since data submitted during the previous permit term shows consistent compliance with permit limitations, and the set monitoring frequency is consistent with requirements of state code, the reduced monitoring frequency is continued in the proposed permit. If performance levels begin to vary during the permitted term, the department may re-evaluate current sampling frequencies and implement more frequent monitoring via permit modification or at permit reissuance.

Other significant changes are as follows: 1) The sample frequency for flow has been changed from "continuous" to "daily" for eDMR reporting purposes, 2) Fecal coliform monitoring and limits have been replaced with *Escherichia coli* (*E. coli*) monitoring and limits. *E. coli* monitoring is required at the permit effective date. An interim fecal coliform limit of 400 #/100 ml as a monthly geometric mean will apply from the permit effective date through the end of a compliance schedule. At the end of the compliance schedule, *E. coli* limits of 126 #/100 ml as a monthly geometric mean that may never be exceeded and 410 #/100 ml as a daily maximum that may not be exceeded more than 10 percent of the time in any calendar month will apply, 3) the addition of annual monitoring for total nitrogen, nitrite + nitrate nitrogen and TKN, 4) the variable daily maximum ammonia limit table has been expanded to include applicable limits at a lower effluent pH, and 5) ~~Monitoring every other month for PFOS and PFOA has been added in the permit in accordance with s. NR 106.98(2)(c), Wis. Adm. Code.~~ PFOS and PFOA – The monitoring frequency for PFOS and PFOA has been reduced from 1/ 2 months to Annual.

For more information on these changes see the limits memo referenced below and additional info. provided below in the individual sections for various parameter.

Explanation of Limits and Monitoring Requirements

Limits were determined for the Village of Coon Valley's existing discharge to Coon Creek using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For more information see the April 29, 2022 memo from Benjamin Hartenbower to Holly Heldstab titled "Water Quality-Based Effluent Limitations for the Coon Valley Wastewater Treatment Facility WPDES Permit No. WI-0020958".

BOD5, TOTAL SUSPENDED SOLIDS (TSS), AND pH – No changes have been made to the categorical permit limitations for BOD5, TSS, or pH. Because the reference effluent flow rates and receiving water characteristics have not changed, limitations do not need to be re-evaluated at this time.

Phosphorus: Phosphorus requirements are based on the Phosphorus Rules that became effective 12/1/2010 as detailed in NR 102 Water Quality Standards and NR 217 Effluent Standards and Limitations for Phosphorus. Chapter NR 217 of the Wis. Adm. Code addresses point source dischargers of phosphorus to surface waters. The code categorically limits municipal dischargers of more than 150 pounds of phosphorus per month to 1.0 mg/L unless an alternative limit is approved. Effluent data demonstrates that the annual monthly average phosphorus loading from Coon Valley is less than 150 lbs/month, therefore a technology based limit is not required. NR 217 also specifies WQBELs for discharges of phosphorus to surface waters of the state from publicly and privately owned wastewater facilities and a facility/site that is regulated under NR 216 where the standards in NR151 and 216 are not sufficient to meet phosphorus criteria. WQBELs for phosphorus are needed whenever the discharge contains phosphorus at concentrations or loadings that will cause or contribute to an exceedance of the water quality standards. Calculations demonstrate that the discharge from Coon Valley

has reasonable potential to cause or contribute to an exceedance of the water quality criterion because the 30-day P99 of reported effluent total phosphorus data is greater than the calculated WQBEL. A mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code, because the discharge is to a surface water that is to or is upstream of a phosphorus impaired water. Therefore the monthly average limits are 4.9 lbs/day and 3.3 mg/L are included in the permit.

Ammonia: Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia. There has been a change in expression of limits per the 2016 revisions to NR 205.065. In accordance with the federal regulation 40 CFR 122.45(d), limits in this permit are to be expressed as weekly average and monthly average limits whenever practicable.

Daily maximum ammonia limits that vary with effluent pH apply year round. See table below titled "Variable Daily Maximum Ammonia Limits" for more information. When possible, samples for ammonia shall be collected at the same time as the pH samples.

