



OFFICIAL NOTICE & AGENDA REGULAR MEETING

MEETING: Wausau Water Works Commission
DATE/TIME: Tuesday, December 2, 2025 at 11:00 AM
LOCATION: Wausau City Hall – Council Chambers
407 Grant Street, Wausau WI, 54403

MEMBERS:
Mayor Doug Diny (P) Sarah Watson
Jim Force Deb Hadley
Peter Gelhar

1 Consideration of the minutes of the preceding meeting(s).

October 7, 2025 Regular Wausau Water Works Commission Minutes

2 Director's Report on Utility Operations.

- a. Update on LSL 2025 Construction & 2026 Funding
- b. Update on the Solar Array Project and Next Steps
- c. Wastewater- Update on PFAS Test Results for Effluent and Biosolids
- d. Wastewater- Headworks Screening Project Update
- e. Wastewater- Cherry Street Lift Station Project Update

3 Discussion and Possible Action.

- a. Approving the Lead Service Line Replacement (LSLR) Reimbursement Resolution for the 2026 Safe Drinking Water Loan and Principal Forgiveness.

4 Discussion and/or Updates.

- a. On Construction Updates and Safe Drinking Water Loan Status Update for the Granular Activated Carbon and PFAS Treatment Project.
- b. On the Proposed WPDES Draft Permit for the Wastewater Treatment Facility.

5 Adjournment.

**Next meeting scheduled for January 6, 2026 @ 11:00 AM.*

Mayor Doug Diny, President

NOTICE POSTED AT CITY HALL (407 GRANT STREET) AND
TRANSMITTED TO THE OFFICIALLY DESIGNATED NEWSPAPER

DATE: 11/26/2025

TIME: 1:45 PM

POSTED BY: Wausau Water Works



This meeting can be viewed on
YouTube and Channel 981 on Cable TV

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City of Wausau
(715) 261-6500 | clerk@wausauwi.gov
wausauwi.gov





Minutes of October 7, 2025

A meeting of the Wausau Water Works Commission was called to order at 11:01 a.m. in City Hall on Tuesday, October 7, 2025. In compliance with Wisconsin Statutes, this meeting was posted and receipted by the Wausau Daily Herald on October 3, 2025.

Members Present: President Diny, Commissioners Force, Watson, Hadley, Gelhar
Others Present: Eric Lindman, Scott Boers, Ben Brooks, MaryAnne Groat

1) Approve Minutes of September 2, 2025 Meetings.

Hadley motioned to approve minutes. Seconded by Gelhar.
Motion carried 5-0.

2) Director's Report on Utility Operations.

Lindman highlighted update on 2025 Lead Service Line (LSL) loan closing date of November 26th with anticipation to council for approval on November 11th. The 2024 loan didn't close until June 2025, so we're doing a little better with the DNR this year. Construction's a little behind on 2025 LSL replacements, they're bringing in another crew continuing through most of November into December if needed and weather permitting, replacing more services than we thought, proposed around 1,500 they're a little over 1,600, by end of this year will be about 2,300. Another update for 2025/ 2026 funding for the LSL was the discussions we've had with DNR on how they're determining what non-construction funding we could have and the limits. I brought a resolution to city council to get support to have the DNR not restrict our non-construction related activities because of the incredible effort it takes for outreach, getting into people's homes, getting this organized, above and beyond a normal construction project. The DNR did not change their determination so they are restricting our non-construction related activities such as public outreach and communication. I've reached out to other entities, legislators and Governor's office and USEPA, the letter is in the packet sent along with the council resolution and copied the DNR in it as well. The meeting I had with them, I let them know I would be sending out a letter from City of Wausau. I received acknowledgement from the EPA that they received the letter and would be reviewing it but haven't received any further response from them at this time. I was encouraged when I received the response a day later from Administrator Kramer's office saying they would be reviewing it, usually when I send it to the Federal side, I don't really get response necessarily. I also received a phone call from Tom Tiffany's office, they provided a specific email to send and said they'd be reviewing it as well. Jenni Dye, the Director of Policy at the Governor's office also received it, she knew it was coming as we've had previous discussions with her as well.

Diny added we've had other contacts with them trying to free up funding, we're getting better cost per unit installation, it could be translated that our outreach has made it easier to gain access, it's a good case to be made.

Force questioned if the area legislators were copied in this letter, if there were any response from their offices, if there were penalties with the spill at Wastewater and how we assess the

success of public outreach via contractors?

Brooks replied we were issued a letter of non-compliance for the overflow but there were no punitive damages, it was a closure letter stating no further action required so it's considered closed at this time as stated in the memo, it ended up in the retention pond at DPW's parking lot where wastewater and collection staff spent hours cleaning and jetting storm sewers appropriately and disposed of. The retention pond was designed for storm water, it doesn't surcharge pipe going out to Wisconsin river, it has a 5- or 6-foot tall overflow where it'll surcharge the pond and flow in but it didn't come near that overflow.

Lindman replied we're over 98% in acceptance with the right of entry agreements, I would say it's been successful.

Director's Report Placed on File.

3) Discussion and Update on EPA Motion to Vacate Regulatory Determinations for PFAS Hazard Index.

Diny recapped this is the moving target we've been talking about.

Lindman began that initially when EPA came out with the PFAS rule, they had 2 mostly researched PFOA/PFOS, then another 6 that they developed a hazard index for, this is confirmation EPA is rolling back that hazard index portion of the PFAS rule at this point, it should be noted that the DNR is still pushing forward with their own rules because they have the authority to do that, DHS has their own recommendations but that hasn't been run through the regulatory process yet. Although EPA is stepping back for more research and investigation on what the hazards are, the DNR sounds like they're going to continue to move forward but there's no timeline on that.

No Action Taken.

4) Discussion and Update on AWWA Petition for Review of the USEPA Lead and Copper Rule Improvements.

Lindman recapped these are brought forward to keep you updated on the regulatory landscape side of things, it's evolving and it's a moving target. As the commission makes decisions for funding certain projects as well as city council, it's one of those things we need to keep an eye on, for one, making sure we're continuing to move forward so we don't fall out of regulation and trying to predict where things will land is very difficult at this point.

Diny replied, it's safe to say we are a bit ahead of the game on what others are trying to deal but we don't want to be so far ahead that we're spending money we don't have to yet, it's balancing.

No Action Taken.

5) Discussion and Update on Water Meter Replacements-to-Date and Estimated Replacements for Future.

Boers updated where we are at with meter replacements so far this year, we have a bit over 2,000 meters replaced, a little over 6,000 that need to be replaced to complete the system. There's a budgetary number in there for meter pricing and failure rates we are seeing. The PSC (Wisconsin Public Service Commission) who regulates the water utility has set a rate of 91% that we're supposed to be accurate with our meters, 39% failed to meet that accuracy rate, so they're registering less than 91% of the water that goes through them, our cash registers are old, worn out and need to be replaced. We want to keep our rates low and maximize our revenue, we'll need to replace these out.

Watson questioned how many of the 6,000 meters we still need to replace were 5/3" and if the larger portion of the ones we still have to replace were about 40% fail rate?

Boers replied the majority of them are 5/3" meters..

Force stated we've installed 2,000 and with 6,000 to go, we've done about 25%, have we seen any impacts as well as our water loss, leakage in the system and how we're addressing that?

Boers replied, we have 17,000 meters in the system, roughly 11,000 meters have been replaced. It's hard to judge that because we are seeing some revenue increases but we've also had a rate case 3 years ago and fluctuations in water usage with the wet year we've been having, water usage is down, it's hard to judge year to year, I'd like to do more analysis but I'd like to get more meters changed out first.

Diny stated hopefully our water loss number on our annual report goes into single digits and that would be an indicator but there's leakage and under reporting so there's both.

Watson questioned we're short 1,000 meters, it'd be nice to get those that were failing or more likely to fail that would recoup more potential, so it's a combination of the 1,000 meters we're short of the other kind along with prioritizing the changeout to the older meters, the household ones, betting the pivot table for that looks amazing, lead service line, meter type, age, it's a cool way to attack it.

Boers replied we're also short on radios with the 5/3" meters. Our larger meters are on a more frequent change out, the 6"-8" meters get changed out every year, the 3"-4" meters every 2 years, as the meter gets smaller, the longer duration because they don't make that much of an impact if they're inaccurate. The household meters are what we have most, so of the 17,000 roughly 12,000 of them would be household meters, meters we need to change out. Although it sounds odd, the 5/3" is a 3/4" meter with 5/8" couplings, it was something installed originally in our system so those couplings, fittings haven't been maintained. We're also short staffed so it's hard to make a robust change out schedule, our administrative assistants were contacting homeowners setting up appointments to preemptively change out the meters. We're starting at the oldest meters moving to the newer meters. The meters we have were only supposed to be in the system for 10 years, some of them are approaching 20-30 years, in the past they've just haven't been changed for whatever reason, usually economics, when the budget was short, they wouldn't buy meters to change them out. We are prioritizing the older ones, then we started with the lead replacement program with a technician changing out those meters, then we found we were cross referencing a bunch of them, a lot of our older meters and with the LSLs that were older so we're letting those run out, we were going to try to chase meters that were on the outlying areas of the town where copper services were more prevalent then we wouldn't have a cross reference of efforts. We're changing them with the LSL projects and doing them outside the program as well.

Force questioned the status of the big users' meters because the large failing meters would be a lot of water we may not be billing.

Boers replied as mentioned, the PSC regulates those, so the larger meters get tested more frequently 6"-8" annually, 3"-4" every 2 years, 1 1/2"- 2" every 4 years, those are on a more frequent rotation. We are on top of those but homes are hard to get into, poor Michelle, she has to deal with people that haven't allowed people in their homes since 1982 for a meter change.

No Action Taken.

6) Discussion and Possible Action Approving 2026- 2030 Capital Budgets for Drinking Water and Wastewater.

Lindman kicked off that capital budget for the city, infrastructure budget with all the streets and non-street work costs do not include water and sewer because those are shown in the water/sewer budget. A lot of our street costs take up our capital expenditures for water and wastewater divisions, you'll see our projects specific for the utility not necessarily tied to street projects. Drinking water division is a little skewed because we're showing LSL and I tried to break down those total costs at the bottom, in the green you could see without LSL what our typical borrowing would be for the utility and then with the LSL borrowing because of principal

forgiveness.

Force questioned what 2027 would cost us, I see the total, but then I see the LSL amount and then I see without the LSL, \$2.5 million, so our cost is \$12 million, I'm not an accountant?

Lindman replied the total borrow amount, let's say 2027 would be \$9.5 million with the LSL that's the estimated amount. So, our normal projects, we're going to borrow \$2.5 million, if we move forward with the LSL in 2027, we'd anticipate another \$9.5 on top of that.

Diny recapped its \$7 million on top of \$2.5 million so that's \$9.5 million.

Force questioned if the meters were budgeted for the remaining?

Watson questioned if the solar project would be proposed in this budget and with the 2026-meter budget of \$200,000, we'd need about \$500,000 to have the new meters and the \$100,000 is like the maintenance Mayor was mentioning, why did we underestimate, we don't want to overestimate but we should accurately estimate that? Would this be updated to about \$480,000 and would we be able to have all the meters replaced by the end of 2026 with labor constraints or a little projection out for ending of 2027 spreading that expense over 2 years?

Lindman replied solar would be under general obligation with the city. The meters were budgeted at \$200,000, we're obviously going to need more than that next year with the amount of LSL and other replacements we want to do with meters and radios, so usually this budget comes back to the commission with revisions in the capital depending on how projects shake out when we start getting bids in February or March for street projects and seeing where those costs lie. We were working with Groat on that and thought we had some additional funding from previous years but we didn't, so this was put in the capital budget, we just found that out a week and half ago, so we haven't changed this. It would be updated once we start getting bids for projects.

Boers replied ultimately I don't think it's possible to be completed end of 2026, 6,000 meters are a lot when you start talking 220-240 working days in a year also depending on LSL replacements but it won't be possible to be complete and it would be helpful to bring in a couple more staff as well.

Lindman continued with Wastewater, we've been trying to replace a lift station or upgrade one lift station per year, the next lift station proposed in 2026 is expensive estimated at \$1.7 million with a couple of other projects, we are trying to do manhole rehabilitation, hydrogen sulfide repairs within the sanitary sewer system where hydrogen sulfide typically erodes some of our concrete pipe and manholes.

Watson questioned what sliplining sewers meant, nothing in 2026 then it's a continued expense for the coming years? Is the slipline thing a constant replacement?

Lindman replied that's where they line old sewers with steam or other technology curing a synthetic liner to the inside of the pipe, they'll put in a thin liner that puts a hard lining in the sanitary sewer so you don't have to excavate it, it's a trenchless option. We bid out a project for sliplining and had some previous year carryover budgets, we expected bids it to be a lot higher than actual costs. We're carrying over those funds to do some other work in 2026, we kept our interceptor line hydrogen sulfide repairs. We think we could get that done.

Brooks replied sliplining targets areas of re-laying the sewers with a protective coating but could only do so many feet per year. This year we'll be at Sturgeon Eddy Rd, they'll be sliplining and repairing the sewer in that area. The sewer laterals are shifting so that'll be fixed, secured and relined, it's expensive but eliminates an open/cut disruption in the neighborhood and roads, it's an alternative method used.

Lindman replied those lines are televised to make sure they're adequate candidates for sliplining, if the lines are oblong or settled or have lots of other issues, we can't line them because the liner will not hold, we have that scheduled with our 5-year reconstruction plan, so if the street is within the 5 year plan, we won't line those sewers because they'll be replaced. Same thing with water mains, if we know we're going to replace the water mains at some point, we'll hold off

lining the sewer because typically the water and sewer are driving our street reconstruction projects. We have a project off Hamilton next year for a water main leak that goes behind homes, it's a tough spot to get to so some of the carryover funds will be used to replace the sewer as well because they're both in the same trench. You'll see this again in the next 3-4 months.

Watson motioned to approve 2026-2030 capital budgets for Drinking Water and Wastewater. Seconded by Hadley.

Motion carried 5-0.

7) Discussion and Possible Action Approving Grant Submission to USEPA for the Solar Array Project at 1010 Bugbee Ave.

Lindman advised this was brought to city council, they asked if we were going to apply for grants that would impact city budget that we bring them forward, being that it was under general obligation debt under the levy, I brought it to finance but also here because if the solar array is constructed, it would be connected to the water utility. Groat and I have been working on this grant as well as some leftover consultant fees with ClarkDietz during solar planning design investigation. Up to \$1.18 million, the estimated cost of the project is \$2.5 million. The challenge with this project is that the tax credits are essentially going away, so for us to meet the timelines, we must begin construction before July 1, 2026. A lot has to be done simultaneously as we move forward in 2026, we have the concepts put together and 25-30% design put together, there will be additional work put into, for us to bid, get the contract awarded, signed, establish a construction date before we find out what happens on this grant. That will be decided by city council to fund the project or allow that to happen, the full \$2.5 million and then any additional funding from outside sources, whether its tax credits, or this grant would be less borrowing next year. The city won't borrow till June/July. If we start before July, it has to be done before 2030, after July 1, it has to be done end of 2027 which I don't know that we could do that with the type of materials, American made and all the regulatory material compliance requirements.

Watson reiterated since there are only 6 awards nationwide, we won't know till May 2026 and we'll have to begin construction before July 2026?

Hadley questioned if this has been approved at the council level yet and it's through general obligation but you're bringing it to us because the water facility will get the energy from it because we haven't really seen the financials for this.

Lindman replied it originated from here, all the planning and discussions, task force and just keeping the commission informed but the council has the final decision in this. A lot of sustainability and other things justified for the grant, we have a pretty good case but when you're talking nationwide, you just don't know what you're competing against. As far as grants go, it wasn't too intrusive on staff to get it done but they're never easy.

Diny replied this is for grant submission.

Force motioned to approve grant submission to USEPA. Seconded by Watson.

Motion carried 5-0.

8) Discussion and Possible Action Approving a Part-time Wastewater Lab Technician on the Job Training Program with Outside Funding up to 500 Hours.

Lindman summarized this new training opportunity through workforce development for students but gives us the ability to offset some of the costs. We need help in the lab, these 500 hours would carry us through to summer, this applicant is in a college program through UW.

Diny recapped it'd be temporary not adding to the body, almost like a seasonal help type.

Gelhar pointed out that it's a possibility that we could also add to the pipeline, we've got labor shortages all over the place. The reality is that we got 3% unemployment, labor force participation continues to trend down. I've seen it in workforce development with the private

sector initiatives that are starting to target high school, college age, local talent. I'd like to commend water/wastewater department for taking this on because this could set an example for other departments to take advantage of resources offered through UW and other federal programs.

Force motioned to approve a part-time wastewater lab technician. Seconded by Gelhar.

Motion carried 5-0.

9) Discussion and Possible Action Approving Budget Modification to the 2025 Wastewater Budget.

Brooks summarized that it's a budget modification to carryover unused 2024 budget for the upcoming project on Hamilton replacing 3 manholes and structures of the gravity sewer along with the water department doing their water main at that same time.

Hadley questioned how we came in at so much lower than where we were at?

Lindman replied from past costs we've had but it's hard because certain areas of the city are difficult to work on. This came in a couple hundred thousand less than what we anticipated, I'm not sure this would be a trend but would sure like to see it.

Watson motioned to approve the budget modification carryover of unused 2024 funds. Seconded by Hadley.

Motion carried 5-0.

10) Discussion and Possible Action Approving the Purchase of a UTV and Golf Carts with Funds Received from Assets Sold at Integrity Auction.

Brooks summarized these items would be utilized by employees daily to travel back and forth throughout the stretched-out treatment plant instead of manually carrying out pumps/ heavy hoses, it would get them there faster more efficiently in emergent situations.

Hadley motioned to approve the purchase of a UTV and Golf Carts. Seconded by Gelhar.

Motion carried 5-0.

11) Adjourn.

Watson motioned to adjourn. Seconded by Gelhar

Motion carried 5-0.

Link to view meeting in its entirety: <https://tinyurl.com/wausaucitycouncil>

Gina Vang, Recording Secretary

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Wausau Water Works
Eric Lindman, Public Works Director

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Update on LSL 2025 Construction & 2026 Funding

PURPOSE

Update on LSL Replacements and estimated 2026 funding amounts and schedule moving forward.

BACKGROUND

The LSL replacements continue to move forward. See attached for the 2024 and 2025 funding amounts. LSL replacements from 2024 and 2025 are 2,135 as of November 19, 2025.

Restoration of the sites and roadway continues as we move into winter. For plumber hole patches in the street temporary concrete will be used as the asphalt plants have been shut down for winter. The funding for the 2025 loan/grant closes on Nov 26, 2025 at which time the city will be able to be reimbursed for 2025 expenses. The 2026 funding is an estimate as currently provided by the DNR.

FISCAL IMPACT

RECOMMENDATION

Dept. of Public Works & Utilities



Eric Lindman, P.E.
Director of Public Works & Utilities

TO: Wausau Water Works, Finance Committee & City Council

FROM: Eric Lindman, P.E.
Director of Public Works & Utilities

DATE: December 9, 2025

SUBJECT: WDNR LSL Funding Update – 2024-2026 Update

This memo is an update on the Lead Service Line Replacement (LSLR) project and the funding towards the project. As discussed previously the DNR has been slow to close on funding related to LSLR projects. The 2024 construction season we did not have funding available for reimbursement until June of 2025 and for the 2025 season we are not expecting to have the funding available for reimbursement until Nov 26, 2025. The process has been getting better so the hope is the 2026 funding will be available in June or July 2026.

Below is a tabulation of the funding the City has received to date through the BIL LSL funding:

Wausau LSL Replacement Project				
2024-2026 Principal Forgiveness and Loan				
Funding Year	Principal Forgiveness		Loan	Total
FY2024 Funding	\$2,749,435		\$2,172,756	\$4,922,191
FY2025	\$9,949,435		\$5,756,229	\$15,705,664
FY2026 (Estimate)	\$11,332,910.00		\$7,646,998.00	\$18,979,908
Total to Date =	\$24,031,780		\$15,575,983	\$39,607,763

The city has been doing very well in receiving significant Principal Forgiveness loans, which has eliminated the cost to the homeowner for LSLR construction. In summary we are proposing to complete \$40 million worth of work for \$16 million of very low interest loan; that is 60% grant for the work being completed, both public and private side. This program and project delivery we have put together has shown to be successful



Wausau Water Works
Eric Lindman, Public Works Director

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Update on the Solar Array Project and Next Steps

PURPOSE

Water treatment facility solar array project update

BACKGROUND

The project was approved by the City Council in the 2026 budget. It is proposed, as approved by city council, the project funding will be borrowed using general obligation debt. The estimated cost of the project is \$2.8 million. In order for the project to receive a minimum of the 30% tax credits construction needs to begin prior to July 4, 2026, a very tight timeline for design, bid, and scheduling construction. A sole source request will be brought forward to the Finance Committee on Dec 9, 2025 to use Clark Dietz as the design engineer in order to begin design and layout immediately. Bidding will be proposed in February with a contract award in early April for construction start when weather permits.

