Permit Modification Fact Sheet

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

General Information

Permit Number:	WI-0021768-10-1	
Permittee Name:	City of Seymour	
Address:	445 Municipal Drive	
City/State/Zip:	Seymour WI 54165	
Discharge Location:	South bank of Black Creek north of wastewater treatment facility approximately 0.25 miles upstream of the CTH G crossing (44.51855°N, 88.34075°W)	
Receiving Water:	Black Creek (Shioc Watershed) in the Wolf River Basin, Outagamie County (WBIC 317100)	
StreamFlow ($Q_{7,10}$):	7-Q_{10} = 0.04 cubic feet per second (cfs) 7-Q_2 = 0.07 cfs	
Stream Classification:	Limited Forage Fish (LFF) community, non-public water supply	
Discharge Type:	Continuous	
	Monthly Maximum	0.875 million gallons per day (MGD)
	Annual Average	0.578 MGD
Significant Industrial Loading?	Yes, Emmi Roth USA Inc. blue cheese production facility located at 124 E Bronson Road	
Operator at Proper Grade?	Yes. Seymour Wastewater Treatment Facility is an advanced level facility requiring an operator certified in Subclass A1 (Suspended Growth Processes), B (Solids Separation), C (Biological Solids/Sludges), P (Total Phosphorus, and SS (Sanitary Sewage Collection System). John Schoen, Certified Operator, is an Advanced Level, Operator-In-Charge, certified in all subclasses listed above.	
Approved Pretreatment Program?	Not applicable.	

Facility Description

The City of Seymour owns and operates a tertiary treatment advanced WWTF. Facility treatment units include preliminary treatment with screening and grit removal, extended aeration activated sludge, final clarification, tertiary sand filtration and phosphorus removal with aluminum chloride (Alum) chemical addition. The facility has the ability to bypass flow around primary and secondary treatment and blend with treated effluent during extremely high flows in wet weather. Waste activated sludge (WAS) is aerobically digested in the extended aeration system and the resulting liquid is held in an onsite sludge storage vessel. The stored sludge is ultimately land applied on department approved site. Proposed facility

upgrades include new screening, new grit removal, expansion of the extended aeration activated sludge treatment, new chemical enhanced tertiary filtration, and solids storage expansion. Effluent is discharged on a continuous basis via Outfall 001 to the south bank of Black Creek, approximately 0.25 mi upstream of the County Highway G crossing.

Substantial Compliance Determination

Enforcement During Last Permit: A Notice of Noncompliance was issued in August 2019 for failure to submit required reports under the schedule to comply with final effluent limits for phosphorus. 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 app reports, compliance schedule items, and a site visit on January 3, 2024 this facility has been found to be in substantial compliance with their current permit.

Compliance determination entered by Barti Oumarou on January 23, 2024.

Fact Sheet Organization

This fact sheet identifies changes in permit conditions that the department has made when reissuing the City of Seymour WPDES permit. This fact sheet contains all content required under s. NR 201, Wis. Adm. Code, as applicable. The permit remains in effect until the permit is either revoked and reissued, modified, or reissued. The tables and sections that follow were taken from the permit and are numbered in this fact sheet as they are numbered in the permit. Changes to monitoring requirements, limits, and/or schedules are shaded. For complete explanations of derived effluent limitations including water quality-based effluent limitations, please refer to the attached technical memorandum: Water Quality-Based Effluent Limits Technical Memorandum for Seymour Wastewater Treatment Facility dated October 4, 2023.

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		INFLUENT: Representative samples shall be collected from the automatic sampling device drawing samples after the raw sewage pumps immediately following screening and grit removal.
001		EFFLUENT: Representative samples shall be collected from the discharge weir of the former chlorine contact chamber.
003		LIQUID SLUDGE: Representative samples of the aerobically digested liquid sludge shall be collected from the sludge storage tank after complete mixing.
104		BLENDING: Sample point for reporting diverted flow during high flow events. Flow bypasses primary and secondary treatment to the chlorine contact tank and blends with treated effluent from the secondary clarifiers prior to effluent sampling point and outfall. The permittee shall notify the Department when blending occurs. See 'Blending' requirements in the Standard Requirements section of the permit.