VARIABLE DAILY MAXIMUM AMMONIA LIMITS

Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L	Effluent pH s.u.	Limit mg/L
$6.0 \leq pH \leq 6.1$	108	$7.0 < pH \leq 7.1$	66	$8.0 < pH \leq 8.1$	14
$6.1 < pH \leq 6.2$	106	$7.1 < pH \leq 7.2$	59	$8.1 < pH \leq 8.2$	11
$6.2 < pH \leq 6.3$	104	$7.2 < pH \leq 7.3$	52	$8.2 < pH \leq 8.3$	9.4
$6.3 < pH \leq 6.4$	101	$7.3 < pH \leq 7.4$	46	$8.3 < pH \leq 8.4$	7.8
$6.4 < pH \leq 6.5$	98	$7.4 < pH \leq 7.5$	40	$8.4 < pH \leq 8.5$	6.4
$6.5 < pH \leq 6.6$	94	$7.5 < pH \leq 7.6$	34	$8.5 < pH \leq 8.6$	5.3
$6.6 < pH \leq 6.7$	89	$7.6 < pH \leq 7.7$	29	$8.6 < pH \leq 8.7$	4.4
$6.7 < pH \leq 6.8$	84	$7.7 < pH \leq 7.8$	24	$8.7 < pH \leq 8.8$	3.7
$6.8 < pH \leq 6.9$	78	$7.8 < pH \leq 7.9$	20	$8.8 < pH \leq 8.9$	3.1
$6.9 < pH \leq 7.0$	72	$7.9 < pH \leq 8.0$	17	$8.9 < pH \leq 9.0$	2.6

Total Nitrogen Monitoring (NO2+NO3, TKN and Total N): The Department has included effluent monitoring for Total Nitrogen in the permit through the authority under §§ 283.55(1)(e), Wis. Stats., which allows the department to require the permittee to submit information necessary to identify the type and quantity of any pollutants discharged from the point source, and through s. NR 200.065(1)(h), Wis. Adm. Code, which allows for this monitoring to be collected during the permit term. More information on the justification to include total nitrogen monitoring in wastewater permits can be found in the "Guidance for Total Nitrogen Monitoring in Wastewater Permits" dated October 1, 2019. Monitoring for total nitrogen, nitrite + nitrate nitrogen and TKN is required in the following quarters:

- 4th quarter (Oct-Dec) 2022
- 3rd quarter (July-Sept) 2023
- 2nd quarter (April-June) 2024
- 4th quarter (Oct-Dec) 2025
- 2nd quarter (April-June) 2026
- 1st quarter (Jan-March) 2027

Thermal: Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from lethal and sub-lethal thermal effects. Based on the available effluent data, no effluent limits or monitoring are required.

Disinfection/Fecal Coliform

Disinfection is required if fill and draw operation and holding time of lagoon is not sufficient. Historically the permittee has had the ability to disinfect via chlorination/dechlorination if the operation of the facility/lagoon on a fill and draw basis wasn't sufficient to meet the seasonal fecal coliform limits. The facility has not used the chlorination for many permit terms, if ever. It is expected that the use of the chlorination equipment will be necessary to meet the future *E. coli* limits. The department is requiring an accelerated disinfection compliance schedule to ensure fecal coliform/*E. coli* limits are met in order to meet the disinfection requirements of Wis. Adm. Code NR 210.06.

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. The new rule requires that WPDES permits for facilities with required disinfection include monitoring for *E. coli* while facilities are disinfecting during the recreation period, and establish effluent limitations for *E. coli* established in s. NR 210.06 (2), Wis. Adm Code. The administrative code rule changes included the following actions: revised the bacteria water quality criteria from fecal coliform to *E. coli* to protect recreation in ch. NR 102, Wis. Adm. Code.; removed fecal coliform criteria for certain individual waters from ch. NR 104, Wis. Adm. Code.; revised permit requirements for publicly and privately owned sewage treatment works in ch. NR 210, Wis. Adm. Code.; and, updated approved analytical methods for bacteria in ch. NR 219, Wis. Adm. Code.

Whole Effluent Toxicity (WET)

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

- 2nd quarter (April – June) 2023
- 4th quarter (Oct – Dec) 2026

Chloride

Chloride – Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. The mean effluent concentration of chloride samples submitted with the permit application was 221 mg/L, which is below the acute and chronic WQBELs for chloride, therefore, no effluent limits or monitoring is required.

PFOS and PFOA – NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. At the first reissuance of a WPDES permit after August 1, 2022, the new rule requires WPDES permits for municipal dischargers with an average flow rate less than 1 MGD, to be evaluated on a case-by-case basis to determine if monitoring is required pursuant to s. NR 106.98(2)(c), 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. Based on information available at the time the proposed permit was drafted, it was identified that the POTW has an indirect discharger(s) that may be a potential source of PFOS/PFOA. Therefore, monitoring once every two months is included. The initial determination of the need for sampling shall be conducted for up to two years in order to determine if the permitted discharge has the reasonable potential to cause or contribute to an exceedance of the PFOS or PFOA standards under s. NR 102.04(8)(d)1, Wis. Adm. Code.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling. After a review of the data submitted with the Year 2 Report on Effluent Discharges, the department has determined that it is warranted to reduce the sampling frequency in this case. The department is requiring continued monitoring of these compounds to complete the permit term to ensure that the current effluent quality is maintained. At the next permit reissuance, the department will make another determination as to whether further reduction or removal of monitoring is warranted, based on the continued sampling results.