The city has also submitted a USEPA grant and we will not hear if we are awarded the grant until May 2026. The initial estimate for this project back in 2021 was about \$2 million. Over the past 5-years the costs have gone up with a recent estimate of \$2.8 million. The tax credits have become more cumbersome to receive with more requirements so hiring a consultant like Clark Dietz who is familiar with the requirements and can assist us with navigating the "red tape" and "triplicate forms" is very beneficial. We would anticipate this project will be up and generating power in late 2026.

FISCAL IMPACT

RECOMMENDATION



Wausau Water Works
Ben Brooks, Wastewater Superintendent

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Wastewater- Update on PFAS Test Results for Effluent and Biosolids

PURPOSE

Wastewater- Update on PFAS Test Result for Effluent and Biosolids.

BACKGROUND

See attached.

FISCAL IMPACT

RECOMMENDATION

WAUSAU WASTEWATER: INFLUENT, EFFLUENT & BIOSOLIDS PFAS TESTING									
				< 20 ng/L (ppt)= WDNR proposed limit	< 8 ng/L (ppt)= WDNR proposed limit			< 16 ng/g (ppb)= no further action required by WDNR	2/15/24 DNR Guidance
								< 20 ng/g (ppb)= no further action required by WDNR	
Wk. Day	Sample Date:	Influent PFOA: ng/L	Influent PFOS: ng/L	Effluent PFOA: ng/L	Effluent PFOS: ng/L	Biosolids: PFOA (ng/g)	Biosolids: PFOS (ng/g)	Biosolids: Combined PFOA & PFOS: ng/g (ppb)	DRYER: ON/OFF
DNR Tested	1/5/2021			14.8	8.48				
Tues.	10/24/2023	4.68	6.3	5.86	7.81	0.744	7.06	7.8	OFF
Thurs.	11/30/2023	4.8	8.91	7.73	34 (sampling contamination?)	0.561	7.78	8.3	ON
Wed.	12/20/2023	4.67	6.36	6.68	6.74	1.00	10.3	11.3	OFF
Mon.	1/22/2024	6.11	22.6	5.73	4.91	0.755	7.72	8.5	OFF
Tues.	2/27/2024	5.84	6.03	7.39	5.41	0.352	5.94	6.3	OFF
Mon.	3/25/2024	10.1	8.98	8.83	4.48	1.04	5.87	6.91	OFF
Wed.	9/10/2025	N/A	N/A	9.33	7.18	0.529	6.63	7.159	OFF

Results should be inconclusive. Quality Control error on Lab COC form.



Wausau Water Works
Ben Brooks, Wastewater Superintendent

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Wastewater- Headworks Screening Project Update

PURPOSE

Wastewater- Headworks Screening Project Update

BACKGROUND

- Ahern & Subcontractors mobilized June 16, 2025, with substantial completion set for October 15, 2026, and a final completion date of November 15, 2026.
- Waiting on new Hydrodyne Screens — expected delivery date is December 1, 2025.

FISCAL IMPACT

RECOMMENDATION



Wausau Water Works
Ben Brooks, Wastewater Superintendent

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Wastewater- Cherry Street Lift Station Project Update

PURPOSE

Wastewater- Cherry Street Lift Station Project Update

BACKGROUND

- Contractor (Integrity) Mobilized on site September 8, 2025 with substantial completion set for January 31, 2026 (new lift station operating with demo work completed) and a final completion date of May 15, 2026. (all work complete with grass actively growing)
- Project is at a standstill until new equipment arrives mid-December, 2025.

FISCAL IMPACT

RECOMMENDATION



Wausau Water Works
Eric Lindman, Public Works Director

DATE: December 2, 2025
TO: Wausau Water Works Commission
SUBJECT: Approving the Lead Service Line Replacement (LSLR) Reimbursement Resolution for the 2026 Safe Drinking Water Loan and Principal Forgiveness.

PURPOSE

2026 LSL estimated funding amount and reimbursement resolution. This resolution ensures the city/utility will be reimbursed for expenses prior to formal loan documents being prepared by the DNR.

BACKGROUND

FISCAL IMPACT

RECOMMENDATION

RESOLUTION OF THE WAUSAU WATER WORKS COMMISSION

Resolution Declaring Official Intent to Reimburse Expenditures from the Safe Drinking Water Revolving Loan Program for the BIL SFY26 LSL Program in Year 2026.

Committee Action:

Fiscal Impact: Reimbursement of the cost of professional services and construction services in the amount of up to \$18,979,908.00.

File Number:

Date Introduced:

FISCAL IMPACT SUMMARY

COSTS	Budget Neutral	Yes ☐ No ☒	
	Included in Budget:	Yes ☐ No ☒	Budget Source:
	One-time Costs:	Yes ☒ No ☐	Amount: \$18,979,908.00
	Recurring Costs:	Yes ☐ No ☒	Amount:
SOURCE	Fee Financed:	Yes ☐ No ☒	Amount:
	Grant Financed:	Yes ☒ No ☐	Amount: \$11,332,910 (DNR Estimate)
	Debt Financed:	Yes ☒ No ☐	Amount: \$7,646,998 (Estimate) Annual Retirement
	TID Financed:	Yes ☐ No ☒	Amount: TBD
	TID Source: Increment Revenue ☐ Debt ☐ Funds on Hand ☐ Interfund Loan ☐		

RESOLUTION

WHEREAS, the City of Wausau, Marathon, County, Wisconsin (the “Municipality”) wishes to undertake a project utilizing the BIL SFY26 Lead Service Line (LSL) Program funding in year 2026, identified as DNR Project No. 4930-26 (the “Project”); and

WHEREAS, the Municipality expects to finance the Project through a combination of grants, forgivable loans and/or by issuing tax-exempt bonds or promissory notes (the “Bonds”); and

WHEREAS, because the grants, forgivable loans and/or Bonds will not be issued prior to expenditure of funds on the Project, the Municipality must provide interim financing to cover costs of the Project incurred prior to receipt of the proceeds of the grants, forgivable loans and/or Bonds; and

WHEREAS, it is necessary, desirable, and in the best interests of the Municipality to advance moneys from its funds on hand on an interim basis to pay the costs of the Project until the grants, forgivable loans and/or Bonds are issued; and

NOW, THEREFORE, BE IT RESOLVED by the Common Council of the City of Wausau, that:

Section 1. Expenditure of Funds. The Municipality shall make expenditures as needed from

its funds on hand to pay the costs of the Project until the grants, forgivable loans and/or Bond proceeds become available.

Section 2. Declaration of Official Intent. The Municipality hereby officially declares its intent under Treas. Regs. Section 1.150-2 to reimburse said expenditures with proceeds of the grants, forgivable loans and/or Bonds, the principal amount of which is not expected to exceed \$18,979,908.00.

Section 3. Unavailability of Long-Term Funds. No funds for payment of the Project from sources other than the grants, forgivable loans and/or Bonds are, or are reasonably expected to be, reserved, allocated on a long-term basis, or otherwise set aside by the Municipality pursuant to its budget or financial policies.

Section 4. Public Availability of Official Intent Resolution. This Resolution shall be made available for public inspection at the City Clerk's office within 30 days after its approval in compliance with applicable State law governing the availability of records of official acts including Subchapter II of Chapter 19, *Wisconsin Statutes*, and shall remain available for public inspection until the grants, forgivable loans and/or Bonds are issued.

Section 5. Effective Date. This Resolution shall be effective upon its adoption and approval.

Passed and adopted this ____ day of _____, 2026.

Approved:

Doug Diny, Mayor

Memorandum

Date: November 24, 2025

To: Eric Lindman
Scott Boers

Copy: Water Works Commission

From: Susan Wojtkiewicz

Re: City of Wausau
Drinking Water Treatment Facility
PFAS Treatment

The Drinking Water Treatment Facility PFAS Treatment has been operational for one year. This memo provides an update on the status of construction completion, project budget and future operational needs for PFAS treatment pertaining to replacement of granular activated carbon (GAC).

Status of Construction

Construction of the PFAS Treatment commenced in July 2023. The original completion dates for the contract were October 12, 2024 for substantial completion and November 11, 2024 for final completion. Additional time was allowed for the contractors to address a challenge in obtaining safe bacteriological samples from one of the twelve treatment vessels and the PFAS treatment system went online in November 2024. Some aspects of construction, such as change out of the third filtered water pump, to be completed after the substantial completion deadline. Changes in chemical availability also required that the polymer chemical system installation was postponed until after substantial completion. The final completion deadline was adjusted with change orders to allow completion of this work.

Following startup of the PFAS Treatment system, leakage of air release valves on the twelve PFAS treatment vessels was observed. After several months of investigation and research, Aqueous Vets, City staff, engineers and contractor were able to identify replacement air release valves. The 24 replacement valves were installed in November 2025 at no cost to the City. The project team is working to correct three valves that continue to show some leakage.

At this time, the PFAS Treatment system and associated filtered water pumps are fully operational, as is the polymer treatment system. In addition to the correction of the leaking air release valves, there are several outstanding construction issues that are in the process of resolution. The table below lists each issue, the anticipated timeline for completion and cost implication.

Description/Work to be Performed and Reason	Possible Cost Implication for City	Timeline for Completion
Correction of leaking air release valves on three PFAS treatment vessels	No cost – vendor responsibility	By 12/31/25
Coating of floor and sump in Structure 120: One area of flooring in the PFAS Treatment building was damaged when the contractor had to utilize a caustic wash to obtain safe bacteriological samples for one PFAS treatment vessel. Coating the floor with protective material will fix the damaged area and protect concrete in case that future caustic washes are required during GAC changeout.	Contractor will cover cost of damaged floor; cost to City is estimated at \$93,725 and is eligible for funding by WDNR Safe Drinking Water Loan (SDWLP)	Early 2026 with schedule to be defined in final project change order.
Filtered Water Pump Excessive VFD Capacitance (RFP 029): Allow operation of all three filtered water pumps under emergency power conditions	\$6,898 and is eligible for funding by WDNR SDWLP	By 12/31/25
Process Waste Tank Coating Repair: Correct damage to interior tank coating that resulted from coring into tank to connect piping to PFAS Treatment building	Maximum \$70,750 with cost shares in negotiation; eligible for SDWLP funding	Beginning December 8, 2025
Adjustment to actual cost of testing, per contract conditions	-\$691	Testing is completed

Contractors are developing schedules for the process waste tank coating repair and floor and sump coating. Engineer is requiring them to provide firm deadlines that will be incorporated into Change Order 7 to be considered by the Board of Public Works in December.

Project Construction Budget

The original contract with Ellis Construction was for \$15,038,286. A 5% contingency (\$751,914) was provided through the SDWLP. The table below provides a summary of the construction costs to date with the remaining contingency.

Change Order and Amount		Total Ellis Contract with Change Order	Contingency Remaining
Contract	\$ 15,038,286.00	\$ 15,038,286.00	\$ 751,914.80
Change Order 1	\$ 128,446.00	\$ 15,166,732.00	\$ 623,468.80
Change Order 2	\$ 123,792.00	\$ 15,290,524.00	\$ 499,676.80
Change Order 3	\$ 124,209.00	\$ 15,414,733.00	\$ 375,467.80
Change Order 4	\$ 34,301.00	\$ 15,449,034.00	\$ 341,166.80
Change Order 5	\$ (484,101.00)	\$ 14,964,933.00	\$ 825,267.80
Change Order 6	\$ 119,751.00	\$ 15,084,684.00	\$ 705,516.80
Change Order 7	\$ 170,682.00	\$ 15,255,366.00	\$ 534,834.80
Gate (not in Ellis contract)	\$ 16,069.00		\$ 518,765.80

Future Operational Needs for PFAS Treatment: GAC Replacement

DWTF staff have been monitoring PFAS levels in the treatment vessels and Donohue has developed breakthrough curves to help predict breakthrough of PFAS in the treatment system. Replacement of

GAC will need to begin in 2026 and will allow DWTF to develop a process and cadence for media changeout before the EPA recommended standards go into effect.

WDNR has indicated that GAC can be reactivated using a custom segregated reactivation program whereby GAC from Wausau treatment system is removed from vessels, reactivated and returned to the vessels. The Wausau GAC will be tracked and segregated from any other GAC. This reactivation strategy is less expensive than replacing the GAC with virgin carbon. City and Donohue staff have met with several vendors that provide custom segregated reactivation and are developing procurement documents.



To: Wausau Waterworks Commission

From: Ben Brooks, Wausau Waterworks-Wastewater Superintendent

Date: December 2, 2025

Subject: Draft Wisconsin Pollutant Discharge Elimination System (WPDES Permit) received.

Dear Commissioners,

The Sewer Utility received its draft WPDES Permit on November 3, 2025 from the WDNR. The WPDES Permit the Treatment Facility has been operating on expired on December 31, 2023. WDNR requires a Wastewater Treatment Facility to continue its operations based on the expired permit limits until a new permit has been approved and reissued.

The approval process for the reissuance of a new permit is a three-step process.

- 1.) **Initial quality control check period:** WDNR allows ten days for the City to review the draft WPDES Permit and supporting documents, Fact Sheet and (WQBEL) Water Quality-based effluent limits Correspondence Memorandum. This period is used to review and identify any errors noted before continuing onto the next steps of the permitting process. WDNR reviews quality control check comments and if the WDNR agrees with the identified errors, and they are factual, they will reissue a new draft permit reflecting these changes prior to moving onto the next step of the permitting process.

- A. (MEG) Municipal Environmental group reviewed and provided comments. Please reference email correspondence from MEG dated 11-10-25.

In MEGS review below, they've highlighted in some detail, their comments on Wausau's draft permit for the City's consideration. The new items relate to PFOS/PFOA monitoring, phosphorus updates, WET testing updates, PFAS compounds monitoring in biosolids, E. Coli replacing fecal coliform, mercury limit updates, and total nitrogen monitoring.

1. **PFOS/PFOA.** Like most permittees, Wausau is being required to monitor for PFOS and PFOA starting this permit cycle, with monitoring required every two months. The sample type is listed as grab. You also have an option of choosing continuous sampling, but our understanding is that grab samples are more convenient for PFAS testing and obviate the need for as many field blank tests. The permit also includes requirements for a PFAS minimization plan determination of need, which is also standard in permits we are seeing reissued with PFAS monitoring requirements. Whether you need to implement that plan will depend on the sampling results collected over the next two years.
2. **Phosphorus.** The total phosphorus concentration limit of 1.0 mg/L and monthly average TP mass limit of 34 lbs/day is effective in this permit, in order to comply with requirements of the Wisconsin River TMDL. It appears that these limits became effective during the last permit term, and that Wausau can meet them.
3. **WET testing.** The new permit does not impose WET limits, which is very positive, as we are seeing more and more WET limits included in permits as a result of how reasonable potential is calculated. As a major municipal discharger, chronic and acute WET testing will be required annually.
4. **Biosolids monitoring for PFAS.** DNR began including annual PFAS monitoring requirements for biosolids in reissued permits. Like all other permits we've seen, Wausau is being required to sample for the full range of PFAS compounds based on DNR's list of PFAS compounds. EPA recently released a draft risk assessment regarding PFAS in biosolids—we may see some revisions to how DNR handles potential PFAS in biosolids following that EPA assessment, but your permit is unlikely to change for the next five years.
5. **Biosolids sampling.** We understand Wausau is constructing an upgrade to its biosolids treatment process to produce Class A biosolids. To facilitate the reuse of biosolids, the new permit adds additional sample points and outfalls.
6. **Mercury.** Based on sampling data, the new permit removes the mercury limit and replaces it with monthly monitoring requirements and PMP reporting obligation in 2029. It appears that Wausau is not at risk of violating the water quality standard of 1.3 ng/L for Mercury, based on the calculations in the factsheet. However, if Wausau has concerns about the mercury levels in its effluent, you should raise that with your permit consultant to see whether you should be reapplying for a mercury variance. If you do not receive a continued variance in this permit, you will not be able to reapply for one at the next reissuance if you have an issue meeting the surface water quality standards.
7. **E coli.** Permittees are being required to largely transition from fecal coliform to E. coli limits based on rule changes that went into effect in 2020. The limits for E. coli, which are incorporated to protect recreational use standards, apply during the standard recreational use disinfection season of May – September. This is very positive, as we have recently seen many permittees with extended disinfection requirements. Monitoring requirements for E. coli remain at the same frequency that fecal coliform monitoring was required, so we don't expect this update to be too onerous. Wausau is not getting a compliance schedule for E. coli, but you should certainly raise this with DNR if you believe you need one.

8. **Total nitrogen monitoring.** As a major municipal discharger, Wausau is being required to monitor for total nitrogen on a quarterly basis. This is a standard requirement across permits.
- B. City reviewed and provided comment back to WDNR. Please reference email correspondence between Ben Brooks and WDNR dated 11-12-25. Some minor error's were noted and changed, but the main topic of concern was status of the Class A Biosolids approval letter.

The City has been waiting for final Class A Biosolids approval from the WDNR Biosolids Coordinator, Fred Hegeman, for more than two years. All required information has been submitted to Fred Hegeman for his review with no action taken by Fred. As stated in the email correspondence on 11-12-25 with Angela Parkhurst, "Also note that Fred will be reaching out to you to clarify the Class A sludge approval process". This prompted a response from Fred to the email chain, but also prompted a private email response to Ben Brooks from Fred stating that "I am working on the Class A treatment process approval letter at the moment and I am hoping to get this out yet today if I can avoid additional other topic interruptions."

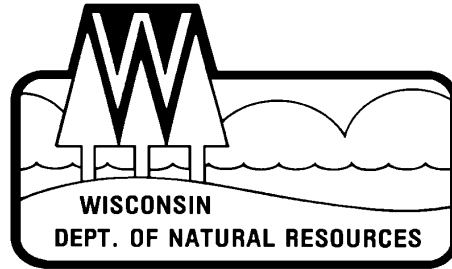
If the Class A Biosolids approval letter is not received from Fred by the time the new permit is reissued, the WDNR will be required to reopen the existing permit and perform a permit modification at the time Fred issues the approval letter.

- 2.) **Public Notice period.** The public notice period allows a thirty-day period in which the public and/or City may submit comment that may contest any factual inaccuracies of the draft WPDES permit and/or supporting documents. The draft WPDES permit and supporting documents will be published on the WDNR website along with being published in the Wausau Daily Herald on November 20, 2025. The public notice period will end at 4:30 pm on December 22, 2025.
- Donohue Engineering is currently reviewing all documents.
 - City is currently reviewing all documents
 - Artificial Intelligence will be used to review and highlight the differences between the expired permit and the draft permit.
- 3.) **Final WDNR review and Issuance:** Once the public notice period has ended all comments will be reviewed by the DNR. If the WDNR finds that the comments received are factual inaccuracies, changes will be made on the issuance of the final WPDES Permit.

Best regards,

Ben Brooks

Wausau Waterworks – Wastewater, Superintendent



WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
**PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE
ELIMINATION SYSTEM**

Wausau Water Works

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility
located at

435 Adrian Street, Wausau, WI 54403

to

**the Wisconsin River located in the Lower Eau Claire River Watershed of the Central Wisconsin River Basin in
Marathon County**

in accordance with the effluent limitations, monitoring requirements and other conditions set
forth in this permit.

The permittee shall not discharge after the date of expiration. If the permittee wishes to continue to discharge after this expiration date an application shall be filed for reissuance of this permit, according to Chapter NR 200, Wis. Adm. Code, at least 180 days prior to the expiration date given below.