1 Influent – Monitoring Requirements

Sample Point Number: 701- INFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Continuous	Continuous	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	

Changes from Previous Permit:

Monitoring requirements were re-evaluated for the proposed permit term and no changes were required in this permit section. Sampling requirements and frequencies are the same as the previous permit. Effluent flow is not measured. It is assumed to be representative of the influent flow as the hydraulic residence time in the treatment plant is short.

Explanation of Limits and Monitoring Requirements

Characterization of the influent strengths and volumes coming into the treatment plant is required under s. NR 210.04, Wis. Adm. Code. through minimally monitoring for flow, BOD5, Total, and Total Suspended Solids. 24-hr composite sampling three times per week is adequate to characterize the influent quality for this facility.

2 Inplant - Monitoring and Limitations

Sample Point Number: 104- In-Plant Diversion

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Per Occurrence	Calculated	See 'Blending Flow' permit section and 'Blending' in Standard Requirements permit section.
Time		hours	Per Occurrence	Calculated	Report the total duration of blending within a given day (12:00am-11:59pm) in which blending occurs. See 'Blending Flow' permit section below and 'Blending' in Standard Requirements permit section.

Changes from Previous Permit:

Sample Point 104 was added to the permit.

Explanation of Limits and Monitoring Requirements

Flow and time of the flow bypassed for blending with final treated effluent is included in the permit. Blending for the facility was approved May 2, 2016 (DNR Review Project No. S-2016-0178).

3 Surface Water - Monitoring and Limitations

Sample Point Number: 001- EFFLUENT

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD5, Total	Daily Max	30 mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Monthly Avg	15 mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Daily Max	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	Monthly Avg	92 lbs/day	3/Week	Calculated	Limit effective immediately. See 'Upper Fox Wolf Total Maximum Daily Load (TMDL) Calculations' and 'TMDL Limitations for Total Suspended Solids' subsections.
Suspended Solids, Total	Weekly Avg	130 lbs/day	3/Week	Calculated	Limit effective immediately. See 'Upper Fox Wolf Total Maximum Daily Load (TMDL) Calculations' and 'TMDL Limitations for Total Suspended Solids' subsections.
Suspended Solids, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR.

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	5/Week	Grab	
Nitrogen, Ammonia (NH3-N) Total	Daily Max	10 mg/L	Weekly	24-Hr Flow Prop Comp	Effective year-round.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.6 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective January through February each year.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	6.7 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during March.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	5.7 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective April through May.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	4.6 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during July.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	5.8 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective September through October and June.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	4.7 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during August.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	12 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during November.
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	11 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during December.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.8 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective January through February
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	3.3 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during March.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.3 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective April through May and August.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	2.4 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective June through July and September through October.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	6.6 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during November.
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	5.3 mg/L	Weekly	24-Hr Flow Prop Comp	Limit effective during December.
Phosphorus, Total		mg/L	3/Week	24-Hr Flow Prop Comp	Monitoring only. See 'Water Quality Based Effluent Limits (WQBELs)