Mercury

The permit application did not require monitoring for mercury because the Coon Valley Wastewater Treatment Facility is categorized as a minor facility as defined in s. NR 200.02(8), Wis. Adm. Code. In accordance with s. NR 106.145(3)(a)3, Wis. Adm. Code, a minor municipal discharger shall monitor, and report results of influent and effluent mercury monitoring once every three months if, "there are two or more exceedances in the last five years of the high-quality sludge mercury concentration of 17 mg/kg specified in s. NR 204.07(5), Wis. Adm. Code." A review of the past five years of sludge characteristics data reveals that all the sample results are within expected analytical ranges and well below the 17 mg/kg level. The concentration in the sludge from 2020 was 0.47 mg/kg. Therefore, no mercury monitoring is required at Outfall 001.

3 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)**
002	N/A	Liquid	N/A	N/A	Landspreading	N/A
Does sludge management demonstrate compliance? Yes. The permittee has not removed sludge from the lagoon since 2000 and do not expect to remove sludge this permit term.						
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						

Sample Point Number: 002- LAGOON SLUDGE

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Once	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Once	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Once	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Once	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Once	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Once	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Once	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Once	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Mercury Dry Wt	Ceiling	57 mg/kg	Once	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Once	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Once	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Once	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Once	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Once	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Once	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Once	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Once	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2024
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2024

Changes from Previous Permit:

Language has been added to the permit indicating the permittee shall monitor for Lists 1 & 2, and meet the requirements of Lists 3 & 4, if sludge is removed from the lagoon. Additionally, the permittee is required to submit 3400-49 annually whether they land apply or monitor sludge in that year. If neither of those activities occurred, they will indicate so on the form prior to submittal.

Explanation of Limits and Monitoring Requirements

Requirements for 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), Wis. Adm. Code. Requirements for pathogens are specified in s. NR 204.07(6) and in s. NR 204.07 (7), Wis. Adm. Code for vector attraction requirements. Limitations for PCBs are addressed in s. NR 204.07(3)(k), Wis. Adm. Code.

4 Schedules

4.1 Effluent Limitations for E. coli

Required Action	Due Date
Status Update: The permittee shall submit information within the discharge monitoring report (DMR) comment section documenting the steps taken in preparation for properly monitoring and testing for E. coli including, but not limited to, selected test method and location of sampling.	11/21/2022
Operational Evaluation Report: The permittee shall prepare and submit an Operational Evaluation Report to the Department for review and approval. The report shall include an evaluation of collected effluent data and proposed operational improvements that will optimize efficacy of disinfection at the treatment plant during the period prior to complying with final E. coli limitations and, to the extent	03/31/2023

possible, enable compliance with the final E. coli limitations. The report shall include a plan and schedule for implementation of the operational improvements. These improvements shall occur as soon as possible, but not later than 06/30/2023. The report shall state whether the operational improvements are expected to result in compliance with the final E. coli limitations. The permittee shall implement the operational improvements in accordance with the approved plan and schedule specified in the Operational Evaluation Report and in no case later than 06/30/2023. If the Operational Evaluation Report concludes that the operational improvements are expected to result in compliance with the final E. coli limitations, the permittee shall comply with the final E. coli limitations by 06/30/2023 and the permittee is not required to comply with subsequent milestones identified below in this compliance schedule (‘Submit Facility Plan’, 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet Limitations', ‘Construction Upgrade Progress Report’, 'Complete Construction', 'Achieve Compliance'). FACILITY PLAN - If the Operational Evaluation Report concludes that operational improvements alone are not expected to result in compliance with the final E. coli limitations, the permittee shall initiate development of a facility plan for meeting final E. coli limitations and comply with the remaining required actions in this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final E. coli limitations using the existing treatment system with only operational improvements, the Department may reopen and modify the permit to include an implementation schedule for achieving the final E. coli limitations sooner than 06/30/2024.	
Submit Facility Plan: If the Operational Evaluation Report concluded that the permittee cannot achieve final E. coli limitations with operational improvements alone, the permittee shall submit a Facility Plan per s. NR 110.09, Wis. Adm. Code. The permittee may submit an abbreviated facility plan if the Department determines that the modifications are minor.	09/30/2023
Final Plans and Specifications: The permittee shall submit final construction plans to the Department for approval pursuant to ch. NR 108, Wis. Adm. Code, specifying treatment plant upgrades that must be constructed to achieve compliance with final E. coli limitations and a schedule for completing construction of the upgrades by the complete construction date specified below.	12/31/2023
Treatment Plant Upgrade to Meet Limitations: The permittee shall initiate bidding, procurement, and/or construction of the project. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats., prior to initiating activities defined as construction under ch. NR 108, Wis. Adm. Code. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.	03/31/2024
Achieve Compliance: The permittee shall achieve compliance with final E. coli limitations.	06/30/2024