State of Wisconsin Department of Natural Resources
For the Secretary

By _____
Geisa Bittencourt
Wastewater Field Supervisor

Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - January 01, 2026

EXPIRATION DATE – December 31, 2030

TABLE OF CONTENTS

1 INFLUENT REQUIREMENTS	1
1.1 SAMPLING POINT(S)	1
1.2 MONITORING REQUIREMENTS	1
1.2.1 <i>Sampling Point 701 - INFLUENT TO PLANT</i>	1
2 IN-PLANT REQUIREMENTS	3
2.1 SAMPLING POINT(S)	3
2.2 MONITORING REQUIREMENTS AND LIMITATIONS	3
2.2.1 <i>Sampling Point 104 - Mercury field blank</i>	3
3 SURFACE WATER REQUIREMENTS	4
3.1 SAMPLING POINT(S)	4
3.2 MONITORING REQUIREMENTS AND EFFLUENT LIMITATIONS	4
3.2.1 <i>Sampling Point (Outfall) 001 - EFFLUENT TO WISCONSIN RIVER</i>	4
3.2.2 <i>Sampling Point 601 - WISCONSIN RIVER</i>	11
4 LAND APPLICATION REQUIREMENTS	12
4.1 SAMPLING POINT(S)	12
4.2 MONITORING REQUIREMENTS AND LIMITATIONS	12
4.2.1 <i>Sampling Point (Outfall) 002 - CLASS B CAKE SLUDGE; 003- CLASS B LIQUID SLUDGE</i>	13
4.2.2 <i>Sampling Point (Outfall) 004 - CLASS A EQ SLUDGE DISTRIBUTION; 005- CLASS A EQ SLUDGE STORAGE; 006- CLASS A EQ DUST</i>	19
4.2.3 <i>Sampling Point (Outfall) 010 - CLASS B LIQUID SLUDGE</i>	26
4.2.4 <i>Sampling Point (Outfall) 011 - CLASS A CAKE SLUDGE</i>	28
5 SCHEDULES	30
5.1 MERCURY POLLUTANT MINIMIZATION SUMMARY	30
5.2 PFOS/PFOA MINIMIZATION PLAN DETERMINATION OF NEED	30
6 STANDARD REQUIREMENTS	31
6.1 REPORTING AND MONITORING REQUIREMENTS	31
6.1.1 <i>Monitoring Results</i>	31
6.1.2 <i>Sampling and Testing Procedures</i>	31
6.1.3 <i>Pretreatment Sampling Requirements</i>	31
6.1.4 <i>Recording of Results</i>	31
6.1.5 <i>Reporting of Monitoring Results</i>	32
6.1.6 <i>Compliance Maintenance Annual Reports</i>	32
6.1.7 <i>Records Retention</i>	32
6.1.8 <i>Other Information</i>	33
6.1.9 <i>Reporting Requirements – Alterations or Additions</i>	33
6.2 SYSTEM OPERATING REQUIREMENTS	33
6.2.1 <i>Noncompliance Reporting</i>	33
6.2.2 <i>Flow Meters</i>	34
6.2.3 <i>Raw Grit and Screenings</i>	34
6.2.4 <i>Sludge Management</i>	34
6.2.5 <i>Prohibited Wastes</i>	34
6.2.6 <i>Bypass</i>	34
6.2.7 <i>Scheduled Bypass</i>	35
6.2.8 <i>Controlled Diversions</i>	35
6.2.9 <i>Ammonia Limit Not Needed - Continue to Optimize Removal of Ammonia</i>	35
6.2.10 <i>Proper Operation and Maintenance</i>	35
6.2.11 <i>Operator Certification</i>	35
6.3 SEWAGE COLLECTION SYSTEMS	36

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows	36
6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program	37
6.3.3 Sewer Cleaning Debris and Materials	38
6.4 SURFACE WATER REQUIREMENTS	38
6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit	38
6.4.2 Appropriate Formulas for Effluent Calculations	38
6.4.3 Effluent Temperature Requirements	38
6.4.4 Visible Foam or Floating Solids	39
6.4.5 Surface Water Uses and Criteria	39
6.4.6 Percent Removal	39
6.4.7 E. coli	39
6.4.8 Seasonal Disinfection	39
6.4.9 Whole Effluent Toxicity (WET) Monitoring Requirements	39
6.4.10 Whole Effluent Toxicity (WET) Identification and Reduction	40
6.4.11 PFOS and PFOA Requirements	40
6.5 PRETREATMENT PROGRAM REQUIREMENTS	40
6.5.1 Inventories	41
6.5.2 Regulation of Industrial Users	41
6.5.3 Annual Pretreatment Program Report	42
6.5.4 Pretreatment Program Modifications	42
6.5.5 Program Resources	43
6.6 LAND APPLICATION REQUIREMENTS	43
6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations	43
6.6.2 General Sludge Management Information	43
6.6.3 Sludge Samples	43
6.6.4 Land Application Characteristic Report	43
6.6.5 Calculation of Water Extractable Phosphorus	43
6.6.6 Monitoring and Calculating PCB Concentrations in Sludge	43
6.6.7 Annual Land Application Report	44
6.6.8 Other Methods of Disposal or Distribution Report	44
6.6.9 Approval to Land Apply	44
6.6.10 Soil Analysis Requirements	44
6.6.11 Land Application Site Evaluation	44
6.6.12 Class A Sludge: Fecal Coliform Density Requirement	45
6.6.13 Class A Sludge: Heat Drying Process	45
6.6.14 Class B Sludge: Fecal Coliform Limitation	45
6.6.15 Class B Sludge: Anaerobic Digestion	45
6.6.16 Vector Control: Volatile Solids Reduction	45
6.6.17 Vector Control: Drying Without Primary Solids	46
6.6.18 Vector Control: Drying With Primary Solids	46
6.6.19 Class B Sludge - Vector Control: Injection	46
6.6.20 Class B Sludge - Vector Control: Incorporation	46
6.6.21 Landfilling of Sludge	46
6.6.22 Sludge Landfilling Reports	46
7 SUMMARY OF REPORTS DUE	47

1 Influent Requirements

1.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	Representative composite influent samples shall be taken from the influent channel after the mechanical bar screens and just prior to the PISTA grit removal chamber.

1.2 Monitoring Requirements

The permittee shall comply with the following monitoring requirements.

1.2.1 Sampling Point 701 - INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See 'Mercury Monitoring' permit section.
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	

1.2.1.1 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

1.2.1.2 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

1.2.1.3 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

2 In-Plant Requirements

2.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
104	The field blank shall be collected using standard handling procedures every day that mercury samples are collected at influent and effluent.

2.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

2.2.1 Sampling Point 104 - Mercury field blank

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

2.2.1.1 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wisconsin Administrative Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3 Surface Water Requirements

3.1 Sampling Point(s)

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
001	Representative effluent samples, except those for E. Coli, shall be collected at the disinfection channel prior to disinfection; samples for E. coli shall be collected after disinfection.
601	Temperature and flow of the Wisconsin River shall be monitored for determination of Waste Load Allocation (WLA) limits at Outfall 001. See subsections below for specific monitoring information.

3.2 Monitoring Requirements and Effluent Limitations

The permittee shall comply with the following monitoring requirements and limitations.

3.2.1 Sampling Point (Outfall) 001 - EFFLUENT TO WISCONSIN RIVER

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD ₅ , Total	Weekly Avg	45 mg/L	5/Week	24-Hr Comp	
BOD ₅ , Total	Monthly Avg	30 mg/L	5/Week	24-Hr Comp	
WLA BOD ₅ Discharged	Daily Max - Variable	lbs/day	5/Week	Calculated	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD ₅ ' below.
WLA BOD ₅ Value		lbs/day	5/Week	24-Hr Comp	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD ₅ ' below.
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Nitrogen, Ammonia (NH ₃ -N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit Effective May through September annually.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit Effective May through September annually. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See mercury monitoring section below and Schedules section.
Cadmium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		µg/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Pentachloro- phenol		µg/L	Monthly	Grab	
Silver, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		µg/L	Monthly	24-Hr Flow Prop Comp	
Hardness, Total as CaCO ₃		mg/L	Monthly	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	34 lbs/day	5/Week	Calculated	See TMDL permit section.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL permit section.
Phosphorus, 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. See TMDL permit section.

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	
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.
Acute WET		TU _a	See Listed Qtrs	24-Hr Flow Prop Comp	Annual tests in rotating quaters. See 'Whole Effleunt Toxicity (WET)' permit section.
Chronic WET		rTU _c	See Listed Qtrs	24-Hr Flow Prop Comp	Annual tests in rotating quaters. See 'Whole Effleunt Toxicity (WET)' permit section.

3.2.1.1 Annual Average Design Flow

The annual average design flow of the permittee's wastewater treatment facility is 8.2 MGD.

3.2.1.2 Waste Load Allocation (WLA) Limits for BOD₅

Waste load allocation (WLA) Limits in lbs/day for BOD₅ River Mile 265.0 to 260.0

May and June:

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1314	1275	1321	1422	1494	1541	1624	1729	1862	2002	2179	2406	2709	3051	3415	3822	4103	4597
74 to 77	1213	1228	1339	1462	1617	1610	1736	1898	2078	2287	2507	2806	3195	3620	4103	4456	5097	5811
70 to 73	1152	1213	1350	1476	1552	1700	1880	2089	2147	2586	2864	3235	3728	4103	4716	5433	6236	6982
66 to 69	1170	1253	1412	1534	1696	1905	2143	2413	2712	3029	3372	3840	4244	4961	5757	6640	7616	7706
62 to 65	1195	1394	1534	1721	1959	2240	2557	2907	3278	3685	4103	4525	5353	6279	7317	7706	7706	7706
58 to 61	1350	1538	1761	2046	2384	2773	3195	3656	4103	4492	5105	5944	7065	7706	7706	7706	7706	7706
54 to 57	1541	1804	2165	2590	3069	3599	4103	4622	5339	6131	7000	7706	7706	7706	7706	7706	7706	7706
50 to 53	1844	2291	2838	3454	4103	4708	5577	6546	7605	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2413	3123	3959	4658	5721	6928	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

WPDES Permit No. WI-0025739-10-0
Wausau Water Works

42 to 45	3404	4298	5598	7112	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4921	6787	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

July and August:

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	A	← B →			← C →													
≥78	1426	1415	1498	1617	1696	1732	1822	1930	2067	2215	2381	2611	2910	3242	3606	4017	4254	4784
74 to 77	1332	1383	1509	1617	1685	1790	1927	2089	2269	2474	2698	2986	3375	3808	4103	4643	5274	5977
70 to 73	1278	1365	1516	1617	1721	1876	2060	2273	2503	2763	3040	3408	3908	4244	4885	5595	6387	7259
66 to 69	1289	1397	1566	1689	1858	2064	2309	2579	2871	3191	3530	4009	4406	5115	5908	6776	7706	7706
62 to 65	1314	1534	1675	1869	2111	2392	2712	3058	3429	3847	4103	4679	5508	6423	7447	7706	7706	7706
58 to 61	1476	1671	1898	2193	2536	2921	3346	3815	4103	4651	5260	6092	7209	7706	7706	7706	7706	7706
54 to 57	1664	1941	2305	2737	3220	3757	4128	4784	5497	6290	7155	7706	7706	7706	7706	7706	7706	7706
50 to 53	1974	2435	2986	3606	4103	4874	5750	6719	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2557	3278	4103	4834	5905	7115	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3573	4103	5804	7328	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	5133	7025	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

September:

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1174	1293	1448	1610	1786	2038	2370	2723	3109	3516	3977	4294
74 to 77	1062	1062	1062	1062	1062	1195	1350	1523	1725	1938	2183	2503	2896	3336	3829	4168	4827	5555
70 to 73	1062	1062	1062	1062	1167	1343	1545	1768	2017	2287	2575	2964	3465	4031	4452	5195	6016	6921
66 to 69	1062	1062	1076	1185	1376	1595	1851	2132	2446	2777	3127	3588	4103	4737	5551	6452	7447	7706
62 to 65	1062	1062	1203	1419	1675	1966	2298	2662	3044	3454	3912	4305	5151	6092	7144	7706	7706	7706
58 to 61	1062	1210	1466	1772	2132	2528	2964	3429	3948	4276	4896	5746	6888	7706	7706	7706	7706	7706
54 to 57	1195	1505	1891	2334	2831	3368	3977	4402	5123	5926	6802	7706	7706	7706	7706	7706	7706	7706
50 to 53	1520	2002	2572	3206	3912	4467	5346	6322	7393	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2093	2831	3663	4388	5458	6672	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3073	4103	5292	6812	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4535	6413	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

October:

	Flow at Rothschild Dam (previous day average in cfs)
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River Temperature (previous day average in °F)	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1062	1138	1275	1448	1621	1866	2190	2550	2925	3332	3775	4103
74 to 77	1062	1062	1062	1062	1062	1062	1206	1379	1566	1779	2028	2334	2737	3177	3653	4103	4618	5342
70 to 73	1062	1062	1062	1062	1062	1203	1408	1631	1880	2143	2428	2820	3318	3865	4283	5011	5825	6722
66 to 69	1062	1062	1062	1062	1249	1473	1721	2006	2312	2644	2997	3454	4092	4579	5386	6279	7270	7706
62 to 65	1062	1062	1087	1303	1559	1855	2186	2543	2925	3332	3775	4168	5004	5937	6985	7706	7706	7706
58 to 61	1062	1102	1358	1667	2020	2420	2853	3314	3818	4146	4759	5602	6737	7706	7706	7706	7706	7706
54 to 57	1091	1401	1783	2226	2719	3256	3750	4276	4993	5789	6658	7706	7706	7706	7706	7706	7706	7706
50 to 53	1419	1898	2464	3098	3790	4341	5213	6186	7245	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	1984	2723	3545	4258	5324	6528	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	2950	4089	5148	6658	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	6388	6250	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

Definitions

Point source allocation values (pounds per day BOD) in the above tables represent water quality related effluent limitations. The flow and temperature conditions (reported at Sample Point 601) used to determine a point source allocation value for a given day shall be the representative measurements of the flow and temperature. River flows used should be those collected and reported by Wisconsin Valley Improvement Company (WVIC) for the period beginning at 7 a.m. of the previous day and ending at 7 a.m. of the current day. Temperature values used should be those collected and reported by Wisconsin Public Service Corporation for the period beginning at 12 midnight of the previous day and ending 12 midnight of the current day. Wasteload Allocation (WLA) limits shall be calculated with BOD₅ values of samples collected for the current day, which are collected by Wausau for the period from 7 a.m. of the current day to 7 a.m. of the following day.

Monitoring Requirements: The same 24-hour period shall be utilized for the collection of composite and continuous samples for river flow and temperature and all effluent characteristics including effluent flow and BOD₅. Presently, the WVIC utilizes the 24-hour monitoring period ending at 7 a.m. for river flow.

Reporting Requirements: During the months of May through October inclusive the permittee shall report the following information:

The daily river flow (cfs);

The daily river temperature (oF);

The daily point source allocation value (lbs BOD₅ per day);

The actual daily discharge value of BOD₅ (lbs BOD₅ per day);

WLA Water Quality Related Effluent Limitations Restriction: In no case shall the WLA water quality related effluent limitations be less stringent than the applicable categorical effluent limitations contained in the effluent limits and monitoring table.

3.2.1.3 E. coli Percent Limit

No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 #/100 ml. Bacteria samples may be collected more frequently than required. All samples shall be reported on the monthly discharge monitoring reports (DMRs). The following calculation should be used to calculate percent exceedances.

$$\frac{\text{\# of Samples greater than 410 \#/100 mL}}{\text{Total \# of samples}} \times 100 = \% \text{ Exceedance}$$

3.2.1.4 Total Metals Analyses

Measurements of total metals and total recoverable metals shall be considered as equivalent.

3.2.1.5 Sample Analysis

Samples shall be analyzed using a method which provides adequate sensitivity so that results can be quantified at a level of quantitation below the calculated/potential effluent limit, unless not possible using the most sensitive approved method.

3.2.1.6 Mercury Monitoring

The permittee shall collect and analyze all mercury samples according to the data quality requirements of ss. NR 106.145(9) and (10), Wis. Adm. Code. The limit of quantitation (LOQ) used for the effluent and field blank shall be less than 1.3 ng/L, unless the samples are quantified at levels above 1.3 ng/L. The permittee shall collect at least one mercury field blank for each set of mercury samples (a set of samples may include combinations of intake, influent, effluent or other samples all collected on the same day). The permittee shall report results of samples and field blanks to the Department on Discharge Monitoring Reports.

3.2.1.7 Total Maximum Daily Load (TMDL) Limitations for Total Phosphorus

The Wisconsin River Basin TMDL for total phosphorus was approved by the U.S. Environmental Protection Agency on April 26, 2019. Additional Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin and the related Waste Load Allocation (WLA) included in Appendix K of the TMDL report were adopted by rule in s. NR 102.06 (7), Wis. Adm. Code, on June 1, 2020, and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee's approved SSC-based WLA is 9,145 lbs/year, and results in calculated phosphorus mass limits of 34 lbs/day. The 12-month rolling sum of total monthly phosphorus (lbs/yr) shall be reported each month for direct comparison to the facility's WLA.

Effluent results shall be calculated as follows:

Total Monthly Discharge (lbs/month): = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

12-Month Rolling Sum of Total Monthly Discharge (lbs/yr): = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

3.2.1.8 PFOS/PFOA Sampling and Reporting Requirements

For grab samples, as defined per s. NR 218.04(10), Wis. Adm. Code, a single sample at a location as defined by the sample point description shall be taken during the time of the day most representative to capture all potential discharges. If extra equipment besides the sample bottle is used to collect the sample, it is recommended that a one-time equipment blank is collected with the first sample. An equipment blank would be collected by passing laboratory-verified PFAS-free water over or through field sampling equipment before the collection of a grab sample to evaluate potential contamination from the equipment used during sample.

If any equipment blanks are performed, these results shall be reported in the comments section of the eDMR and shall also be documented in the reports submitted as part of the PFOS/PFOA Minimization Plan Determination of Need schedule of the permit.

3.2.1.9 PFOS/PFOA Minimization Plan Determination of Need

The permittee shall monitor PFOS and PFOA as specified in the table above and report on the effluent concentrations including trends in monthly and annual average PFOS and PFOA concentrations as specified in the PFOS/PFOA Minimization Plan Determination of Need Schedule.

If, after reviewing the data, the Department determines that a minimization plan for PFOS and PFOA is necessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department will notify the permittee in writing that

a PFOS and PFOA minimization plan that satisfies the requirements in s. NR 106.99, Wis. Adm. Code, is required. The permittee shall submit an initial plan for Department approval no later than 90 days after written notification was sent from the Department in accordance with s. NR 106.985(2)(a), Wis. Adm. Code. Pursuant to s. NR 106.985(2)(b), Wis. Adm. Code, as soon as possible after Department approval of the PFOS and PFOA minimization plan, the Department will modify or revoke and reissue the permit in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to include the PFOS and PFOA minimization plan and other related terms and condition.

If, however, the Department determines that a PFOS and PFOA minimization plan is unnecessary based on the procedures in s. NR 106.98(4), Wis. Adm. Code, the Department shall notify the permittee that no further action is required. Per s. NR 106.98(3)(a), Wis. Adm. Code, the Department may reduce monitoring frequency to once every 3 months (quarterly) on a case-by-case basis, but only after at least 12 representative results have been generated. If the permittee requests a reduction in monitoring and the Department agrees a reduction would be appropriate, the permit may be modified in accordance with public notice procedures under ch. 283, Wis. Stats., and ch. NR 203, Wis. Adm. Code, to incorporate this change.

3.2.1.10 Whole Effluent Toxicity (WET) Testing

Primary Control Water: Wisconsin River

Instream Waste Concentration (IWC): 6%

Acute Mixing Zone Concentration: N/A

Dilution series: At least five effluent concentrations and dual controls must be included in each test.

- **Acute:** 100, 50, 25, 12.5, 6.25% and any additional selected by the permittee.
- **Chronic:** 100, 30, 10, 3, 1% and any additional selected by the permittee.

WET Testing Frequency:

Acute tests are required during the following quarters:

- **Acute:**
 - July – September 2026
 - April – June 2027
 - January – March 2028
 - October – December 2029
 - April – June 2030

Acute WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in October – December 2030.

Chronic tests are required during the following quarters:

- **Chronic:**
 - July – September 2026
 - April – June 2027
 - January – March 2028
 - October – December 2029
 - April – June 2030

Chronic WET testing shall continue after the permit expiration date (until the permit is reissued) in accordance with the WET requirements specified for the last full calendar year of this permit. For example, the next test would be required in October – December 2030.

Testing: WET testing shall be performed during normal operating conditions. Permittees are not allowed to turn off or otherwise modify treatment systems, production processes, or change other operating or treatment conditions during WET tests.

Reporting: The permittee shall report test results on the Discharge Monitoring Report form and complete the "Whole Effluent Toxicity Test Report Form" (Section 6, "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*"), for each test. The original, complete, signed version of the Whole Effluent Toxicity Test Report Form shall be sent to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., P.O. Box 7921, Madison, WI 53707-7921, within 45 days of test completion. The Discharge Monitoring Report (DMR) form shall be submitted electronically by the required deadline.

Determination of Positive Results: An acute toxicity test shall be considered positive if the Toxic Unit - Acute (TU_a) is greater than 1.0 for either species (fathead minnow (*Pimephales promelas*) and waterflea (*Ceriodaphnia dubia*)). The TU_a shall be calculated as follows: $TU_a = 100 \div LC_{50}$. A chronic toxicity test shall be considered positive if the Toxic Unit - Chronic (TU_c) is greater than 17 for either species. The TU_c shall be calculated as follows: $TU_c = 100 \div IC_{25}$.

Additional Testing Requirements: Within 90 days of a test which showed positive results, the permittee shall submit the results of at least 2 retests to the Biomonitoring Coordinator on "Whole Effluent Toxicity Test Report Forms". The 90-day reporting period shall begin the day after the test which showed a positive result. The retests shall be completed using the same species and test methods specified for the original test (see the Standard Requirements section herein).