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					for Total Phosphorus' schedule in permit.
Phosphorus, Total	6-Month Avg	0.96 lbs/day	3/Week	Calculated	Limit effective immediately. See 'Upper Fox Wolf Total Maximum Daily Load (TMDL) Calculations' and 'TMDL Limitations for Total Phosphorus' subsections in permit.
Phosphorus, Total	Monthly Avg	2.9 lbs/day	3/Week	Calculated	Limit effecive immediately. See 'Upper Fox Wolf Total Maximum Daily Load (TMDL) Calculations' and 'TMDL Limitations for Total Phosphorus' subsections in permit.
Arsenic, Total Recoverable		ug/L	Quarterly	24-Hr Flow Prop Comp	Monitoring only. See 'Total Metal Analyses' subsection in permit.
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	Monitoring only from October 2027 through September 2028.. See 'Total Metal Analyses' subsection in permit.
Chloride		mg/L	4/Month	24-Hr Flow Prop Comp	Monitoring only on four consecutive days each calendar month.
Temperature Maximum		deg F	Daily	Continuous	See 'Effluent Temperature Monitoring' subsection in permit.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	See 'Nitrogen Series Monitoring' subsection in permit.
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	See 'Nitrogen Series Monitoring' subsection in permit.
Nitrogen, Total		mg/L	Quarterly	Calculated	See 'Nitrogen Series Monitoring' subsection in permit. Total Nitrogen = Total Kjeldahl N (mg/L) +

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					(Nitrite + Nitrate Nitrogen) (mg/L)
PFOS		ng/L	Annual	Grab	Monitoring only. See permit subsections 'PFOS/PFOA Sampling and Reporting Requirements' and 'PFOS/PFOA Minimization Plan Determination of Need' and permit schedule 'PFOS/PFOA Minimization Plan Determination of Need'.
PFOA		ng/L	Annual	Grab	Monitoring only. See permit subsections 'PFOS/PFOA Sampling and Reporting Requirements' and 'PFOS/PFOA Minimization Plan Determination of Need' and permit schedule 'PFOS/PFOA Minimization Plan Determination of Need'.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See 'Whole Effluent Toxicity (WET) Testing' subsection in permit.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See 'Whole Effluent Toxicity (WET) Testing' subsection in permit.

Changes from Previous Permit

Phosphorus, Total – Final mass based limits were added to the permit consistent with the wastewater allocations in the approved Upper Fox Wolf Total Maximum Daily Loads (TMDL) study.

Arsenic, Total Recoverable – Quarterly monitoring for arsenic, total recoverable has been added to the permit.

Zinc, Total Recoverable – Quarterly monitoring for zinc, total recoverable has been added to the permit.

Chloride – Monitoring for chloride has been added to the permit at four times per month (4/month) with individual representative samples collected in consecutive days each month.

Temperature Maximum – Daily temperature monitoring has been added to the permit.

Total Nitrogen Series – Monitoring for Kjeldahl, Nitrogen and Nitrite + Nitrate Total in rotating quarters along with the calculated Total Nitrogen result has been added to the permit.

PFOS and PFOA – Monitoring is included in the permit in accordance with s. NR 106.98(2)(a), Wis. Adm. Code. The monitoring frequency has been reduced from 1/ 2 Months to Annual.

Acute and Chronic Whole Effluent Toxicity (WET) – WET Testing has been added to the permit at 2 times over the permit term for Acute WET and 3 times over the permit term for Chronic WET.

Explanation of Limits and Monitoring Requirements

Monitoring frequencies - Section NR 205.066(1) Wis. Adm. Code allows sampling frequency to be set on a case-by-case basis. The permittee demonstrates a history of consistent compliance with existing permit limits. Data submitted during the previous permit term continues to show consistent compliance with permit limitations, and the set monitoring frequencies are consistent with requirements of state code. The current monitoring frequencies for all parameters shall continue this permit term. 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.

BOD_5, pH, and Dissolved Oxygen - Standard municipal wastewater requirements for BOD_5, total suspended solids, dissolved oxygen, and pH are included based on ch. NR 210, Wis. Adm. Code 'Sewage Treatment Works' requirements for discharges to fish and aquatic life streams. Chapter NR 102, Wis. Adm. Code 'Water Quality Standards for Surface Waters' also specifies requirements for pH for fish and aquatic life streams.

Nitrogen, Ammonia (NH3-N) Total - Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Table 2C and Table 4B of ch. NR 105, Wis. Adm. Code (effective March 1, 2004). Subchapter IV of ch. NR 106 establishes procedures for calculating water quality-based effluent limitations (WQBELs) for ammonia (effective March 1, 2004).