Explanation of *E. coli* Schedule: A compliance schedule is included in the permit to provide time for the permittee to investigate options for meeting new effluent *E. coli* water quality-based effluent limits while coming into compliance with the limits as soon as reasonably possible.

4.2 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 PFOS and PFOA data collected including any voluntary influent, intake, in-plant, collection system sampling, and blank sample results.	09/30/2023
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 PFOS and PFOA data collected including any voluntary 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.	09/30/2024

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

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

Special Reporting Requirements: None

Other Comments:

Publishing Newspaper: The Westby Times, PO Box 140, Westby, WI 54667-0140

Attachments:

~~WQBEL memo from Benjamin Hartenbower to Holly Heldstab April 29, 2022 titled "Water Quality-Based Effluent Limitations for the Coon Valley Wastewater Treatment Facility WPDES Permit No. WI-0020958".~~

PFOS and PFOA Water Quality-Based Effluent Limitations for the Coon Valley Wastewater Treatment Facility -WPDES Permit No. (WI-0020958) in Vernon County, by Amy Garbe, PE, Wastewater Engineer, dated 11/14/24

Proposed Expiration Date: September 30, 2027

Justification Of Any Waivers From Permit Application Requirements

None

Prepared By: Holly Heldstab, Wastewater Specialist

Date: October 25, 2022

cc: ~~Julia Stephenson, WIDNR – LAX~~ Katie Jo Jerzak, PE, Wastewater Engineer

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: November 21, 2024

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: November 14, 2024

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for the Coon Valley Wastewater Treatment Facility -WPDES Permit No. (WI-0020958) in Vernon County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for Coon Valley Wastewater Treatment Facility. The wastewater treatment plant discharges effluent to Coon Creek in the Coon Creek Watershed in the Bad Axe/La Crosse River Basin.

The current permit, effective since November 2022, has monitoring only for PFOS and PFOA. The following review is based on new regulations which are now in effect throughout the state of Wisconsin and recommendations are made in accordance with chapters NR 102, 104, 105, 106, 207, and 217 of the Wisconsin Administrative Code, where applicable.

Receiving Water Information

- Name: Coon Creek
- Classification: Coldwater (Category 5) community, non-public water supply, Exceptional Resource Water (s. NR 102.11, Wis. Adm. Code)
- Flow: The following 7-Q10 and 7-Q2 values are from USGS for Station 05386500, 700 ft upstream from US HWYs 14 and 61, at Coon Valley where Outfall 001 is located.
  7-Q10 = 24 cfs (cubic feet per second)
  7-Q2 = 28 cfs
  Harmonic Mean Flow = 43.6 cfs using a drainage area of 78.6 mi^2
  The Harmonic Mean has been estimated based on average flow and the 7-Q10 using an equation from U.S. EPA's Technical Support Document for Water Quality-Based Toxics Control (March 1991, EPA/505/2-90-001, pgs. 88-89).
- % of Flow used to calculate limits: 25%

Effluent Information

- Flow: Average Design Flow = 0.181 MGD, for reference, the actual average flow from November 2022 to July 2024 was 0.047 MGD.
- Effluent characterization: This facility is categorized as a minor municipality

The following table lists the statistics for effluent PFOS and PFOA levels from November 2022 through July 2024.

	PFOS ng/L	PFOA ng/L
1-day P_{99}	7.64	6.75
4-day P_{99}	5.54	5.35
30-day P_{99}	4.44	4.58
Mean	3.88	4.18
Std	1.24	0.91

Printed on Recycled Paper

Sample Size	11	11
Range	2.3-6.2	2.5-5.81

Water Quality Based Limit – PFOS and PFOA
Administrative rules for PFOS and PFOA took effect on August 1, 2022. These rule revisions include additions to ch. NR 102 (s. NR 102.05), Wis. Adm. Code, which establish PFOS and PFOA standards for surface waters. Revisions to ch. NR 106 (s. NR 106, Subchapter VIII), Wis. Adm. Code establish procedures for determining water quality based effluent limits for PFOS and PFOA, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

PFOS
Due to PFOS being a bioaccumulating compound of concern (BCC), no mixing zone is allowed pursuant s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criteria (8 ng/L).