3.2.2 Sampling Point 601 - WISCONSIN RIVER

Monitoring Requirements and Effluent Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
WLA Previous Day River Flow		cfs	5/Week	Measure	Monitoring required May through October when Waste Load Allocated BOD ₅ limits apply.
WLA Previous Day River Temp		deg F	5/Week	Measure	Monitoring required May through October when Waste Load Allocated BOD ₅ limits apply.

3.2.2.1 Definitions

River flow shall be defined as the daily average flow value derived from continuous river flow monitoring data for the Wisconsin River collected at the Rothschild Dam. If such flow data is unavailable for any day, flow shall be calculated by multiplying by 1.3 the daily average flow value derived from continuous stream flow monitoring data for the Wisconsin River collected at the Merrill Dam to correspond to the flow at Rothschild Dam. Daily average flow values reported by the Wisconsin Valley Improvement Co. for the Rothschild Dam and Merrill Dam locations are acceptable.

Temperature shall be defined as the daily average temperature value derived from continuous river temperature monitoring data for the Wisconsin River collected at the Wisconsin Public Service Corporation, Weston Generating Station. If such temperature data is unavailable for any day, a single grab sample for river temperature collected at the Domtar raw river water intake may be substituted for continuous river temperature monitoring. Daily average temperature values, or alternately, daily temperatures, reported by the Wisconsin Valley Improvement Company for the Weston Generating Station and Domtar locations are acceptable.

4 Land Application Requirements

4.1 Sampling Point(s)

The discharge(s) shall be limited to land application of the waste type(s) designated for the listed sampling point(s) on Department approved land spreading sites or by hauling to another facility.

Sampling Point Designation	
Sampling Point Number	Sampling Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
002	Class B, Cake, Anaerobically digested dewatered biosolids. Representative composite samples shall be collected from the wet cake loadout valve prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
003	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
004	Class A, Cake Biosolids, Heat dried exceptional quality biosolids for distribution to the public, land application or landfilling. Representative samples shall be collected from the truck load-out area and monitored quarterly. Pathogen control (List 3) monitoring is not required if the sludge is not stored at this location. All pathogen control samples shall be discrete samples. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment.
005	Class A, Cake Biosolids, Heat dried exceptional quality biosolids from the biosolids storage building for distribution to the public, land application or landfilling. Representative samples shall be collected from the dried biosolids piles in the storage building. Fecal (List 3) and percent total solids (List 4) monitoring is not required during quarters when there is no public distribution. Retesting for pathogen control (List 3) is required prior to distribution of Class A sludge product to the public. Percent total solids monitoring (List 4) is required prior to distribution.
006	Class A, Heat dried cake sludge, collected as dust prior to distribution or disposal. Representative samples shall be collected at the dust collector and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4).
010	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to the dewatering belt filter presses. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1) and vector attraction reduction (List 4) if using volatile solids reduction to show compliance with vector attraction reduction requirements at outfalls 002 and 003. With department approval this sample point may be used to satisfy monitoring requirements for metals (List 1) for outfalls 002, 003, 004, 005 and 006. The permittee shall demonstrate to the satisfaction of the department that the results for this outfall can be correlated with monitoring results for these other sample points and/or outfalls. This is a common sample point for metals (List 1), PPS and PCBs and is not an outfall for distribution.
011	Class A, Cake, Heat dried exceptional quality biosolids. Representative composite samples shall be collected immediately after the sludge dryer for pathogen control treatment process monitoring (List 3). Class A heat drying requirements apply to show conformance with Class A. This is a sample point and not an outfall for distribution.

4.2 Monitoring Requirements and Limitations

The permittee shall comply with the following monitoring requirements and limitations.

4.2.1 Sampling Point (Outfall) 002 - CLASS B CAKE SLUDGE; 003- CLASS B LIQUID SLUDGE

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

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	Annual
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	Annual

4.2.1.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.1.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.1.3 Reduced Monitoring and Reporting for Sludge when Landfilled

If sludge from this outfall is only landfilled during the monitoring period, monitoring and reporting for Lists 2, 3 and 4 may be omitted for this outfall. All other required monitoring and reporting shall be continued. Additional requirements may be required for acceptance by department approved landfill. All disposal shall conform to Ch. NR 204, Wis. Adm. Code and other administrative chapters.

4.2.1.4 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample

points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.1.5 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), Wis. Adm. Code, is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), Wis. Adm. Code, the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.1.6 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS	
See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters	
Solids, Total (percent)	
Arsenic, mg/kg (dry weight)	
Cadmium, mg/kg (dry weight)	
Copper, mg/kg (dry weight)	
Lead, mg/kg (dry weight)	
Mercury, mg/kg (dry weight)	
Molybdenum, mg/kg (dry weight)	
Nickel, mg/kg (dry weight)	
Selenium, mg/kg (dry weight)	
Zinc, mg/kg (dry weight)	

List 2 NUTRIENTS	
See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters	
Solids, Total (percent)	
Nitrogen Total Kjeldahl (percent)	
Nitrogen Ammonium (NH ₄ -N) Total (percent)	
Phosphorus Total as P (percent)	
Phosphorus, Water Extractable (as percent of Total P)	
Potassium Total Recoverable (percent)	

List 3

PATHOGEN CONTROL FOR CLASS B SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS or CFU/gTS	2,000,000
OR, ONE OF THE FOLLOWING PROCESS OPTIONS		
Aerobic Digestion	Air Drying	
Anaerobic Digestion	Composting	
Alkaline Stabilization	PSRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

List 4

VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.1.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations		
The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.		
Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.1.8 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated and discharge regardless of the end use (i.e. land applied, hauled to another facility, landfilled). If a discharge is not made from a specific sludge outfall, PFAS monitoring is not required.

PERFLUOROALKYLCARBOXILIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTTrDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSA)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid

PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorohexane sulfonic acid
6:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorooctane sulfonic acid
8:2FTSA	<i>1H,1H,2H,2H</i> -Perfluorodecane sulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSAs)	
PFOSA	Perfluorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
NMeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
ADONA	4,8-dioxo-3H-perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxahexanoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chlorooctadecafluoro-3-oxanone-1-sulfonic acid
11Cl-PF3OUdS	11-chloroheptafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
TELOMER SULFONIC Acids	
3:3FTCA	3-Perfluoropropyl propanoic acid
5:3FTCA	<i>2H,2H,3H,3H</i> -Perfluorooctanoic acid
7:3FTCA	3-Perfluoroheptyl propanoic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.1.9 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.1.10 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the [“Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”](#).

4.2.2 Sampling Point (Outfall) 004 - CLASS A EQ SLUDGE DISTRIBUTION; 005- CLASS A EQ SLUDGE STORAGE; 006- CLASS A EQ DUST

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	
PFOA + PFOS		µg/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.

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 3 Requirements – Pathogen Control: The requirements in List 3 shall be met prior to land application of sludge.	Annual
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	Annual

4.2.2.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.2.2 Reduced Monitoring and Reporting when Landfilled

If sludge from this outfall is only landfilled during the monitoring period, monitoring and reporting for Lists 2, 3 and 4 may be omitted for this outfall. All other required monitoring and reporting shall be continued. Additional requirements may be required for acceptance by department approved landfill. All disposal shall conform to Ch. NR 204, Wis. Adm. Code and other administrative chapters.

4.2.2.3 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.2.4 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.2.5 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), Wis. Adm. Code, is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), Wis. Adm. Code, the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.2.6 Lists 1, 2, 3, and 4

List 1 TOTAL SOLIDS AND METALS See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters	
Solids, Total (percent)	
Arsenic, mg/kg (dry weight)	
Cadmium, mg/kg (dry weight)	
Copper, mg/kg (dry weight)	
Lead, mg/kg (dry weight)	
Mercury, mg/kg (dry weight)	
Molybdenum, mg/kg (dry weight)	
Nickel, mg/kg (dry weight)	
Selenium, mg/kg (dry weight)	

List 1

TOTAL SOLIDS AND METALS

See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters

Zinc, mg/kg (dry weight)

List 2

NUTRIENTS

See the Monitoring Requirements and Limitations table above for monitoring frequency for the List 2 parameters

Solids, Total (percent)

Nitrogen Total Kjeldahl (percent)

Nitrogen Ammonium (NH₄-N) Total (percent)

Phosphorus Total as P (percent)

Phosphorus, Water Extractable (as percent of Total P)

Potassium Total Recoverable (percent)

List 3

PATHOGEN CONTROL FOR CLASS A SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	

* Fecal Coliform results shall be reported 7 discrete samples on a dry weight basis. The 7 discrete samples shall be collected through the monitoring period.

List 4

VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process

List 4

VECTOR ATTRACTION REDUCTION

The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option.

One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.

Option	Limit	Where/When it Shall be Met
Specific Oxygen Uptake Rate	$\leq 1.5 \text{ mg O}_2/\text{hr/g TS}$	On aerobic stabilized sludge
Anaerobic bench-scale test	$< 17 \% \text{ VS reduction}$	On anaerobic digested sludge
Aerobic bench-scale test	$< 15 \% \text{ VS reduction}$	On aerobic digested sludge
Aerobic Process	$> 14 \text{ days, Temp } > 40^\circ\text{C}$ and $\text{Avg. Temp } > 45^\circ\text{C}$	On composted sludge
pH adjustment	$> 12 \text{ S.U. (for 2 hours)}$ and > 11.5 (for an additional 22 hours)	During the process
Drying without primary solids	$> 75 \% \text{ TS}$	When applied or bagged
Drying with primary solids	$> 90 \% \text{ TS}$	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.2.7 Daily Land Application Log

Daily Land Application Log		
Discharge Monitoring Requirements and Limitations		
The permittee shall maintain a daily land application log for biosolids land applied each day when land application occurs. The following minimum records must be kept, in addition to all analytical results for the biosolids land applied. The log book records shall form the basis for the annual land application report requirements.		
Parameters	Units	Sample Frequency
DNR Site Number(s)	Number	Daily as used
Outfall number applied	Number	Daily as used
Acres applied	Acres	Daily as used
Amount applied	As appropriate * /day	Daily as used
Application rate per acre	unit */acre	Daily as used
Nitrogen applied per acre	lb/acre	Daily as used
Method of Application	Injection, Incorporation, or surface applied	Daily as used

*gallons, cubic yards, dry US Tons or dry Metric Tons

4.2.2.8 Sludge Monitoring for PFAS

Sampling shall occur for perfluoroalkyl and polyfluoroalkyl compounds (PFAS) listed in the table below and as indicated in sampling point sections above. Monitoring shall occur at each sample point when sludge is generated and discharge regardless of the end use (i.e. land applied, hauled to another facility, landfilled). If a discharge is not made from a specific sludge outfall, PFAS monitoring is not required.

PERFLUOROALKYLCARBOXYLIC Acids (PFCAs)	
PFBA	Perfluorobutanoic acid
PFPeA	Perfluroropentanoic acid
PFHxA	Perfluorohexanoic acid
PFHpA	Perfluoroheptanoic acid
PFOA	Perfluorooctanoic acid
PFNA	Perfluorononanoic acid
PFDA	Perfluorodecanoic acid
PFUnA	Perfluroundecanoic acid
PFDoA	Perfluorododecanoic acid
PFTTrDA	Perfluorotridecanoic acid
PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSA's)	
PFBS	Perfluorobutane sulfonic acid
PFPeS	Perfluroropentane sulfonic acid
PFHxS	Perfluorohexane sulfonic acid
PFHpS	Perfluoroheptane sulfonic acid
PFOS	Perfluorooctane sulfonic acid
PFNS	Perfluorononane sulfonic acid
PFDS	Perfluorodecane sulfonic acid
PFDoS	Perfluorododecane sulfonic acid
TELOMER SULFONIC Acids	
4:2FTSA	1H,1H,2H,2H-Perfluorohexane sulfonic acid
6:2FTSA	1H,1H,2H,2H-Perfluorooctane sulfonic acid
8:2FTSA	1H,1H,2H,2H-Perfluorodecane sulfonic acid
PERFLUOROOCTANCESULFONAMIDES (FOSA's)	
PFOSA	Perflurorooctane sulfonamide
NMeFOSA	N-Methyl perfluorooctane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluorooctane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSE's)	
NMeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamideoethanol

PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
ADONA	4,8-dioxa-3H-perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxaheptanoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid
11Cl-PF3OUdS	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluoro(2-ethoxyethane)sulfonic acid
TELOMER SULFONIC Acids	
3:3FTCA	3-Perfluoropropyl propanoic acid
5:3FTCA	2H,2H,3H,3H-Perfluorooctanoic acid
7:3FTCA	3-Perfluoroheptyl propanoic acid

Note: If WDNR Lab Certification removes a particular compound from the reporting list above and upon receiving written communication from the department, reporting for that compound is no longer required.

4.2.2.9 Sampling and Reporting Sludge Samples for PFAS

Representative sludge samples shall be collected at each sample point as listed. At minimum, liquid sludge storage/digesters should be thoroughly mixed prior to sampling. Cake sludge samples should consist of seven equal size discrete samples and be collected from different areas and depths then composited into one sample for laboratory analysis.

Note: If additional equipment is used for collecting sludge samples (i.e., shovels, compositing buckets, bottles, etc.), then a one-time equipment blank is recommended to be collected with the first sample. An equipment blank sample is collected by passing laboratory verified PFAS-free water over or through field sampling equipment before the collection of a representative sludge sample. The equipment blank result shall be reported on the annual Sludge Characteristics Form (3400-049) in the comment section when reporting PFAS concentrations in the sludge.

The permittee shall report each of the PFAS sludge monitoring results on the annual Sludge Characteristics and Monitoring Form (3400-049) as provided by the department. The permittee shall also report the summation of PFOS and PFOA on this same form. All results shall be reported in dry weight. The annual Sludge Characteristics and Monitoring Form (3400-049) are due January 31, of the year following the collection of the sludge samples.

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the solids matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., and in accordance with s. NR 149.41, Wis. Adm. Code. The department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

4.2.2.10 PFAS Land Application Requirements

The department recommends the landspreading and/or land application of sludge be done in a manner consistent with the most recent version of the [“Interim Strategy for Land Application of Biosolids and Industrial Sludges containing PFAS”](#).

4.2.3 Sampling Point (Outfall) 010 - CLASS B LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	

Other Sludge Requirements	
Sludge Requirements	Sample Frequency
List 4 Requirements – Vector Attraction Reduction: The vector attraction reduction shall be satisfied prior to, or at the time of land application as specified in List 4.	Annual

4.2.3.1 List 2 Analysis

If the monitoring frequency for List 2 parameters is more frequent than "Annual" then the sludge may be analyzed for the List 2 parameters just prior to each land application season rather than at the more frequent interval specified.

4.2.3.2 Changes in Feed Sludge Characteristics

If a change in feed sludge characteristics, treatment process, or operational procedures occurs which may result in a significant shift in sludge characteristics, the permittee shall reanalyze the sludge for List 1, 2, 3 and 4 parameters each time such change occurs.

4.2.3.3 Multiple Sludge Sample Points (Outfalls)

If there are multiple sludge sample points (outfalls), but the sludges are not subject to different sludge treatment processes, then a separate List 2 analysis shall be conducted for each sludge type which is land applied, just prior to land application, and the application rate shall be calculated for each sludge type. In this case, List 1, 3, and 4 and PCBs need only be analyzed on a single sludge type, at the specified frequency. If there are multiple sludge sample points (outfalls), due to multiple treatment processes, List 1, 2, 3 and 4 and PCBs shall be analyzed for each sludge type at the specified frequency.

4.2.3.4 Sludge Which Exceeds the High Quality Limit

Cumulative pollutant loading records shall be kept for all bulk land application of sludge which does not meet the high quality limit for any parameter. This requirement applies for the entire calendar year in which any exceedance of Table 3 of s. NR 204.07(5)(c), Wis. Adm. Code, is experienced. Such loading records shall be kept for all List 1 parameters for each site land applied in that calendar year. The formula to be used for calculating cumulative loading is as follows:

$$[(\text{Pollutant concentration (mg/kg)} \times \text{dry tons applied/ac}) \div 500] + \text{previous loading (lbs/acre)} = \text{cumulative lbs pollutant per acre}$$

When a site reaches 90% of the allowable cumulative loading for any metal established in Table 2 of s. NR 204.07(5)(b), Wis. Adm. Code, the Department shall be so notified through letter or in the comment section of the annual land application report (3400-55).

4.2.3.5 Lists 1 and 4

List 1 TOTAL SOLIDS AND METALS See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters	
Solids, Total (percent)	
Arsenic, mg/kg (dry weight)	
Cadmium, mg/kg (dry weight)	
Copper, mg/kg (dry weight)	
Lead, mg/kg (dry weight)	
Mercury, mg/kg (dry weight)	
Molybdenum, mg/kg (dry weight)	
Nickel, mg/kg (dry weight)	
Selenium, mg/kg (dry weight)	
Zinc, mg/kg (dry weight)	

List 1 TOTAL SOLIDS AND METALS See the Monitoring Requirements and Limitations table above for monitoring frequency and limitations for the List 1 parameters		
List 4 VECTOR ATTRACTION REDUCTION The permittee shall implement any one of the vector attraction reduction options specified in List 4. The Department shall be notified of the option utilized and shall be notified when the permittee decides to utilize an alternative option. One of the following shall be satisfied prior to, or at the time of land application as specified in List 4.		
Option	Limit	Where/When it Shall be Met
Volatile Solids Reduction	≥38%	Across the process
Specific Oxygen Uptake Rate	≤1.5 mg O ₂ /hr/g TS	On aerobic stabilized sludge
Anaerobic bench-scale test	<17 % VS reduction	On anaerobic digested sludge
Aerobic bench-scale test	<15 % VS reduction	On aerobic digested sludge
Aerobic Process	>14 days, Temp >40°C and Avg. Temp > 45°C	On composted sludge
pH adjustment	>12 S.U. (for 2 hours) and >11.5 (for an additional 22 hours)	During the process
Drying without primary solids	>75 % TS	When applied or bagged
Drying with primary solids	>90 % TS	When applied or bagged
Equivalent Process	Approved by the Department	Varies with process
Injection	-	When applied
Incorporation	-	Within 6 hours of application

4.2.4 Sampling Point (Outfall) 011 - CLASS A CAKE SLUDGE

List 3 PATHOGEN CONTROL FOR CLASS A SLUDGE The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control. The following requirements shall be met prior to land application of sludge.		
Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	

List 3

PATHOGEN CONTROL FOR CLASS A SLUDGE

The permittee shall implement pathogen control as listed in List 3. The Department shall be notified of the pathogen control utilized and shall be notified when the permittee decides to utilize alternative pathogen control.

The following requirements shall be met prior to land application of sludge.

Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the geometric mean of 7 discrete samples on a dry weight basis.		

5 Schedules

5.1 Mercury Pollutant Minimization Summary

Required Action	Due Date
Final Mercury Report: Submit a report summarizing the mercury pollutant minimization measures implemented during the current permit term and the success in maintaining effluent quality at or below the current concentrations. The report shall include an analysis of trends in quarterly and annual average mercury concentrations and total mass discharge of mercury based on mercury sampling and flow data covering the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury such as loads from industries or collection system maintenance.	12/31/2029

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.	12/31/2026
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.	12/31/2027

6 Standard Requirements

Chapter NR 205, Wisconsin Administrative Code: The conditions in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code, are included by reference in this permit. The permittee shall comply with all of these requirements. Some of these requirements are outlined in the Standard Requirements section of this permit. Requirements not specifically outlined in the Standard Requirement section of this permit can be found in ss. NR 205.07(1) and NR 205.07(2), Wis. Adm. Code.

6.1 Reporting and Monitoring Requirements

6.1.1 Monitoring Results

Monitoring results obtained during the previous month shall be summarized and reported on a Department Wastewater Discharge Monitoring Report. The report may require reporting of any or all of the information specified below under 'Recording of Results'. This report is to be returned to the Department no later than the date indicated on the form. A copy of the Wastewater Discharge Monitoring Report Form or an electronic file of the report shall be retained by the permittee.

Monitoring results shall be reported on an electronic discharge monitoring report (eDMR). The eDMR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

If the permittee monitors any pollutant more frequently than required by this permit, the results of such monitoring shall be included on the Wastewater Discharge Monitoring Report.

The permittee shall comply with all limits for each parameter regardless of monitoring frequency. For example, monthly, weekly, and/or daily limits shall be met even with monthly monitoring. The permittee may monitor more frequently than required for any parameter.

6.1.2 Sampling and Testing Procedures

Sampling and laboratory testing procedures shall be performed in accordance with Chapters NR 218 and NR 219, Wis. Adm. Code, and completed by a laboratory certified or registered in accordance with the requirements of ch. NR 149, Wis. Adm. Code. Groundwater sampling shall be performed in accordance with procedures contained in s. NR 140.16, Wis. Adm. Code, and the WDNR publications, Groundwater Sampling Desk Reference (PUBL-DG-037-96) and Groundwater Sampling Field Manual (PUBL-DG-038-96). The analytical methodologies used shall enable the laboratory to quantitate all substances for which monitoring is required at levels below the effluent limitation and/or groundwater standard. If the required level cannot be met by any of the methods available in ch. NR 219, Wis. Adm. Code, then the method with the lowest limit of detection shall be selected. Additional test procedures may be specified in this permit.