Revisions to ch. NR 106, Wis. Adm. Code, in September 2016 aligned Wisconsin's WQBELs with 40 CFR § 122.45(d), which specifies that effluent limits for continuous dischargers must be expressed as weekly and monthly averages for publicly owned treatment works, unless shown to be impracticable. Because a daily maximum ammonia limit is necessary for Seymour Wastewater Treatment Facility, weekly and monthly average limits are also included and are based on downstream protection of the designated uses for Black Creek.

Total Maximum Daily Load (TMDL) Derived Limits - Wasteload allocations (WLA) specified in TMDLs are expressed as WQBELs (water quality based effluent limits). The derived WQBELs are consistent with the assumptions and requirements of the approved Upper Fox and Wolf River Basins TMDL. The **Total Suspended Solids** WLA for this facility is 22,807 lbs/yr, and the **Total Phosphorus** WLA for this facility is 300 lbs/yr. These values are found in Appendix H and Appendix I of the EPA-approved "Total Maximum Daily Loads for Total Phosphorus in the Upper Fox and Wolf River Basins (UFW TMDL)" report dated February 2020. This total WLA is expressed as weekly and monthly averages in the permit as recommended in the *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Programs (*April 2020) to be consistent with the assumptions and requirements of the TMDL.

Arsenic, Total Recoverable and Zinc, Total Recoverable – Procedures for determining the necessity for inclusion of limits for toxic substances under s. NR 106.05 Wis. Adm. Code allow for comparing the upper 99th percentile of the available discharge concentrations of a substance to the applicable limit. Since at least 11 detected results are needed for this approach, quarterly monitoring over the permit term is included.

Chloride – The effluent's 4-day P99 (the upper 99th percentile projected to occur over a 4-day period from a given dataset) over the last permit term is 397 mg/L. This is just under the calculated weekly average limit of 399 mg/L. Because the daily concentrations are close to exceeding this limit, the permit requires continued chloride monitoring in the effluent. Further, samples are to be collected on four consecutive days each month as this provides a dataset with weekly averages that are less influenced by spikes in daily values.

Temperature – Daily temperature monitoring has been added to the permit as the facility presently measures effluent temperature continuously. Data collected over the permit term will be used in consideration of the next dissipative cooling request at permit reissuance.

Total Nitrogen Series - 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. Quarterly effluent monitoring for Total Nitrogen is included in the permit because of the potential for higher nitrogen loading resulting from higher flows (major facilities), higher concentrations, or both. 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.

Annual tests are scheduled in the following rotating quarters: October – December 2024; January – March 2025; April – June 2026; July – September 2027; and October – December 2028

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 source water has known levels of PFOS/PFOA.

Therefore, monitoring once every two months is included. A sample frequency of 1/2 months means one sample is taken during any two-month period. Examples of 1/2 month sample would be every other month (Jan, March, May, etc.) or back-to-back months with a break in between (February & March, May & June, Aug & Sept, etc.). DMR Short Forms will be generated for the following time periods: January-February, March-April, May-June, July-August, September-October, and November-December. At a minimum one sample result will be present on each form.

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.

Whole Effluent Toxicity (WET) - 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)

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)**
003		Liquid				
Is additional sludge storage required?						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? If yes, special monitoring and recycling conditions will be included in the permit to track any potential problems in landapplying sludge from this facility						
Is a priority pollutant scan required? Priority pollutant scans are required once every 10 years at facilities with design flows between 5 MGD and 40 MGD, and once every 5 years if design flow is greater than 40 MGD.						

Sample Point Number: 003- LIQUID 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	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
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	
Radium 226 Dry Wt		pCi/g	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	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	Once in 2025. See 'Sludge Analysis for PCBs' section in permit.
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	Once in 2025. See 'Sludge Analysis for PCBs' section in permit.
PFOA + PFOS		ug/kg	Annual	Calculated	Report the sum of PFOS and PFAS. See PFAS Permit Sections for more information.