PFOA
The conservation of mass equation is described in s. NR 106.06(4)(b)1. Wis. Adm. Code, and includes variables of water quality criterion (WQC), receiving water flow rate (Qs), effluent flow rate (Qe), and upstream PFOA concentrations (Cs) provided below.

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

Where:

WQC = 95 ng/L for Coon Creek
Qs = 25% of the harmonic mean pursuant s. NR 106.06(4)(c)10., Wis. Adm. Code = 10.9 cfs
Cs = background concentration of PFOA in the receiving water pursuant to s. NR 106.06(4)(e), Wis. Adm. Code
Qe = effluent flow rate = 0.181 MGD = 0.280 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

After substituting the appropriate variables, the calculated PFOA limit is 3,792 ng/L.

Reasonable Potential Determination
In accordance with s. NR 106.98(4)(a), Wis. Adm. Code, **the discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS** because the 30-day P_{99} of reported effluent PFOS data is less than the calculated WQBEL (8 ng/L). Therefore, **a WQBEL is not required.**

The discharge does not have reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOA because the 30-day P_{99} of reported effluent PFOA data is less than the calculated WQBEL (3,792 ng/L). Therefore, **a WQBEL is not required.**

Conclusions
The discharge has no reasonable potential to cause or contribute to an exceedance of the water quality criterion for PFOS nor PFOA. Therefore, no WQBELs are required.

Pursuant to s. NR 205.066, Wis. Adm. Code, the department may specify the monitoring frequency for PFOS and PFOA on a case-by-case basis after the initial 24 months of sampling. **After a review of the available data, the department has determined that it is warranted to reduce the sampling frequency in this case to annually.**

If there are any questions or comments on these recommendations, please contact Amy Garbe by telephone at (608) 716-9968 or by email at Amy.Garbe@wisconsin.gov.

Attachments (2) – P99 Calculations

PREPARED BY: _____ date: 11/14/24

Amy Garbe, P.E., Wastewater Engineer

cc: Katie Jo Jerzak, P.E., Basin Engineer – WCR/Eau Claire
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -				
=	= =	=	=	
SUBSTANCE:				
NUMBER OF VALUES:	------			Data Summary
TOTAL	11			Nov-22 4.62
DETECTED	11			Jan-23 3.2
NON-DETECTED	0			Mar-23 2.3
				Jun-23 5
d	0			Jul-23 5.2
				Oct-23 4.12
m	3.88			Nov-23 2.74
				Jan-24 3.5
mean of all data	3.88			Mar-24 2.7
				Jun-24 3.1
s	1.240484			Jul-24 6.2
	------	------	------	
n	1	4	30	
d^n	0	0	0	
p	0.99	0.99	0.99	
	3.034854	3.034854	3.034854	
Z_p	2.326785	2.326785	2.326785	
1+(s/m)^2	1.102216	1.102216	1.102216	
(sigma_d)^2	0.097323	0.097323	0.097323	
mu_d	1.307174	1.307174	1.307174	
(sigma_dn)^2	0.097323	0.025233	0.003401	
mu_dn	1.307174	1.343219	1.354134	
P_99 exponent	2.033051	1.712826	1.489836	
	-------	-------	-------	
P_99	7.64	5.54	4.44	
	-------	-------	-------	

Attachment 2 – PFOA P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -				
=	= =	=	=	
SUBSTANCE:				
NUMBER OF VALUES:	------			
TOTAL	11			
DETECTED	11			
NON-DETECTED	0			
d	0			
m	4.178182			
mean of all data	4.178182			
s	0.912719			
	------	------	------	
n	1	4	30	
d^n	0	0	0	
p	0.99	0.99	0.99	
Z_p	3.034854 2.326785	3.034854 2.326785	3.034854 2.326785	
1+(s/m)^2	1.04772	1.04772	1.04772	
(sigma_d)^2	0.046616	0.046616	0.046616	
mu_d	1.406568	1.406568	1.406568	
(sigma_dn)^2	0.046616	0.011859	0.001589	
mu_dn	1.406568	1.423946	1.429081	
P_99 exponent	1.90894	1.677335	1.521844	
	-------	-------	-------	
P_99	6.75	5.35	4.58	
	-------	-------	-------	

Data Summary	
Nov-22	5.81
Jan-23	4
Mar-23	2.5
Jun-23	4.2
Jul-23	4.3
Oct-23	5.29
Nov-23	3.86
Jan-24	4.5
Mar-24	3.7
Jun-24	3.2
Jul-24	4.6