6.1.3 Pretreatment Sampling Requirements

Sampling for pretreatment parameters (cadmium, chromium, copper, lead, nickel, zinc, and mercury) shall be done during a day each month when industrial discharges are occurring at normal to maximum levels. The sampling of the influent and effluent for these parameters shall be coordinated. All 24 hour composite samples shall be flow proportional.

6.1.4 Recording of Results

The permittee shall maintain records which provide the following information for each effluent measurement or sample taken:

- The date, exact place, method and time of sampling or measurements;

- The individual who performed the sampling or measurements;
- The date the analysis was performed;
- The individual who performed the analysis;
- The analytical techniques or methods used; and
- The results of the analysis.

6.1.5 Reporting of Monitoring Results

The permittee shall use the following conventions when reporting effluent monitoring results:

- Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 0.1 mg/L, report the pollutant concentration as < 0.1 mg/L.
- Pollutant concentrations equal to or greater than the limit of detection, but less than the limit of quantitation, shall be reported and the limit of quantitation shall be specified.
- For purposes of calculating fees under ch. NR 101, Wis. Adm. Code, a reporting limit of 2.0 mg/L for BOD₅ and 2.5 mg/L Total Suspended Solids shall be considered to be limits of quantitation.
- For the purposes of reporting a calculated result, average or a mass discharge value, the permittee may substitute a “0” (zero) for any pollutant concentration that is less than the limit of detection. However, if the effluent limitation is less than the limit of detection, the department may substitute a value other than zero for results less than the limit of detection, after considering the number of monitoring results that are greater than the limit of detection and if warranted when applying appropriate statistical techniques.
- If no discharge occurs through an outfall, flow related parameters (e.g. flow rate, hydraulic application rate, volume, etc.) should be reported as “0” (zero) at the required sample frequency specified for the outfall. For example: if the sample frequency is daily, “0” would be reported for any day during the month that no discharge occurred.

6.1.6 Compliance Maintenance Annual Reports

Compliance Maintenance Annual Reports (CMAR) shall be completed using information obtained over each calendar year regarding the wastewater conveyance and treatment system. The CMAR shall be submitted and certified by the permittee in accordance with ch. NR 208, Wis. Adm. Code, by June 30, each year on an electronic report form provided by the Department.

In the case of a publicly owned treatment works, a resolution shall be passed by the governing body and submitted as part of the CMAR, verifying its review of the report and providing responses as required. Private owners of wastewater treatment works are not required to pass a resolution; but they must provide an Owner Statement and responses as required, as part of the CMAR submittal.

The CMAR shall be certified electronically by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The certification verifies that the electronic report is true, accurate and complete.

6.1.7 Records Retention

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings or electronic data records for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the application for the permit for a period of at least 3 years from the date of the sample, measurement, report or application. All pertinent sludge information,

including permit application information and other documents specified in this permit or s. NR 204.06(9), Wis. Adm. Code shall be retained for a minimum of 5 years.

6.1.8 Other Information

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or correct information to the Department.

6.1.9 Reporting Requirements – Alterations or Additions

The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is only required when:

- The alteration or addition to the permitted facility may meet one of the criteria for determining whether a facility is a new source.
- The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification requirement applies to pollutants which are not subject to effluent limitations in the existing permit.
- The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use of disposal sites not reported during the permit application process nor reported pursuant to an approved land application plan. Additional sites may not be used for the land application of sludge until department approval is received.

6.2 System Operating Requirements

6.2.1 Noncompliance Reporting

Sanitary sewer overflows and sewage treatment facility overflows shall be reported according to the 'Sanitary Sewer Overflows and Sewage Treatment Facility Overflows' section of this permit.

The permittee shall report the following types of noncompliance by a telephone call to the Department's regional office within 24 hours after becoming aware of the noncompliance:

- Any noncompliance which may endanger health or the environment;
- Any violation of an effluent limitation resulting from a bypass;
- Any violation of an effluent limitation resulting from an upset; and
- Any violation of a maximum discharge limitation for any of the pollutants listed by the Department in the permit, either for effluent or sludge.

A written report describing the noncompliance shall also be submitted to the Department's regional office within 5 days after the permittee becomes aware of the noncompliance. On a case-by-case basis, the Department may waive the requirement for submittal of a written report within 5 days and instruct the permittee to submit the written report with the next regularly scheduled monitoring report. In either case, the written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times; the steps taken or planned to reduce, eliminate and prevent reoccurrence of the noncompliance; and if the noncompliance has not been corrected, the length of time it is expected to continue.

A scheduled bypass approved by the Department under the 'Scheduled Bypass' section of this permit shall not be subject to the reporting required under this section.

NOTE: Section 292.11(2)(a), Wisconsin Statutes, requires any person who possesses or controls a hazardous substance or who causes the discharge of a hazardous substance to notify the Department of Natural Resources

immediately of any discharge not authorized by the permit. **The discharge of a hazardous substance that is not authorized by this permit or that violates this permit may be a hazardous substance spill. To report a hazardous substance spill, call DNR's 24-hour HOTLINE at 1-800-943-0003.**

6.2.2 Flow Meters

Flow meters shall be calibrated annually, as per s. NR 218.06, Wis. Adm. Code.

6.2.3 Raw Grit and Screenings

All raw grit and screenings shall be disposed of at a properly licensed solid waste facility or picked up by a licensed waste hauler. If the facility or hauler are located in Wisconsin, then they shall be licensed under chs. NR 500-555, Wis. Adm. Code.

6.2.4 Sludge Management

All sludge management activities shall be conducted in compliance with ch. NR 204 "Domestic Sewage Sludge Management", Wis. Adm. Code.

6.2.5 Prohibited Wastes

Under no circumstances may the introduction of wastes prohibited by s. NR 211.10, Wis. Adm. Code, be allowed into the waste treatment system. Prohibited wastes include those:

- Which create a fire or explosion hazard in the treatment work;
- Which will cause corrosive structural damage to the treatment work;
- Solid or viscous substances in amounts which cause obstructions to the flow in sewers or interference with the proper operation of the treatment work;
- Wastewaters at a flow rate or pollutant loading which are excessive over relatively short time periods so as to cause a loss of treatment efficiency; and
- Changes in discharge volume or composition from contributing industries which overload the treatment works or cause a loss of treatment efficiency.

6.2.6 Bypass

This condition applies only to bypassing at a sewage treatment facility that is not a scheduled bypass, approved blending as a specific condition of this permit, a sewage treatment facility overflow or a controlled diversion as provided in the sections titled 'Scheduled Bypass', 'Blending' (if approved), 'SSO's and Sewage Treatment Facility Overflows' and 'Controlled Diversions' of this permit. Any other bypass at the sewage treatment facility is prohibited and the Department may take enforcement action against a permittee for such occurrences under s. 283.89, Wis. Stats. The Department may approve a bypass if the permittee demonstrates all the following conditions apply:

- The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance. When evaluating feasibility of alternatives, the department may consider factors such as technical achievability, costs and affordability of implementation and risks to public health, the environment and, where the permittee is a municipality, the welfare of the community served; and
- The bypass was reported in accordance with the Noncompliance Reporting section of this permit.

6.2.7 Scheduled Bypass

Whenever the permittee anticipates the need to bypass for purposes of efficient operations and maintenance and the permittee may not meet the conditions for controlled diversions in the 'Controlled Diversions' section of this permit, the permittee shall obtain prior written approval from the Department for the scheduled bypass. A permittee's written request for Department approval of a scheduled bypass shall demonstrate that the conditions for bypassing specified in the above section titled 'Bypass' are met and include the proposed date and reason for the bypass, estimated volume and duration of the bypass, alternatives to bypassing and measures to mitigate environmental harm caused by the bypass. The department may require the permittee to provide public notification for a scheduled bypass if it is determined there is significant public interest in the proposed action and may recommend mitigation measures to minimize the impact of such bypass.

6.2.8 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation. Sewage treatment facilities that have multiple treatment units to treat variable or seasonal loading conditions may shut down redundant treatment units when necessary for efficient operation. The following requirements shall be met during controlled diversions:

- Effluent from the sewage treatment facility shall meet the effluent limitations established in the permit. Wastewater that is diverted around a treatment unit or treatment process during a controlled diversion shall be recombined with wastewater that is not diverted prior to the effluent sampling location and prior to effluent discharge;
- A controlled diversion does not include blending as defined in s. NR 210.03(2e), Wis. Adm. Code, and as may only be approved under s. NR 210.12. A controlled diversion may not occur during periods of excessive flow or other abnormal wastewater characteristics;
- A controlled diversion may not result in a wastewater treatment facility overflow; and
- All instances of controlled diversions shall be documented in sewage treatment facility records and such records shall be available to the department on request.

6.2.9 Ammonia Limit Not Needed - Continue to Optimize Removal of Ammonia

Applying the procedures in s. NR 106.05, Wis. Adm. Code, to ammonia data that is representative of the current operations of the wastewater treatment plant resulted in a determination that ammonia effluent limits are not necessary in this permit. Pursuant to NR 106.33, throughout the term of this permit, the wastewater treatment plant shall continue to be operated in a manner that optimizes the removal of ammonia within the design capabilities of the wastewater treatment plant.

6.2.10 Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training as required in ch. NR 114, Wis. Adm. Code, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.

6.2.11 Operator Certification

The wastewater treatment facility shall be under the direct supervision of a state certified operator. In accordance with s. NR 114.53, Wis. Adm. Code, every WPDES permitted treatment plant shall have a designated operator-in-charge holding a current and valid certificate. The designated operator-in-charge shall be certified at the level and in all subclasses of the treatment plant, except laboratory. Treatment plant owners shall notify the department of any changes in the operator-in-charge within 30 days. Note that s. NR 114.52(22), Wis. Adm. Code, lists types of facilities

that are excluded from operator certification requirements (i.e. private sewage systems, pretreatment facilities discharging to public sewers, industrial wastewater treatment that consists solely of land disposal, agricultural digesters and concentrated aquatic production facilities with no biological treatment).

6.3 Sewage Collection Systems

6.3.1 Sanitary Sewage Overflows and Sewage Treatment Facility Overflows

6.3.1.1 Overflows Prohibited

Any overflow or discharge of wastewater from the sewage collection system or at the sewage treatment facility, other than from permitted outfalls, is prohibited. The permittee shall provide information on whether any of the following conditions existed when an overflow occurred:

- The sanitary sewer overflow or sewage treatment facility overflow was unavoidable to prevent loss of life, personal injury or severe property damage;
- There were no feasible alternatives to the sanitary sewer overflow or sewage treatment facility overflow such as the use of auxiliary treatment facilities or adequate back-up equipment, retention of untreated wastes, reduction of inflow and infiltration, or preventive maintenance activities;
- The sanitary sewer overflow or the sewage treatment facility overflow was caused by unusual or severe weather-related conditions such as large or successive precipitation events, snowmelt, saturated soil conditions, or severe weather occurring in the area served by the sewage collection system or sewage treatment facility; and
- The sanitary sewer overflow or the sewage treatment facility overflow was unintentional, temporary, and caused by an accident or other factors beyond the reasonable control of the permittee.

6.3.1.2 Permittee Response to Overflows

Whenever a sanitary sewer overflow or sewage treatment facility overflow occurs, the permittee shall take all feasible steps to control or limit the volume of untreated or partially treated wastewater discharged, and terminate the discharge as soon as practicable. Remedial actions, including those in s. NR 210.21 (3), Wis. Adm. Code, shall be implemented consistent with an emergency response plan developed under the CMOM program.

6.3.1.3 Permittee Reporting

Permittees shall report all sanitary sewer overflows and sewage treatment overflows as follows:

- The permittee shall notify the department by telephone, fax or email as soon as practicable, but no later than 24 hours from the time the permittee becomes aware of the overflow;
- The permittee shall, no later than five days from the time the permittee becomes aware of the overflow, provide to the department the information identified in this paragraph using department form number 3400-184. If an overflow lasts for more than five days, an initial report shall be submitted within 5 days as required in this paragraph and an updated report submitted following cessation of the overflow. At a minimum, the following information shall be included in the report:
 - a) The date and location of the overflow;
 - b) The surface water to which the discharge occurred, if any;
 - c) The duration of the overflow and an estimate of the volume of the overflow;
 - d) A description of the sewer system or treatment facility component from which the discharge occurred such as manhole, lift station, constructed overflow pipe, or crack or other opening in a pipe;
 - e) The estimated date and time when the overflow began and stopped or will be stopped;

- f) The cause or suspected cause of the overflow including, if appropriate, precipitation, runoff conditions, areas of flooding, soil moisture and other relevant information;
- g) Steps taken or planned to reduce, eliminate and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
- h) A description of the actual or potential for human exposure and contact with the wastewater from the overflow;
- i) Steps taken or planned to mitigate the impacts of the overflow and a schedule of major milestones for those steps;
- j) To the extent known at the time of reporting, the number and location of building backups caused by excessive flow or other hydraulic constraints in the sewage collection system that occurred concurrently with the sanitary sewer overflow and that were within the same area of the sewage collection system as the sanitary sewer overflow; and
- k) The reason the overflow occurred or explanation of other contributing circumstances that resulted in the overflow event. This includes any information available including whether the overflow was unavoidable to prevent loss of life, personal injury, or severe property damage and whether there were feasible alternatives to the overflow.

NOTE: A copy of form 3400-184 for reporting sanitary sewer overflows and sewage treatment facility overflows may be obtained from the department or accessed on the department's web site at <http://dnr.wi.gov/topic/wastewater/SSOreport.html>. As indicated on the form, additional information may be submitted to supplement the information required by the form.

- The permittee shall identify each specific location and each day on which a sanitary sewer overflow or sewage treatment facility overflow occurs as a discrete sanitary sewer overflow or sewage treatment facility overflow occurrence. An occurrence may be more than one day if the circumstances causing the sanitary sewer overflow or sewage treatment facility overflow results in a discharge duration of greater than 24 hours. If there is a stop and restart of the overflow at the same location within 24 hours and the overflow is caused by the same circumstance, it may be reported as one occurrence. Sanitary sewer overflow occurrences at a specific location that are separated by more than 24 hours shall be reported as separate occurrences; and
- A permittee that is required to submit wastewater discharge monitoring reports under s. NR 205.07 (1) (r), Wis. Adm. Code, shall also report all sanitary sewer overflows and sewage treatment facility overflows on that report.

6.3.1.4 Public Notification

The permittee shall notify the public of any sanitary sewer and sewage treatment facility overflows consistent with its emergency response plan required under the CMOM (Capacity, Management, Operation and Maintenance) section of this permit and s. NR 210.23 (4) (f), Wis. Adm. Code. Such public notification shall occur promptly following any overflow event using the most effective and efficient communications available in the community. At minimum, a daily newspaper of general circulation in the county(s) and municipality whose waters may be affected by the overflow shall be notified by written or electronic communication.

6.3.2 Capacity, Management, Operation and Maintenance (CMOM) Program

- The permittee shall have written documentation of the Capacity, Management, Operation and Maintenance (CMOM) program components in accordance with s. NR 210.23(4), Wis. Adm. Code. Such documentation shall be available for Department review upon request. The Department may request that the permittee provide this documentation or prepare a summary of the permittee's CMOM program at the time of application for reissuance of the WPDES permit.
- The permittee shall implement a CMOM program in accordance with s. NR 210.23, Wis. Adm. Code.

- The permittee shall at least annually conduct a self-audit of activities conducted under the permittee's CMOM program to ensure CMOM components are being implemented as necessary to meet the general standards of s. NR 210.23(3), Wis. Adm. Code.

6.3.3 Sewer Cleaning Debris and Materials

All debris and material removed from cleaning sanitary sewers shall be managed to prevent nuisances, run-off, ground infiltration or prohibited discharges.

- Debris and solid waste shall be dewatered, dried and then disposed of at a licensed solid waste facility.
- Liquid waste from the cleaning and dewatering operations shall be collected and disposed of at a permitted wastewater treatment facility.
- Combination waste including liquid waste along with debris and solid waste may be disposed of at a licensed solid waste facility or wastewater treatment facility willing to accept the waste.

6.4 Surface Water Requirements

6.4.1 Permittee-Determined Limit of Quantitation Incorporated into this Permit

For pollutants with water quality-based effluent limits below the Limit of Quantitation (LOQ) in this permit, the LOQ calculated by the permittee and reported on the Discharge Monitoring Reports (DMRs) is incorporated by reference into this permit. The LOQ shall be reported on the DMRs, shall be the lowest quantifiable level practicable, and shall be no greater than the minimum level (ML) specified in or approved under 40 CFR Part 136 for the pollutant at the time this permit was issued, unless this permit specifies a higher LOQ.

6.4.2 Appropriate Formulas for Effluent Calculations

The permittee shall use the following formulas for calculating effluent results to determine compliance with average concentration limits and mass limits and total load limits:

Weekly/Monthly/Six-Month/Annual Average Concentration = the sum of all daily results for that week/month/six-month/year, divided by the number of results during that time period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April, except in cases of Water Quality Trading, wherein the applicable periods are January through June and July through December.]

Weekly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the week.

Monthly Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the month.

Six-Month Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the six-month period. [Note: When a six-month average effluent limit is specified for Total Phosphorus the applicable periods are May through October and November through April.]

Annual Average Mass Discharge (lbs/day): Daily mass = daily concentration (mg/L) x daily flow (MGD) x 8.34, then average the daily mass values for the entire year.

Total Monthly Discharge: = monthly average concentration (mg/L) x total flow for the month (MG/month) x 8.34.

Total Annual Discharge: = sum of total monthly discharges for the calendar year.

12-Month Rolling Sum of Total Monthly Discharge: = the sum of the most recent 12 consecutive months of Total Monthly Discharges.

6.4.3 Effluent Temperature Requirements

Weekly Average Temperature – If temperature limits are included in this permit, Weekly Average Temperature shall be calculated as the sum of all daily maximum results for that week divided by the number of daily maximum results during that time period.

Cold Shock Standard – Water temperatures of the discharge shall be controlled in a manner as to protect fish and aquatic life uses from the deleterious effects of cold shock pursuant to Wis. Adm. Code, s. NR 102.28. ‘Cold Shock’ means exposure of aquatic organisms to a rapid decrease in temperature and a sustained exposure to low temperature that induces abnormal behavior or physiological performance and may lead to death.

Rate of Temperature Change Standard – Temperature of a water of the state or discharge to a water of the state may not be artificially raised or lowered at such a rate that it causes detrimental health or reproductive effects to fish or aquatic life of the water of the state pursuant to Wis. Adm. Code, s. NR 102.29.

6.4.4 Visible Foam or Floating Solids

There shall be no discharge of floating solids or visible foam in other than trace amounts.

6.4.5 Surface Water Uses and Criteria

In accordance with NR 102.04, Wis. Adm. Code, surface water uses and criteria are established to govern water management decisions. Practices attributable to municipal, industrial, commercial, domestic, agricultural, land development or other activities shall be controlled so that all surface waters including the mixing zone meet the following conditions at all times and under all flow and water level conditions:

- Substances that will cause objectionable deposits on the shore or in the bed of a body of water, shall not be present in such amounts as to interfere with public rights in waters of the state.
- Floating or submerged debris, oil, scum or other material shall not be present in such amounts as to interfere with public rights in waters of the state.
- Materials producing color, odor, taste or unsightliness shall not be present in such amounts as to interfere with public rights in waters of the state.
- Substances in concentrations or in combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor shall substances be present in amounts which are acutely harmful to animal, plant or aquatic life.

6.4.6 Percent Removal

During any 30 consecutive days, the average effluent concentrations of BOD₅ and of total suspended solids shall not exceed 15% of the average influent concentrations, respectively. This requirement does not apply to removal of total suspended solids if the permittee operates a lagoon system and has received a variance for suspended solids granted under NR 210.07(2), Wis. Adm. Code.

6.4.7 *E. coli*

The monthly limit for *E. coli* shall be expressed as a geometric mean. In calculating the geometric mean, a value of 1 is used for any result of 0.

6.4.8 Seasonal Disinfection

Disinfection shall be provided from May 1 through September 30 of each year. Monitoring requirements and the limitations for Fecal Coliform (interim) and *E. coli* apply only during the period in which disinfection is required. Whenever chlorine is used for disinfection or other uses, the limitations and monitoring requirements for residual chlorine shall apply. A dechlorination process shall be in operation whenever chlorine is used.