Changes from Previous Permit:

PFAS – Annual monitoring is included in the permit pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

Explanation of Limits and Monitoring Requirements

Requirements for 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 ch. NR 204.07(5). Requirements for pathogens are specified in ch. NR 204.07(6) and in ch. NR 204.07 (7) for vector attraction requirements. Limitations for PCBs are addressed in ch. NR 204.07(3)(k).

PFAS- The presence and fate of PFAS in municipal and industrial sludges is an emerging public health concern. EPA is currently developing a risk assessment to determine future land application rates and expects to release this risk

assessment by the end of 2024. In the interim, the department has developed the "Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS".

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

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

5 Schedules

5.1 WWTP Upgrade

Upon approval of the final construction plans and schedule by the Department and pursuant to s. 281.41, Wis. Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications.

Required Action	Due Date
Initiate Treatment Plant Upgrade: The permittee shall initiate construction of the department approved upgrades.	05/31/2025
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. The progress report shall include a description of the phase of construction, a current copy of the project schedule, and any proposed construction plan amendments or change orders that would require plan review under s. 281.41, Wis. Stats.	05/31/2026
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. The progress report shall include a description of the phase of construction, a current copy of the project schedule, and any proposed construction plan amendments or change orders that would require plan review under s. 281.41, Wis. Stats.	05/31/2027
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	05/31/2028

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.	05/31/2025

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.	05/31/2026

5.3 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.	12/31/2024

Explanation of Schedules

WWTP Upgrade – The facility will be completing a treatment plant upgrade during the permit term. This schedule is included in the permit to ensure that upgrades are completed by the end of the permit term.

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

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

Land Application Management Plan – A schedule to submit an updated sludge management plan is included in the permit pursuant to s. NR 204.11, Wis. Adm. Code.

Special Reporting Requirements

No special reporting requirements are included.

Attachments:

PFOS and PFOA Water Quality-Based Effluent Limitations for the Seymour Wastewater Treatment Facility -WPDES Permit No. (WI-0021768) in Outagamie County, by Amy Garbe, PE, Wastewater Engineer, dated June 22, 2026

Expiration Date:

May 31, 2029

Justification Of Any Waivers From Permit Application Requirements

No permit application requirement waivers were requested or granted.

Prepared By: Bryan Hartsook Wastewater Field Supervisor

For Fact Check: January 23, 2024

For Public Notice: February 16, 2024

For Re-Public Notice: April 16, 2024

Final: May 28, 2024

Revised By: Sarah Donoughe, Wastewater Specialist-Adv

Date: July 1, 2026

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: June 22, 2026

TO: Sarah Donoughe – NER

FROM: Kari Fleming – WY/3

SUBJECT: PFOS and PFOA Water Quality-Based Effluent Limitations for the Seymour Wastewater Treatment Facility -WPDES Permit No. (WI-0021768) in Outagamie County

This is in response to your request for an evaluation of the need for PFOS and PFOA limitations for the Seymour Wastewater Treatment Facility. This municipal wastewater treatment facility (WWTF) discharges to the Black Creek, located in the Shioc River Watershed in the Wolf River Basin.

The current permit, effective since June 2024, 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: Black Creek
- Classification: Limited Forage Fish community (LFF) community, non-public water supply. Cold Water and Public Water Supply criteria are used for bioaccumulating compounds of concern, because the discharge is within the Great Lakes basin. The LFF classification is from Outfall 001 to the confluence with the Shioc River approximately 11.5 mi downstream.
- Flow: The following 7-Q_{10} and 7-Q_2 values are from USGS for Station W25 or SE ¼, SW ¼, Section 29, T24N – R18E, where Outfall 001 is located:
  7-Q_{10} = 0.04 cfs (cubic feet per second)
  7-Q_2 = 0.07 cfs
  Harmonic Mean Flow = 0.96 cfs using a drainage area of 22.9 mi^2

The Harmonic Mean has been estimated based on average flow and the 7-Q_{10} 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 = 0.578 MGD (million gallons per day)
  For reference, the actual average flow from January 2024 to April 2026 was 0.468 MGD.
- Effluent characterization: This facility is categorized as a minor municipality.