6.4.9 Whole Effluent Toxicity (WET) Monitoring Requirements

In order to determine the potential impact of the discharge on aquatic organisms, static-renewal toxicity tests shall be performed on the effluent in accordance with the procedures specified in the "*State of Wisconsin Aquatic Life Toxicity Testing Methods Manual, 2nd Edition*" (PUB-WT-797, November 2004) as required by NR 219.04, Table A, Wis. Adm. Code). All of the WET tests required in this permit, including any required retests, shall be conducted on the *Ceriodaphnia dubia* and fathead minnow species. Receiving water samples shall not be collected from any point in contact with the permittee's mixing zone and every attempt shall be made to avoid contact with any other discharge's mixing zone.

6.4.10 Whole Effluent Toxicity (WET) Identification and Reduction

Within 60 days of a retest which showed positive results, the permittee shall submit a written report to the Biomonitoring Coordinator, Bureau of Water Quality, 101 S. Webster St., PO Box 7921, Madison, WI 53707-7921, which details the following:

- A description of actions the permittee has taken or will take to remove toxicity and to prevent the recurrence of toxicity;
- A description of toxicity reduction evaluation (TRE) investigations that have been or will be done to identify potential sources of toxicity, including the following actions:
 - a) Evaluate the performance of the treatment system to identify deficiencies contributing to effluent toxicity (e.g., operational problems, chemical additives, incomplete treatment)
 - b) Identify the compound(s) causing toxicity. Conduct toxicity screening tests on the effluent at a minimum of once per month for six months to determine if toxicity recurs. Screening tests are WET tests using fewer effluent concentrations conducted on the most sensitive species. If any of the screening tests contain toxicity, conduct a toxicity identification evaluation (TIE) to determine the cause. TIE methods are available from USEPA "Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003) and "Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I" (EPA/600/6-91/005F).
 - c) Trace the compound(s) causing toxicity to their sources (e.g., industrial, commercial, domestic)
 - d) Evaluate, select, and implement methods or technologies to control effluent toxicity (e.g., in-plant or pretreatment controls, source reduction or removal)
- Where corrective actions including a TRE have not been completed, an expeditious schedule under which corrective actions will be implemented;
- If no actions have been taken, the reason for not taking action.

The permittee may also request approval from the Department to postpone additional retests in order to investigate the source(s) of toxicity. Postponed retests must be completed after toxicity is believed to have been removed.

6.4.11 PFOS and PFOA Requirements

The laboratory performing the analysis on any samples shall be certified for the applicable PFAS compounds in the aqueous matrix by the Wisconsin Laboratory Certification Program established under s. 299.11, Wis. Stats., in accordance with s. NR 149.41, Wis. Adm. Code. All laboratories are required to utilize EPA Method 1633A for sampling PFAS in sludge.

The Department may reject any sample results if results are produced by a laboratory that is not in compliance with certification requirements under ch. NR 149, Wis. Adm. Code.

6.5 Pretreatment Program Requirements

The permittee is required to operate an industrial pretreatment program as described in the program initially approved by the Department of Natural Resources including any subsequent program modifications approved by the

Department, and including commitments to program implementation activities provided in the permittee's annual pretreatment program report, and that complies with the requirements set forth in 40 CFR Part 403 and ch. NR 211, Wis. Adm. Code. To ensure that the program is operated in accordance with these requirements, the following general conditions and requirements are hereby established:

6.5.1 Inventories

The permittee shall implement methods to maintain a current inventory of the general character and volume of wastewater that industrial users discharge to the treatment works and shall provide an updated industrial user listing annually and report any changes in the listing to the Department by March 31 of each year as part of the annual pretreatment program report required herein.

6.5.2 Regulation of Industrial Users

6.5.2.1 Limitations for Industrial Users:

The permittee shall develop, maintain, enforce and revise as necessary local limits to implement the general and specific prohibitions of the state and federal General Pretreatment Regulations.

6.5.2.2 Control Documents for Industrial Users (IUs)

The permittee shall control the discharge from each significant industrial user through individual discharge permits as required by s. NR 211.235, Wis. Adm. Code and in accordance with the approved pretreatment program procedures and the permittee's sewer use ordinance. The discharge permits shall be modified in a timely manner during the stated term of the discharge permits according to the sewer use ordinance as conditions warrant. The discharge permits shall include at a minimum the elements found in s. NR 211.235(1), Wis. Adm. Code and references to the approved pretreatment program procedures and the sewer use ordinance.

6.5.2.3 Review of Industrial User Reports, Inspections and Compliance Monitoring

The permittee shall require the submission of, receive, and review self-monitoring reports and other notices from industrial users in accordance with the approved pretreatment program procedures. The permittee shall randomly sample and analyze industrial user discharges and conduct surveillance activities to determine independent of information supplied by the industrial users, whether the industrial users are in compliance with pretreatment standards and requirements. The inspections and monitoring shall also be conducted to maintain accurate knowledge of local industrial processes, including changes in the discharge, pretreatment equipment operation, spill prevention control plans, slug control plans, and implementation of solvent management plans.

The permittee shall inspect and sample the discharge from each significant industrial user as specified in the permittee's approved pretreatment program or as specified in NR 211.235(3). The permittee shall evaluate whether industrial users identified as significant need a slug control plan according to the requirements of NR 211.235(4). If a slug control plan is needed, the plan shall contain at a minimum the elements specified in s. NR 211.235(4)(b), Wis. Adm. Code.

6.5.2.4 Enforcement and Industrial User Compliance Evaluation & Violation Reports

The permittee shall enforce the industrial pretreatment requirements including the industrial user discharge limitations of the permittee's sewer use ordinance. The permittee shall investigate instances of noncompliance by collecting and analyzing samples and collecting other information with sufficient care to produce evidence admissible in enforcement proceedings or in judicial actions. Investigation and response to instances of noncompliance shall be in accordance with the permittee's sewer use ordinance and approved Enforcement Response Plan.

The permittee shall make a semiannual report on forms provided or approved by the Department. The semiannual report shall include an analysis of industrial user significant noncompliance (i.e. the Industrial User Compliance Evaluation, also known as the SNC Analysis) as outlined in s. NR 211.23(1)(j), Wis. Adm. Code, and a summary of the permittee's response to all industrial noncompliance (i.e. the Industrial User Violation Report). The Industrial User Compliance Evaluation Report shall include monitoring results received from industrial users pursuant to s.

NR 211.15(1)-(5), Wis. Adm. Code. The Industrial User Violation Report shall include copies of all notices of noncompliance, notices of violation and other enforcement correspondence sent by the permittee to industrial users, together with the industrial user's response. The Industrial User Compliance Evaluation and Violation Reports for the period January through June shall be provided to the Department by September 30 of each year and for the period July through December shall be provided to the Department by March 31 of the succeeding year, unless alternate submittal dates are approved.

6.5.2.5 Publication of Violations

The permittee shall publish a list of industrial users that have significantly violated the municipal sewer use ordinance during the calendar year, in the largest daily newspaper in the area by March 31 of the following year pursuant to s. NR 211.23(1)(j), Wis. Adm. Code. A copy of the newspaper publication shall be provided as part of the annual pretreatment report specified herein.

6.5.2.6 Multijurisdictional Agreements

The permittee shall establish agreements with all contributing jurisdictions as necessary to ensure compliance with pretreatment standards and requirements by all industrial users discharging to the permittee's wastewater treatment system. Any such agreement shall identify who will be responsible for maintaining the industrial user inventory, issuance of industrial user control mechanisms, inspections and sampling, pretreatment program implementation, and enforcement.

6.5.3 Annual Pretreatment Program Report

The permittee shall evaluate the pretreatment program, and submit the Pretreatment Program Report to the Department on forms provided or approved by the Department by March 31 annually, unless an alternate submittal date is approved. The report shall include a brief summary of the work performed during the preceding calendar year, including the numbers of discharge permits issued and in effect, pollution prevention activities, number of inspections and monitoring surveys conducted, budget and personnel assigned to the program, a general discussion of program progress in meeting the objectives of the permittee's pretreatment program together with summary comments and recommendations.

6.5.4 Pretreatment Program Modifications

- **Future Modifications:** The permittee shall within one year of any revisions to federal or state General Pretreatment Regulations submit an application to the Department in duplicate to modify and update its approved pretreatment program to incorporate such regulatory changes as applicable to the permittee. Additionally, the Department or the permittee may request an application for program modification at any time where necessary to improve program effectiveness based on program experience to date.
- **Modifications Subject to Department Approval:** The permittee shall submit all proposed pretreatment program modifications to the Department for determination of significance and opportunity for comment in accordance with the requirements and conditions of s. NR 211.27, Wis. Adm. Code. Any substantial proposed program modification shall be subject to Department public noticing and formal approval prior to implementation. A substantial program modification includes, but is not limited to, changes in enabling legal authority to administer and enforce pretreatment conditions and requirements; significant changes in program administrative or operational procedures; significant reductions in monitoring frequencies; significant reductions in program resources including personnel commitments, equipment, and funding levels; changes (including any relaxation) in the local limitations for substances enforced and applied to users of the sewerage treatment works; changes in treatment works sludge disposal or management practices which impact the pretreatment program; or program modifications which increase pollutant loadings to the treatment works. The Department shall use the procedures outlined in s. NR 211.30, Wis. Adm. Code for review and approval/denial of proposed pretreatment program modifications. The permittee shall comply with local public participation requirements when implementing the pretreatment program.

6.5.5 Program Resources

The permittee shall have sufficient resources and qualified personnel to carry out the pretreatment program responsibilities as listed in ss. NR 211.22 and NR 211.23, Wis. Adm. Code.

6.6 Land Application Requirements

6.6.1 Sludge Management Program Standards And Requirements Based Upon Federally Promulgated Regulations

In the event that new federal sewage sludge standards or regulations are promulgated, the permittee shall comply with the new sewage sludge requirements by the dates established in the regulations, if required by federal law, even if the permit has not yet been modified to incorporate the new federal regulations.

6.6.2 General Sludge Management Information

The General Sludge Management Form 3400-48 shall be completed and submitted prior to any significant sludge management changes.

6.6.3 Sludge Samples

All sludge samples shall be collected at a point and in a manner which will yield sample results which are representative of the sludge being tested, and collected at the time which is appropriate for the specific test.

6.6.4 Land Application Characteristic Report

Each report shall consist of a Characteristic Form 3400-49 and Lab Report. The Characteristic Report Form 3400-49 shall be submitted electronically by January 31 following each year whether or not samples are analyzed. In years in which monitoring does not occur, the report shall be completed by checking on the form that monitoring/land application did not occur.

Following submittal of the electronic Characteristic Report Form 3400-49, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report is true, accurate and complete. The Lab Report must be sent directly to the facility's DNR sludge representative or basin engineer unless approval for not submitting the lab reports has been given.

The permittee shall use the following convention when reporting sludge monitoring results: Pollutant concentrations less than the limit of detection shall be reported as < (less than) the value of the limit of detection. For example, if a substance is not detected at a detection limit of 1.0 mg/kg, report the pollutant concentration as < 1.0 mg/kg .

All results shall be reported on a dry weight basis.

6.6.5 Calculation of Water Extractable Phosphorus

When sludge analysis for Water Extractable Phosphorus is required by this permit, the permittee shall use the following formula to calculate and report Water Extractable Phosphorus:

Water Extractable Phosphorus (% of Total P) =

$$[\text{Water Extractable Phosphorus (mg/kg, dry wt)} \div \text{Total Phosphorus (mg/kg, dry wt)}] \times 100$$

6.6.6 Monitoring and Calculating PCB Concentrations in Sludge

When sludge analysis for "PCB, Total Dry Wt" is required by this permit, the PCB concentration in the sludge shall be determined using either congener-specific analysis or Aroclor analysis. The permittee may decide which of these

analyses is performed. Analyses shall be performed in accordance with the following provisions and Table EM in s. NR 219.04, Wis. Adm. Code:

- If congener-specific analysis is employed: All PCB congeners shall be delineated. Non-detects shall be treated as zero. The values that are between the limit of detection (LOD) and the limit of quantitation shall be used when calculating the total value of all congeners. All results shall be added together and the total PCB concentration by dry weight reported.
- If Aroclor analysis is employed, reporting protocols, consistent with s. NR 106.07(6)(e), should be as follows: If all Aroclors are less than the LOD, then the Total PCB Dry Wt result should be reported as less than the highest LOD. If a single Aroclor is detected, then that is what should be reported for the Total PCB result. If multiple Aroclors are detected, they should be summed and reported as Total PCBs. If the LOD cannot be achieved after using the appropriate clean up techniques, a reporting limit that is achievable for the Aroclors or each congener for the sample shall be determined. This reporting limit shall be reported and qualified indicating the presence of an interference.

6.6.7 Annual Land Application Report

Land Application Report Form 3400-55 shall be submitted electronically by January 31, each year whether or not non-exceptional quality sludge is land applied. Non-exceptional quality sludge is defined in s. NR 204.07(4), Wis. Adm. Code. Following submittal of the electronic Annual Land Application Report Form 3400-55, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.8 Other Methods of Disposal or Distribution Report

The permittee shall submit electronically the Other Methods of Disposal or Distribution Report Form 3400-52 by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive or municipal officer, manager, partner or proprietor as specified in s. 283.37(3), Wis. Stats., or a duly authorized representative of the officer, manager, partner or proprietor that has been delegated signature authority pursuant to s. NR 205.07(1)(g)2, Wis. Adm. Code. The 'eReport Certify' page certifies that the electronic report form is true, accurate and complete.

6.6.9 Approval to Land Apply

Bulk non-exceptional quality sludge as defined in s. NR 204.07(4), Wis. Adm. Code, may not be applied to land without a written approval letter or Form 3400-122 from the Department unless the Permittee has obtained permission from the Department to self-approve sites in accordance with s. NR 204.06(6), Wis. Adm. Code. Analysis of sludge characteristics is required prior to land application. Application on frozen or snow-covered ground is restricted to the extent specified in s. NR 204.07(3)(l), Wis. Adm. Code.

6.6.10 Soil Analysis Requirements

Each site requested for approval for land application must have the soil tested prior to use. Each approved site used for land application must subsequently be soil tested such that there is at least one valid soil test in the four years prior to land application. All soil sampling and submittal of information to the testing laboratory shall be done in accordance with UW Extension Bulletin A-2100. The testing shall be done by the UW Soils Lab in Madison or Marshfield, WI or at a lab approved by UW. The test results including the crop recommendations shall be submitted to the DNR contact listed for this permit, as they are available. Application rates shall be determined based on the crop nitrogen recommendations and with consideration for other sources of nitrogen applied to the site.

6.6.11 Land Application Site Evaluation

For non-exceptional quality sludge, as defined in s. NR 204.07(4), Wis. Adm. Code, a Land Application Site Request Form 3400-053 shall be submitted to the Department for the proposed land application site. The Department will evaluate the proposed site for acceptability and will either approve or deny use of the proposed site. The permittee may obtain permission to approve their own sites in accordance with s. NR 204.06(6), Wis. Adm. Code.

6.6.12 Class A Sludge: Fecal Coliform Density Requirement

The fecal coliform density which must be < 1000 MPN/g TS as required in s. NR 204.07, Wis. Adm. Code, shall be satisfied immediately after the treatment process is completed. If the material is bagged or distributed at that time, no re-testing is required. If the material is bagged, distributed or land applied at a later time, the sludge shall be re-tested and this requirement satisfied at that time also, to ensure that regrowth of bacteria has not occurred. See Municipal Wastewater Sludge Guidance Memo #3 (Fecal Coliform Monitoring - Sampling and Analytical Procedures).

6.6.13 Class A Sludge: Heat Drying Process

Dry the sludge by direct or indirect contact with hot gases to reduce the moisture content of the sludge to 10% or lower. Either the temperature of the sewage sludge particles shall exceed 80° C or the wet bulb temperature of the gas in contact with the sludge as the sludge leaves the dryer shall exceed 80° C.

6.6.14 Class B Sludge: Fecal Coliform Limitation

Compliance with the fecal coliform limitation for Class B sludge shall be demonstrated by calculating the geometric mean of at least 7 separate samples. (Note that a Total Solids analysis must be done on each sample). The geometric mean shall be less than 2,000,000 MPN or CFU/g TS. Calculation of the geometric mean can be done using one of the following 2 methods.

Method 1:

$$\text{Geometric Mean} = (X_1 \times X_2 \times X_3 \dots \times X_n)^{1/n}$$

Where X = Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Method 2:

$$\text{Geometric Mean} = \text{antilog}[(X_1 + X_2 + X_3 \dots + X_n) \div n]$$

Where X = $\log_{10}$ of Coliform Density value of the sludge sample, and where n = number of samples (at least 7)

Example for Method 2

Sample Number	Coliform Density of Sludge Sample	$\log_{10}$
1	6.0×10^5	5.78
2	4.2×10^6	6.62
3	1.6×10^6	6.20
4	9.0×10^5	5.95
5	4.0×10^5	5.60
6	1.0×10^6	6.00
7	5.1×10^5	5.71

The geometric mean for the seven samples is determined by averaging the $\log_{10}$ values of the coliform density and taking the antilog of that value.

$$(5.78 + 6.62 + 6.20 + 5.95 + 5.60 + 6.00 + 5.71) \div 7 = 5.98$$

The antilog of 5.98 = 9.5×10^5

6.6.15 Class B Sludge: Anaerobic Digestion

Treat the sludge in the absence of air for a specific mean cell residence time at a specific temperature. Values for the mean cell residence time and temperature shall be between 15 days at 35° C to 55° C and 60 days at 20° C. Straight-line interpolation to calculate mean cell residence time is allowable when the temperature falls between 35° C and 20° C.

6.6.16 Vector Control: Volatile Solids Reduction

The mass of volatile solids in the sludge shall be reduced by a minimum of 38% between the time the sludge enters the digestion process and the time it either exits the digester or a storage facility. For calculation of volatile solids reduction, the permittee shall use the Van Kleeck equation or one of the other methods described in "Determination of Volatile Solids Reduction in Digestion" by J.B. Farrell, which is Appendix C of EPA's *Control of Pathogens in Municipal Wastewater Sludge* (EPA/625/R-92/013). The Van Kleeck equation is:

$$\text{VSR}\% = \frac{\text{VS}_{\text{IN}} - \text{VS}_{\text{OUT}}}{\text{VS}_{\text{IN}} - (\text{VS}_{\text{OUT}} \times \text{VS}_{\text{IN}})} \times 100$$

Where: VS_{IN} = Volatile Solids in Feed Sludge (g VS/g TS)

VS_{OUT} = Volatile Solids in Final Sludge (g VS/g TS)

VSR% = Volatile Solids Reduction, (Percent)

6.6.17 Vector Control: Drying Without Primary Solids

Dry the sludge to 75% total solids when the sludge contains no unstabilized solids from primary treatment. This shall be met at the time the sludge is bagged, distributed, land applied or disposed of.

6.6.18 Vector Control: Drying With Primary Solids

Dry the sludge to 90% total solids when the sludge contains unstabilized solids from primary treatment. This shall be met at the time the sludge is bagged, distributed, land applied or disposed of.

6.6.19 Class B Sludge - Vector Control: Injection

No significant amount of the sewage sludge shall be present on the land surface within one hour after the sludge is injected.

6.6.20 Class B Sludge - Vector Control: Incorporation

Class B sludge shall be incorporated within 6 hours of surface application, or as approved by the Department.

6.6.21 Landfilling of Sludge

General: Sewage sludge may not be disposed of in a municipal solid waste landfill unless the landfill meets the requirements of chs. NR 500 to 536, Wis. Adm. Code, and is an approved facility as defined in s. 289.01(3), Wis. Stats. Any facility accepting sewage sludge shall be approved by the Department in writing to accept sewage sludge. Disposal of sewage sludge in a municipal solid waste landfill shall be in accordance with ss. NR 506.13 and 506.14. Sewage sludge may not be disposed of in a surface disposal unit as defined in s. NR 204.03(63).

Approval: The permittee shall obtain approval from the Department prior to the disposal of sludge at a Wisconsin licensed landfill.

6.6.22 Sludge Landfilling Reports

The permittee shall report the volume of sludge disposed of at any landfill facility on Form 3400-52. The permittee shall include the name and address of the landfill, the Department license number or other state's designation or license number for all landfills used during the report period and a letter of acceptability from the landfill owner. In addition, any permittee utilizing landfills as a disposal method shall submit to the Department any test results used to indicate acceptability of the sludge at a landfill. Form 3400-52 shall be submitted annually by January 31, each year whether or not sludge is landfilled.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Mercury Pollutant Minimization Summary -Final Mercury Report	December 31, 2029	30
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge	December 31, 2026	30
PFOS/PFOA Minimization Plan Determination of Need -Report on Effluent Discharge and Evaluation of Need	December 31, 2027	30
Compliance Maintenance Annual Reports (CMAR)	by June 30, each year	32
Industrial User Compliance Evaluation and Violation Reports	Semiannual	42
Pretreatment Program Report	Annually	42
General Sludge Management Form 3400-48	prior to any significant sludge management changes	43
Characteristic Form 3400-49 and Lab Report	by January 31 following each year whether or not samples are analyzed	43
Land Application Report Form 3400-55	by January 31, each year whether or not non-exceptional quality sludge is land applied	44
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not sludge is hauled, landfilled, incinerated, or exceptional quality sludge is distributed or land applied	44
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	31

Report forms shall be submitted electronically in accordance with the reporting requirements herein. Any facility plans or plans and specifications for municipal, industrial, industrial pretreatment and non industrial wastewater systems shall be submitted to the Bureau of Water Quality, P.O. Box 7921, Madison, WI 53707-7921. All other submittals required by this permit shall be submitted to:

West Central Region, 1300 W. Clairemont Ave, Eau Claire, WI 54701

Draft Wausau Permit Fact Sheet

General Information

Permit Number	WI-0025739-10-0
Permittee Name and Address	Wausau Water Works 407 Grant St City Hall, Wausau, WI 54403
Permitted Facility Name and Address	Wausau Water Works WW Treatment Facility 435 Adrian Street, Wausau, WI 54403
Permit Term	January 01, 2026 to December 31, 2030
Discharge Location	435 Adrian St., Wausau, WI 54403. NW ¼, NW ¼, Section 1, T28N, R7E, City of Wausau, Marathon County. West bank of the Wisconsin River, ¼ mile downstream of the Thomas St. bridge. Outfall: Lat: 44.94404° N / Lon: 89.62826° W.
Receiving Water	Wisconsin River in Lower Eau Claire (Marathon Co.) River of Wisconsin River (upper) in Marathon County
Stream Flow (Q _{7,10})	850 cfs
Stream Classification	Warm Water Sportfish, Non-public Water Supply
Discharge Type	Continuous, Existing
Annual Average Design Flow (MGD)	8.2 MGD
Industrial or Commercial Contributors	Yes. 12 Categorical Industrial Users and 6 Other significant Industrial Users.
Plant Classification	This is an Advanced facility with required subclasses: A1 – Suspended Growth Processes, B – Solids Separation, C – Biological Solids/Sludges, P – Total Phosphorus, D – Disinfection, L – Laboratory and SS – Sanitary Sewage Collection System. The Operator-in-charge is certified at the advanced level in all subclasses except SS. There are other facility operators that have the SS-Sanitary Sewage Collection System subclass operator certification.
Approved Pretreatment Program?	Yes – Wausau’s local municipal pretreatment program was approved by the department January 1, 1985.

Facility Description

The Wausau Wastewater Treatment Facility (WWTF) receives wastewater from the City of Wausau, the City of Schofield and the Town of Stettin, in addition to industrial wastewater from industries that are regulated under Wausau’s pretreatment program. Wausau WWTF accepts and treats domestic holding tank, septic tank and grease trap interceptors, commercial septage and landfill leachate wastes. Landfill leachate was not accepted in 2022 or 2023, but it may be accepted again in the future. Wausau WWTF accepts approximately 10 gpd of petroleum contaminated groundwater from REI Engineering and also accepts groundwater that was previously contaminated with mineral spirits and pentachlorophenol from Wauleco Sentry Insurance which is pumped and treated prior to discharged into the collection system. Wausau WWTF has an annual average design flow of 8.2 MGD.

Influent from the aforementioned sources is first treated at the Wausau WWTF via two mechanical bar screens, followed by the PISTA grit removal system. Subsequent wastewater treatment consists of primary clarification then continues into four selector zones designed for biological phosphorus removal enhancement prior to entering the aeration basins then to then secondary clarifiers. Effluent from the secondary clarifiers travels to tertiary treatment where three disc filters filter TSS out of the secondary effluent. The disc filters may also be bypassed if treatment is not necessary for meeting limitations. Disc filters also have the option of chemical phosphorus removal through chemical precipitation, by the addition of Alum and Polymer to create a floc which removes phosphorus from the secondary effluent. The chemical precipitation option is only used when biological phosphorus removal is not functioning properly. Effluent from the disc filters is disinfected seasonally via ultraviolet disinfection prior to discharge into the Wisconsin River. Waste Activated Sludge is thickened using gravity belt thickeners prior to anaerobic digestion. Anaerobic sludge from the digester is dewatered using belt filter presses which is collected in a hopper where either Class B sludge can be recycled via land application on WDNR approved sites or wet cake can be routed to a thermal dryer where Class A EQ sludge is produced and recycled via land application on WDNR approved sites. Distribution is being considered, but not yet active.

Proposed permit changes include the following: 1) effluent limit for mercury removed from permit but monitoring and reporting on mitigation efforts remain, 2) replacement of fecal coliform effluent limits with E. coli limits, 3) addition of monitoring for effluent PFOS and PFOA once every two months and an associated determination of need schedule in accordance with s. NR 106.98(2)(b), Wis. Adm. Code., 5) new Class A sludge requirements, and 6) PFAS sludge 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 to quantitate risk.

Substantial Compliance Determination

Enforcement During Last Permit: Notices of Noncompliance were issued for three distinct sanitary sewer overflows on May 21, 2020, August 20, 2020, November 5, 2020. Also, a NON was issued on January 09, 2025 for flow rate underreporting. Subsequent treatment plant upgrades were enacted to remediate the issue. The facility has completed all previously required actions as part of these Notices of Noncompliance's.

After a desk top review of all discharge monitoring reports, CMARs, land app reports, compliance schedule items, and a site visit on 11/20/2025, this facility has been found to be in substantial compliance with their current permit.

Compliance determination made by Nick Linstrom on 11/20/2025

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	4.5 MGD	Representative composite influent samples shall be taken from the influent channel after the mechanical bar screens and just prior to the PISTA grit removal chamber.
001	4.92 MGD	Representative effluent samples, except those for E. coli, shall be collected at the disinfection channel prior to disinfection; samples for E. coli shall be collected after disinfection.
104	N/A – Field Blank	The field blank shall be collected using standard handling procedures every day that mercury samples are collected at influent and effluent.

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
601	N/A – River Monitoring	Temperature and flow of the Wisconsin River shall be monitored for determination of Waste load Allocation (WLA) limits at Outfall 001. See subsections below for specific monitoring information.
002	1823 Dry Metric Tons	Class B, Cake, Anaerobically digested dewatered biosolids. Representative composite samples shall be collected from the wet cake loadout valve prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
003	0 Dry Tons	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to land application or disposal. This is not a primary outfall and considered an emergency outfall.
004	N/A – New Sample Point	Class A, Cake Biosolids, Heat dried exceptional quality biosolids for distribution to the public, land application or landfilling. Representative samples shall be collected from the truck load-out area and monitored quarterly. Pathogen control (List 3) monitoring is not required if the sludge is not stored at this location. All pathogen control samples shall be discrete samples. Each pathogen control sample shall meet the pathogen limit to prove effective pathogen treatment.
005	N/A – New Sample Point	Class A, Cake Biosolids, Heat dried exceptional quality biosolids from the biosolids storage building for distribution to the public, land application or landfilling. Representative samples shall be collected from the dried biosolids piles in the storage building. Fecal (List 3) and percent total solids (List 4) monitoring is not required during quarters when there is no public distribution. Retesting for pathogen control (List 3) is required prior to distribution of Class A sludge product to the public. Percent total solids monitoring (List 4) is required prior to distribution.
006	N/A – New Sample Point	Class A, Heat dried cake sludge, collected as dust prior to distribution or disposal. Representative samples shall be collected at the dust collector and monitored quarterly for metals (List 1), nutrients (List 2), pathogen control (List 3) and vector attraction reduction (List 4).
010	N/A - Internal Sample Point	Class B, Liquid, Anaerobically digested thickened biosolids. Representative composite samples shall be collected from the dewatering feed pumps prior to the dewatering belt filter presses. Sludge must be mixed prior to sampling and monitored quarterly for metals (List 1) and vector attraction reduction (List 4) if using volatile solids reduction to show compliance with vector attraction reduction requirements at outfalls 002 and 003. With department approval this sample point may be used to satisfy monitoring requirements for metals (List 1) for outfalls 002, 003, 004, 005 and

Sample Point Designation		
Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
		006. The permittee shall demonstrate to the satisfaction of the department that the results for this outfall can be correlated with monitoring results for these other sample points and/or outfalls. This is a common sample point for metals (List 1), PPS and PCBs and is not an outfall for distribution.
011	N/A - Internal Sample Point	Class A, Cake, Heat dried exceptional quality biosolids. Representative composite samples shall be collected immediately after the sludge dryer for pathogen control treatment process monitoring (List 3). Class A heat drying requirements apply to show conformance with Class A. This is a sample point and not an outfall for distribution.

Permit Requirements

1 Influent – Monitoring Requirements

1.1 Sample Point Number: 701- INFLUENT TO PLANT

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	5/Week	24-Hr Flow Prop Comp	
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See 'Mercury Monitoring' permit section.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	

1.1.1 Changes from Previous Permit:

There have been no changes to influent monitoring requirements from the previous permit.

1.1.2 Explanation of Limits and Monitoring Requirements

Section NR 210.04(2), Wis. Adm. Code, requires that influent wastewater strengths and volumes shall be characterized by monitoring for flow, BOD₅ and Total Suspended Solids (TSS). BOD₅ and TSS influent monitoring results are required to demonstrate the 85% removal requirement for BOD₅ and TSS found in ss. NR 210.05(1)(a)3 and (b)3, Wis. Adm. Code.

Pretreatment Program

The Wausau wastewater treatment facility has a design flow of more than 5 million gallon per day (MGD) and thus is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer an industrial pretreatment program. Monthly influent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

2 Inplant - Monitoring and Limitations

2.1 Sample Point Number: 104- Mercury field blank

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Monthly	Blank	See '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 in this permit section.

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 TO WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Comp	
BOD5, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Comp	
WLA BOD5 Value		lbs/day	5/Week	See Table	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD ₅ ' below.
WLA BOD5 Discharged	Daily Max - Variable	lbs/day	5/Week	Calculated	Limits apply May-Oct. Report applicable variable limit on DMR. See 'Waste Load Allocation (WLA) Limits for BOD ₅ ' below.
Suspended Solids, Total	Weekly Avg	45 mg/L	5/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	30 mg/L	5/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Nitrogen, Ammonia (NH ₃ -N) Total		mg/L	Monthly	24-Hr Flow Prop Comp	
E. coli	Geometric Mean - Monthly	126 #/100 ml	2/Week	Grab	Limit Effective May through September annually.
E. coli	% Exceedance	10 Percent	Monthly	Calculated	Limit Effective May through September annually. See the E. coli Percent Limit section below. Enter the result in the DMR on the last day of the month.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury, Total Recoverable		ng/L	Monthly	24-Hr Flow Prop Comp	See mercury monitoring section below and Schedules section.
Cadmium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Chromium, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Copper, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Cyanide, Total		ug/L	Monthly	24-Hr Flow Prop Comp	
Lead, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Nickel, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Silver, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Zinc, Total Recoverable		ug/L	Monthly	24-Hr Flow Prop Comp	
Hardness, Total as CaCO ₃		mg/L	Monthly	24-Hr Flow Prop Comp	Sample concurrently with all metals.
Pentachloro- phenol		ug/L	Monthly	Grab	
Phosphorus, Total	Monthly Avg	1.0 mg/L	5/Week	24-Hr Flow Prop Comp	
Phosphorus, Total	Monthly Avg	34 lbs/day	5/Week	Calculated	See TMDL permit section.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on the last day of the month on the DMR. See TMDL section.
Phosphorus, 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. See TMDL section.

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
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	
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.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET permit section.
Chronic WET		rTUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET permit 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. See additional explanation of limits under “Explanation of Limits and Monitoring Requirements” below.

E. coli- Fecal coliform monitoring and limits have been replaced with *Escherichia coli* (E. coli) monitoring and limits.

Mercury- The removal of the mercury limit has been replaced with monitoring and a report on mercury is required to ensure mercury minimization efforts continue.

PFOS and PFOA – addition of once every two months monitoring and an associated determination of need schedule in accordance with s. NR 106.98(2)(b), Wis. Adm. Code.

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) and technologically based limits (TBEL) memo dated December 12, 2024 and titled “Wausau Water Works Wastewater Treatment Facility WPDES Permit No. WI-0025739.”

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.

Phosphorus - Chapter NR 217, Wis. Adm. Code. specifies WQBELs for discharges of phosphorus to surface waters of the state. 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.

Wisconsin River Total Maximum Daily Load (TMDL): The permitted facility is included within the Wisconsin River Basin Total Maximum Daily Load (TMDL), which was approved by EPA April 26, 2019. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus that can be discharged and still protect water quality. The final effluent limits and monitoring expressed in the permit were derived from Site-Specific Criteria (SSC) for Lakes Petenwell, Castle Rock, and Wisconsin originally included in Appendix K of the TMDL report and approved by the U.S. Environmental Protection Agency on July 9, 2020. The permittee's approved SSC-based limits are consistent with the assumptions and requirements of the EPA-approved WLA in the TMDL, which is 9145 lbs/yr for the permitted facility.

The approved TMDL expresses WLAs as lbs/year and lbs/day (maximum annual load divided by 365 days). As outlined in Section 4.6 of the department's *TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Program*, mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at <https://apps.dnr.wi.gov/swims/Documents/DownloadDocument?id=167886175>). Continuously discharging facilities covered by the WRB TMDL are given monthly average mass limits. The TMDL based mass limits are expressed as 20 lbs/day monthly average.

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

BOD₅ Waste Load Allocation Limits – For the months of May through October waste load allocated BOD₅ limits in pounds per day apply and are based on the flow and temperature of the Wisconsin River. River flow and river temperature monitoring and reporting are used to determine the daily point source allocation for Wausau ("WLA Value"). This value is compared to the actual daily discharge value of BOD₅ in pounds of BOD₅ per day ("WLA BOD₅ Discharged") to determine compliance. The tables of Waste Load Allocation Limits in lbs/day are found in the permit. In no case shall the WLA water quality related mass effluent limitations be less stringent than the applicable categorical concentration effluent limitations contained in the effluent limits and monitoring table.

Pretreatment Parameters – Wausau has a design flow of more than 5 million gallons per day (MGD) of treated effluent and is required, pursuant to s. NR 211.20, Wis. Adm. Code, to administer a pretreatment program. Monthly effluent monitoring is required for cadmium, chromium, copper, cyanide, lead, mercury, nickel, and zinc.

The need for effluent limitations for the pretreatment parameters listed above was evaluated in the December 12, 2024 WQBEL memo. Effluent concentrations were well below the calculated acute and chronic limitations and no limits for these parameters are recommended.

Mercury – The WQBEL for total recoverable mercury is set equal to the most stringent criterion of 1.3 ng/L, according to s. NR 106.06 (6), Wis. Adm. Code, because the background concentration in the receiving water and similar inland streams is known to exceed 1.3 ng/L.

Considering available effluent data from the current permit term (January 2022 to October 2024), the 30-day P₉₉ concentration is 1.04 ng/L, the 4-day P₉₉ concentration is 1.34 ng/L, and the 1-day P₉₉ concentration is 1.92 ng/L, with a maximum concentration of 2.19 ng/L. These effluent concentrations are below the calculated WQBELs for mercury, therefore no effluent limits are needed. To ensure that representative sample results are available at the next permit issuance, monthly mercury monitoring is required.

Antidegradation and Antibacksliding

Since current treatment capability and PMP/SRM measures are expected to remain in place, the removal of the daily maximum mercury limit will not increase the concentration, level, or loading of mercury to the Wisconsin River. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limit was removed in accordance with s. NR 207.12(4)(b), Wis. Adm. Code.

Total Nitrogen Monitoring (NO₂+NO₃, TKN and Total N)- The Department has included effluent monitoring for Total Nitrogen through the authority under s. 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. Quarterly monitoring is required.

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. 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. Monitoring and limits for E. Coli are required seasonally May-September throughout the permit term.

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 major municipal dischargers with an average flow rate greater than 1 MGD but less than 5 MGD, at a minimum sample effluent once every two-months for PFOS and PFOA pursuant s. NR 106.98(2)(b), Wis. Adm. Code.

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.

Whole Effluent Toxicity- Whole effluent toxicity (WET) testing requirements and limits (if applicable) are determined in accordance with ss. NR 106.08 and NR 106.09 Wis. Adm. Code, as revised August 2016. See the current version of the Whole Effluent Toxicity Program Guidance Document and checklist and WET information, guidance and test methods at <http://dnr.wi.gov/topic/wastewater/wet.html> Since the facility performed an Acute WET test in 2025 which is the same as part of the year 1 of the reissued permit, they were given 4 annual tests in the reissued permit and still fulfill their annual reporting requirements.

3.2 Sample Point Number: 601- WISCONSIN RIVER

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
WLA Previous Day River Flow		cfs	5/Week	Measure	Monitoring required May through October when Waste Load Allocation BOD5 limits apply.
WLA Previous Day River Temp		deg F	5/Week	Measure	Monitoring required May through October when Waste Load Allocation BOD5 limits apply.

3.2.1 Changes from Previous Permit

Effluent limitations and monitoring requirements were evaluated for this permit term and no changes were required in this permit section.

3.2.2 Explanation of Limits and Monitoring Requirements

The discharge of BOD₅ to the Wisconsin River for river miles 265.0 to 260.0 is waste load allocated between multiple dischargers to this reach of the river. Monitoring of river flow and river temperature is used to determine the variable “Waste load Allocation Limits in lbs/day for BOD₅” from the tables in the permit and that are reported in the monitoring table at section in the permit for “WLA Value”.

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)
002	B	Cake	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application or Landfilling	1823 Dry Metric Tons
003	B	Liquid	Anaerobic Digestion Fecal Coliform	Volatile Solids Reduction	Land Application	0 Dry Tons
004	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point

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)
005	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point
006	A (Exceptional Quality)	Cake (Collected as Dust)	Heat Drying Fecal Coliform Density	Volatile Solids Reduction	Distribution to the public, land application or landfilling	N/A – New Sample Point
010	B	Liquid	N/A	Volatile Solids Reduction	Sample point only	N/A - Internal Sample Point
011	A (Exceptional Quality)	Cake	Heat Drying Fecal Coliform Density	N/A	Sample point only	N/A - Internal Sample Point
* The permittee primarily uses Volatile Solids Reduction to satisfy Vector Attraction Reduction requirements (List 4), however, based on operational needs may also satisfy List 4 requirements through Drying with Primary Solids, Injection (liquid sludge) or Incorporation.						
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No, 180 days provided on site.						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No.						
Is a priority pollutant scan required? No. Wausau conducted a priority pollutant scan (PPS) during the last permit term. Therefore, the PPS is not required during this permit term as specified in ch. NR 215, Wis. Adm. Code, and under the authority of s. NR 204.06(2)(b)6, Wis. Adm. Code. 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.						

Changes from Previous Permit:

Wausau will complete construction of an upgrade to its biosolids (sludge) treatment processes during this permit term to produce Class A Exceptional Quality (EQ) biosolids. Exceptional quality biosolids may be sold or given away in a bag or other container by the permittee to either commercial or domestic users to be applied to lawns and home gardens as well as other sites allowed under ch. NR 204, Wis. Adm. Code. Exceptional quality biosolids are considered not to pose any reasonably anticipated threat to public health or the environment and are exempt from some requirements of ch. NR 204, Wis. Adm. Code (see NR 204.04(3), Exemptions.).

To provide Wausau with operational flexibility for the beneficial reuse of biosolids sample points/outfalls 010, 003, 011, 004, 005 and 006 have been added to the permit. Existing outfall 002 for landspreading Class B cake biosolids is retained with updated monitoring requirements.

The department recommends that the permittee follow the department's most recent interim strategy for PFAS in biosolids. Sludge discharges from outfalls are required to be monitored for PFAS. If an outfall is not used, then PFAS is not required to be monitored.

Monitoring for lists 2, 3 and 4 are not required when sludge is landfilled in place of distribution and/or land application.

Wausau's solids treatment train will include anaerobic digestion and thickening of raw sludge from wastewater treatment processes into Class B liquid biosolids (common sample point 010 and outfall 003), dewatering of the thickened Class B liquid biosolids with belt filter presses into Class B cake biosolids (existing outfall 002), heat drying of the Class B cake biosolids to produce a Class A heat dried exceptional quality cake biosolids (sample point 011, and outfalls 004, 005 and 006). See the "Sample Point Designation" table on pages 2 through 3 above for detailed descriptions of the biosolids sampling points/outfalls in this permit and related monitoring requirements.

4.1 Sample Point Number: 002- CLASS B CAKE SLUDGE; 003- CLASS B LIQUID SLUDGE

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Solids, Total		Percent	Quarterly	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Quarterly	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Quarterly	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Quarterly	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Quarterly	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Quarterly	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Quarterly	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	
Nitrogen, Total Kjeldahl		Percent	Quarterly	Composite	

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Nitrogen, Ammonium (NH ₄ -N) Total		Percent	Quarterly	Composite	
Phosphorus, Total		Percent	Quarterly	Composite	
Phosphorus, Water Extractable		% of Tot P	Quarterly	Composite	
Potassium, Total Recoverable		Percent	Quarterly	Composite	
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 new PFAS monitoring added.