The following table lists the statistics for effluent PFOS and PFOA levels from June 2024 through May 2026.

	PFOS ng/L	PFOA ng/L
1-day P_{99}	5.58	6.71
4-day P_{99}	3.75	4.57
30-day P_{99}	2.43	3.46
Mean*	1..83	2.92

	PFOS ng/L	PFOA ng/L
Std	1.07	1.18
Sample Size	13	13
Range	<1.1-3.3	1.58-4.6

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

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 to s. NR 106.98(4), Wis. Adm. Code. Therefore, the effluent limit for PFOS is set equal to criterion (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 the Black Creek
Qs = 25% of the harmonic mean pursuant s. NR 106.06(4)(c)10., Wis. Adm. Code = 0.24 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 = 0.578 MGD = 0.894 cfs
f = the fraction of effluent withdrawn from the receiving water = 0

After substituting the appropriate variables, the calculated PFOA limit is 161 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 (161 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: 6/22/26

Amy Garbe, P.E., Wastewater Engineer

cc: Barti Oumarou, Basin Engineer – NER/Oshkosh
Nate Willis, P.E., PFAS Implementation Coordinator – CO

Attachment 1 – PFOS P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -			
=	= =	=	=
SUBSTANCE:			
NUMBER OF VALUES:	------		
TOTAL	13		
DETECTED	11		
NON-DETECTED	2		
d	0.153846		
m	2.160636		
mean of all data	1.828231		
s	1.068836		
	------	------	------
n	1	4	30
d^n	0.153846	0.00056	4.1E-25
p	0.988182	0.989994	0.99
Z_p	2.26343	2.326575	2.326785
1+(s/m)^2	1.244714	1.244714	1.244714
(sigma_d)^2	0.218906	0.218906	0.218906
mu_d	0.66095	0.66095	0.66095
(sigma_dn)^2	0.218906	0.110763	0.015579
mu_dn	0.66095	0.548528	0.595559
P_99 exponent	1.719949	1.322837	0.885978
	-------	-------	-------
P_99	5.58	3.75	2.43
	-------	-------	-------

Data Summary	
Jun-24	3.2
Jul-24	1.86
Jul-24	3.3
Sep-24	2.5
Nov-24	2.1
Jan-25	1.06
Mar-25	1.3
May-25	1.57
Sep-25	4.34
Dec-25	0.957
Jan-26	<1.09
Mar-26	<1.2
May-26	1.58

Attachment 2 – PFOA P99 Calculation

EFFLUENT VARIABILITY ANALYSIS -				
=	= =	=	=	
SUBSTANCE:				
NUMBER OF VALUES:	------			
TOTAL	13			
DETECTED	13			
NON-DETECTED	0			
d	0			
m	2.923077			
mean of all data	2.923077			
s	1.184514			
	------	------	------	
n	1	4	30	
d^n	0	0	0	
p	0.99	0.99	0.99	
Z_p	2.326785	2.326785	2.326785	
1+(s/m)^2	1.16421	1.16421	1.16421	
(sigma_d)^2	0.152043	0.152043	0.152043	
mu_d	0.996615	0.996615	0.996615	
(sigma_dn)^2	0.152043	0.040232	0.005459	
mu_dn	0.996615	1.052521	1.069907	
P_99 exponent	1.903891	1.519227	1.241818	
	-------	-------	-------	
P_99	6.71	4.57	3.46	
	-------	-------	-------	

Data Summary	
Jun-24	4.6
Jul-24	2.89
Jul-24	3.8
Sep-24	5.3
Nov-24	4.2
Jan-25	2.17
Mar-25	2.79
May-25	2.64
Sep-25	2.1
Dec-25	2.13
Jan-26	1.58
Mar-26	1.67
May-26	2.13