PFAS –Monitoring is required annually pursuant to s. NR 204.06(2)(b)9., Wis. Adm. Code.

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., The use of the department’s “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” is recommended.

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.

4.2 Sample Point Number: 004- CLASS A EQ SLUDGE DISTRIBUTION; 005- CLASS A EQ SLUDGE STORAGE; 006- CLASS A EQ DUST

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

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
					PFAS List. See PFAS Permit Sections for more information.

4.2.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and no changes.

4.2.2 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., The use of the department’s “Interim Strategy for Land Application of Biosolids and Industrial Sludges Containing PFAS” is recommended.

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.

4.3 Sample Point Number: 010- CLASS B LIQUID SLUDGE

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

Monitoring Requirements and Limitations					
Parameter	Limit Type	Limit and Units	Sample Frequency	Sample Type	Notes
Mercury Dry Wt	Ceiling	57 mg/kg	Quarterly	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Quarterly	Composite	
Molybdenum Dry Wt	Ceiling	75 mg/kg	Quarterly	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Quarterly	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Quarterly	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Quarterly	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Quarterly	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Quarterly	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Quarterly	Composite	

4.3.1 Changes from Previous Permit:

Sludge limitations and monitoring requirements were evaluated for this permit term and no changes.

4.3.2 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).

4.4 Sample Point Number: 011- CLASS A EQ SLUDGE

List 3		
PATHOGEN CONTROL FOR CLASS A SLUDGE		
The following requirements shall be met prior to land application of sludge.		
Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
OR		
Salmonella	MPN/4gTS	3
AND, ONE OF THE FOLLOWING PROCESS OPTIONS		
Temp/Time based on % Solids	Alkaline Treatment	
Prior test for Enteric Virus/Viable Helminth Ova	Post test for Enteric Virus/Viable Helminth Ova	

List 3		
PATHOGEN CONTROL FOR CLASS A SLUDGE		
The following requirements shall be met prior to land application of sludge.		
Parameter	Unit	Limit
Fecal Coliform*	MPN/gTS	1000
Composting	Heat Drying	
Heat Treatment	Thermophilic Aerobic Digestion	
Beta Ray Irradiation	Gamma Ray Irradiation	
Pasteurization	PFRP Equivalent Process	
* The Fecal Coliform limit shall be reported as the discrete monitoring results of 7 discrete samples on a dry weight basis.		

4.4.1 Changes from Previous Permit:

No changes. This is a sample point to monitor for pathogen control treatment processing immediately after the Class A treatment process (heat drying). This is not an outfall for distribution.

4.4.2 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).

5 Schedules

5.1 Mercury Pollutant Minimization Summary

Required Action	Due Date
Final Mercury Report: Submit a report summarizing the mercury pollutant minimization measures implemented during the current permit term and the success in maintaining effluent quality at or below the current concentrations. The report shall include an analysis of trends in quarterly and annual average mercury concentrations and total mass discharge of mercury based on mercury sampling and flow data covering the current permit term. The report shall also include an analysis of how influent and effluent mercury varies with time and with significant loadings of mercury such as loads from industries or collection system maintenance.	12/31/2029

5.1.1 Explanation of Schedule

A report on mercury is required to ensure mercury minimization efforts continue and demonstrated.

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.	12/31/2026
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.	12/31/2027

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.

Other Comments

TBD

Attachments

Water Quality Based Effluent Limits

Public Notice

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Angela Parkhurst

Wastewater Specialist

Date: November 3, 2025

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: December 12, 2024

TO: Victoria Ziegler – SER/Waukesha

FROM: Benjamin Hartenbower – WCR/Eau Claire

SUBJECT: Water Quality-Based Effluent Limitations for the Wausau Water Works Wastewater Treatment Facility
WPDES Permit No. WI-0025739

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 Wausau Water Works Wastewater Treatment Facility in Marathon County. This municipal wastewater treatment facility (WWTF) discharges to the Wisconsin River, located in the Lower Eau Claire River Watershed in the Central Wisconsin River Basin. This discharge is included in the Wisconsin River TMDL as approved by EPA on April 26, 2019 with site-specific criteria approved by EPA on July 9, 2020. The evaluation of the permit recommendations is discussed in more detail in the attached report.

Based on our review, the following recommendations are made on a chemical-specific basis at Outfall 001:

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1,2
BOD ₅	Variable		45 mg/L	30 mg/L	1,3
May - October			45 mg/L	30 mg/L	
November - April			45 mg/L	30 mg/L	1
TSS			45 mg/L	30 mg/L	1
pH	9.0 s.u.	6.0 s.u.			1
Ammonia Nitrogen					1,2
<i>E. Coli</i>				126 #/100 mL geometric mean	4
Cadmium					1,2
Chromium					1,2
Copper					1,2
Total Cyanide					1,2
Lead					1,2
Mercury					2
Nickel					1,2
Pentachlorophenol					1,2
Silver					1,2
Zinc					1,2
Hardness					1,2
PFOS and PFOA					5
Phosphorus				1.0 mg/L	6
TBEL				34 lbs/day	
TMDL Limit					7
TKN, Nitrate+Nitrite, and Total Nitrogen					



Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Acute WET					8
Chronic WET					8,9

Footnotes:

1. No changes from the current permit.
2. Monitoring only.
3. BOD₅ allocation tables for the period of May – October based on ch. NR 212, Wis. Adm. Code.

May and June:

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1314	1275	1321	1422	1494	1541	1624	1729	1862	2002	2179	2406	2709	3051	3415	3822	4103	4597
74 to 77	1213	1228	1339	1462	1617	1610	1736	1898	2078	2287	2507	2806	3195	3620	4103	4456	5097	5811
70 to 73	1152	1213	1350	1476	1552	1700	1880	2089	2147	2586	2864	3235	3728	4103	4716	5433	6236	6982
66 to 69	1170	1253	1412	1534	1696	1905	2143	2413	2712	3029	3372	3840	4244	4961	5757	6640	7616	7706
62 to 65	1195	1394	1534	1721	1959	2240	2557	2907	3278	3685	4103	4525	5353	6279	7317	7706	7706	7706
58 to 61	1350	1538	1761	2046	2384	2773	3195	3656	4103	4492	5105	5944	7065	7706	7706	7706	7706	7706
54 to 57	1541	1804	2165	2590	3069	3599	4103	4622	5339	6131	7000	7706	7706	7706	7706	7706	7706	7706
50 to 53	1844	2291	2838	3454	4103	4708	5577	6546	7605	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2413	3123	3959	4658	5721	6928	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3404	4298	5598	7112	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4921	6787	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

July and August

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	A	← B →			← C →													
≥78	1426	1415	1498	1617	1696	1732	1822	1930	2067	2215	2381	2611	2910	3242	3606	4017	4254	4784
74 to 77	1332	1383	1509	1617	1685	1790	1927	2089	2269	2474	2698	2986	3375	3808	4103	4643	5274	5977
70 to 73	1278	1365	1516	1617	1721	1876	2060	2273	2503	2763	3040	3408	3908	4244	4885	5595	6387	7259
66 to 69	1289	1397	1566	1689	1858	2064	2309	2579	2871	3191	3530	4009	4406	5115	5908	6776	7706	7706
62 to 65	1314	1534	1675	1869	2111	2392	2712	3058	3429	3847	4103	4679	5508	6423	7447	7706	7706	7706
58 to 61	1476	1671	1898	2193	2536	2921	3346	3815	4103	4651	5260	6092	7209	7706	7706	7706	7706	7706
54 to 57	1664	1941	2305	2737	3220	3757	4128	4784	5497	6290	7155	7706	7706	7706	7706	7706	7706	7706
50 to 53	1974	2435	2986	3606	4103	4874	5750	6719	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2557	3278	4103	4834	5905	7115	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3573	4103	5804	7328	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	5133	7025	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

September

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1174	1293	1448	1610	1786	2038	2370	2723	3109	3516	3977	4294
74 to 77	1062	1062	1062	1062	1062	1195	1350	1523	1725	1938	2183	2503	2896	3336	3829	4168	4827	5555
70 to 73	1062	1062	1062	1062	1167	1343	1545	1768	2017	2287	2575	2964	3465	4031	4452	5195	6016	6921
66 to 69	1062	1062	1076	1185	1376	1595	1851	2132	2446	2777	3127	3588	4103	4737	5551	6452	7447	7706
62 to 65	1062	1062	1203	1419	1675	1966	2298	2662	3044	3454	3912	4305	5151	6092	7144	7706	7706	7706
58 to 61	1062	1210	1466	1772	2132	2528	2964	3429	3948	4276	4896	5746	6888	7706	7706	7706	7706	7706
54 to 57	1195	1505	1891	2334	2831	3368	3977	4402	5123	5926	6802	7706	7706	7706	7706	7706	7706	7706
50 to 53	1520	2002	2572	3206	3912	4467	5346	6322	7393	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2093	2831	3663	4388	5458	6672	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3073	4103	5292	6812	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4535	6413	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

October

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1062	1138	1275	1448	1621	1866	2190	2550	2925	3332	3775	4103
74 to 77	1062	1062	1062	1062	1062	1062	1206	1379	1566	1779	2028	2334	2737	3177	3653	4103	4618	5342
70 to 73	1062	1062	1062	1062	1062	1203	1408	1631	1880	2143	2428	2820	3318	3865	4283	5011	5825	6722
66 to 69	1062	1062	1062	1062	1249	1473	1721	2006	2312	2644	2997	3454	4092	4579	5386	6279	7270	7706
62 to 65	1062	1062	1087	1303	1559	1855	2186	2543	2925	3332	3775	4168	5004	5937	6985	7706	7706	7706
58 to 61	1062	1102	1358	1667	2020	2420	2853	3314	3818	4146	4759	5602	6737	7706	7706	7706	7706	7706
54 to 57	1091	1401	1783	2226	2719	3256	3750	4276	4993	5789	6658	7706	7706	7706	7706	7706	7706	7706
50 to 53	1419	1898	2464	3098	3790	4341	5213	6186	7245	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	1984	2723	3545	4258	5324	6528	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	2950	4089	5148	6658	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	6388	6250	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

4. Bacteria limits apply during the disinfection season of May - September. Additional limit: No more than 10 percent of *E. coli* bacteria samples collected in any calendar month may exceed 410 count/100 mL.
5. Monitoring once every two months is required in accordance with s. NR 106.98(2), Wis. Adm. Code.

6. The phosphorus mass limit is based on the Total Maximum Daily Load (TMDL) for the Wisconsin River Basin to address phosphorus water quality impairments within the TMDL area. The TMDL was approved by EPA on April 26, 2019 with site-specific criteria approved by EPA on July 9, 2020.
7. 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 major municipal permittees. Total Nitrogen is the sum of nitrate (NO₃), nitrite (NO₂), and total kjeldahl nitrogen (TKN) (all expressed as N).
8. Annual acute and 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 and should continue after the permit expiration date (until the permit is reissued).
9. The Instream Waste Concentration (IWC) to assess chronic test results is 6%. 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%, 30%, 10%, 3% & 1% and the dilution water used in WET tests conducted on Outfall 001 shall be a grab sample collected from the Wisconsin River.

Please consult the attached report for details regarding the above recommendations. If there are any questions or comments, please contact Benjamin Hartenbower at (715) 225-4705 or Benjamin.Hartenbower@wisconsin.gov or Diane Figiel at Diane.Figiel@wisconsin.gov.

Attachments (3) – Narrative, Thermal Table, & Map

PREPARED BY:



Benjamin Hartenbower, PE,
Water Resources Engineer

Date: 12/12/2024

E-cc:

Nick Lindstrom, Wastewater Engineer – WCR/Eau Claire
Geisa Thielen, Regional Wastewater Supervisor – WCR/Eau Claire
Diane Figiel, Water Resources Engineer – WY/3
Scott Provost, Water Quality Biologist – WCR/Wisconsin Rapids
Nate Willis, Wastewater Engineer – WY/3

**Water Quality-Based Effluent Limitations for
the Wausau Water Works Wastewater Treatment Facility
WPDES Permit No. WI-0025739**

Prepared by: Benjamin P. Hartenbower

PART 1 – BACKGROUND INFORMATION

Facility Description:

Influent is first treated at the Wausau WWTF via two mechanical bar screens, followed by the pista grit removal system. Subsequent wastewater treatment consists of primary clarification in which the primary sludge is screened prior to anaerobic digestion. Wastewater flows next into four selector zones which are for biological phosphorus enhancement followed by the addition of Magnesium Hydroxide which enhances pH and alkalinity in the conventional activated sludge system. Alum is dosed at the effluent end of the aeration basin for chemical phosphorus removal before flow moves onto four secondary clarifiers. Effluent from the secondary clarifiers travels onto tertiary treatment where three disc filters remove TSS out of the secondary effluent. Wausau has the option to bypass tertiary treatment if determined to be unnecessary to meet phosphorus limits. Disc filters also have the option of chemical Phosphorus removal through chemical precipitation, by the addition of Alum and Polymer to create a floc which removes phosphorus from the secondary effluent. The chemical precipitation option is only used when bio P is not working properly. Effluent from the disc filters is disinfected seasonally via ultraviolet disinfection prior to discharge into the Wisconsin River. Waste Activated Sludge is thickened using gravity belt thickeners prior to anaerobic digestion. Anaerobic sludge from the digester is dewatered using belt filter presses which is collected in a hopper where either Class B sludge can be recycled via land application on WDNR approved sites or wet cake can be routed to a thermal dryer where Class A EQ sludge is produced and recycled via land application on WDNR approved sites.

Attachment #3 is a map of the area showing the approximate location of Outfall 001.

Existing Permit Limitations

The current permit, which expired on December 31, 2023, includes the following effluent limitations and monitoring requirements.

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Flow Rate					1,2
BOD ₅	Variable				1,3
May - October			45 mg/L	30 mg/L	
November - April			45 mg/L	30 mg/L	
TSS			45 mg/L	30 mg/L	1
pH	9.0 s.u.	6.0 s.u.			1
Ammonia Nitrogen					2
Fecal Coliform					4
May - September			656 #/100 mL geometric mean	400 #/100 mL geometric mean	
Cadmium					2
Chromium					2

Attachment #1

Parameter	Daily Maximum	Daily Minimum	Weekly Average	Monthly Average	Footnotes
Copper					2
Total Cyanide					2
Lead					2
Mercury	3.8 ng/L				5
Nickel					2
Pentachlorophenol					2
Silver					2
Zinc					2
Hardness					2
Phosphorus TBEL TMDL Limit				1.0 mg/L 34 lbs/day	6
TKN, Nitrate+Nitrite, and Total Nitrogen					2
Acute WET					7
Chronic WET					8

Footnotes:

1. These limitations are not being evaluated as part of this review. Because the water quality criteria (WQC), reference effluent flow rates, and receiving water characteristics have not changed, limitations for these water quality characteristics do not need to be re-evaluated at this time.
2. Monitoring only.
3. BOD₅ allocation tables for the period of May – October based on ch. NR 212, Wis. Adm. Code.

May and June:

River Temperature (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1314	1275	1321	1422	1494	1541	1624	1729	1862	2002	2179	2406	2709	3051	3415	3822	4103	4597
74 to 77	1213	1228	1339	1462	1617	1610	1736	1898	2078	2287	2507	2806	3195	3620	4103	4456	5097	5811
70 to 73	1152	1213	1350	1476	1552	1700	1880	2089	2147	2586	2864	3235	3728	4103	4716	5433	6236	6982
66 to 69	1170	1253	1412	1534	1696	1905	2143	2413	2712	3029	3372	3840	4244	4961	5757	6640	7616	7706
62 to 65	1195	1394	1534	1721	1959	2240	2557	2907	3278	3685	4103	4525	5353	6279	7317	7706	7706	7706
58 to 61	1350	1538	1761	2046	2384	2773	3195	3656	4103	4492	5105	5944	7065	7706	7706	7706	7706	7706
54 to 57	1541	1804	2165	2590	3069	3599	4103	4622	5339	6131	7000	7706	7706	7706	7706	7706	7706	7706
50 to 53	1844	2291	2838	3454	4103	4708	5577	6546	7605	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2413	3123	3959	4658	5721	6928	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3404	4298	5598	7112	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4921	6787	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

Attachment #1

July and August

River Tempera- ture (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	A	← B →			← C →													
≥78	1426	1415	1498	1617	1696	1732	1822	1930	2067	2215	2381	2611	2910	3242	3606	4017	4254	4784
74 to 77	1332	1383	1509	1617	1685	1790	1927	2089	2269	2474	2698	2986	3375	3808	4103	4643	5274	5977
70 to 73	1278	1365	1516	1617	1721	1876	2060	2273	2503	2763	3040	3408	3908	4244	4885	5595	6387	7259
66 to 69	1289	1397	1566	1689	1858	2064	2309	2579	2871	3191	3530	4009	4406	5115	5908	6776	7706	7706
62 to 65	1314	1534	1675	1869	2111	2392	2712	3058	3429	3847	4103	4679	5508	6423	7447	7706	7706	7706
58 to 61	1476	1671	1898	2193	2536	2921	3346	3815	4103	4651	5260	6092	7209	7706	7706	7706	7706	7706
54 to 57	1664	1941	2305	2737	3220	3757	4128	4784	5497	6290	7155	7706	7706	7706	7706	7706	7706	7706
50 to 53	1974	2435	2986	3606	4103	4874	5750	6719	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2557	3278	4103	4834	5905	7115	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3573	4103	5804	7328	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	5133	7025	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

September

River Tempera- ture (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1174	1293	1448	1610	1786	2038	2370	2723	3109	3516	3977	4294
74 to 77	1062	1062	1062	1062	1062	1195	1350	1523	1725	1938	2183	2503	2896	3336	3829	4168	4827	5555
70 to 73	1062	1062	1062	1062	1167	1343	1545	1768	2017	2287	2575	2964	3465	4031	4452	5195	6016	6921
66 to 69	1062	1062	1076	1185	1376	1595	1851	2132	2446	2777	3127	3588	4103	4737	5551	6452	7447	7706
62 to 65	1062	1062	1203	1419	1675	1966	2298	2662	3044	3454	3912	4305	5151	6092	7144	7706	7706	7706
58 to 61	1062	1210	1466	1772	2132	2528	2964	3429	3948	4276	4896	5746	6888	7706	7706	7706	7706	7706
54 to 57	1195	1505	1891	2334	2831	3368	3977	4402	5123	5926	6802	7706	7706	7706	7706	7706	7706	7706
50 to 53	1520	2002	2572	3206	3912	4467	5346	6322	7393	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	2093	2831	3663	4388	5458	6672	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	3073	4103	5292	6812	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	4535	6413	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

Attachment #1

October

River Tempera- ture (previous day average in °F)	Flow at Rothschild Dam (previous day average in cfs)																	
	980 or Less	981 to 1220	1221 to 1470	1471 to 1730	1731 to 1990	1991 to 2260	2261 to 2540	2541 to 2830	2831 to 3130	3131 to 3430	3431 to 3780	3781 to 4230	4231 to 4730	4731 to 5250	5251 to 5780	5781 to 6340	6341 to 6910	6911 or More
	← A →		← B →			← C →												
≥78	1062	1062	1062	1062	1062	1062	1062	1138	1275	1448	1621	1866	2190	2550	2925	3332	3775	4103
74 to 77	1062	1062	1062	1062	1062	1062	1206	1379	1566	1779	2028	2334	2737	3177	3653	4103	4618	5342
70 to 73	1062	1062	1062	1062	1062	1203	1408	1631	1880	2143	2428	2820	3318	3865	4283	5011	5825	6722
66 to 69	1062	1062	1062	1062	1249	1473	1721	2006	2312	2644	2997	3454	4092	4579	5386	6279	7270	7706
62 to 65	1062	1062	1087	1303	1559	1855	2186	2543	2925	3332	3775	4168	5004	5937	6985	7706	7706	7706
58 to 61	1062	1102	1358	1667	2020	2420	2853	3314	3818	4146	4759	5602	6737	7706	7706	7706	7706	7706
54 to 57	1091	1401	1783	2226	2719	3256	3750	4276	4993	5789	6658	7706	7706	7706	7706	7706	7706	7706
50 to 53	1419	1898	2464	3098	3790	4341	5213	6186	7245	7706	7706	7706	7706	7706	7706	7706	7706	7706
46 to 49	1984	2723	3545	4258	5324	6528	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
42 to 45	2950	4089	5148	6658	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706
≤41	6388	6250	7707	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706	7706

4. Additional limits to comply with the expression of limits requirements are included in bold.
5. Mercury variance limit.
6. A compliance schedule is in the current permit to meet the TMDL Limit by December 31, 2023.
7. Acute WET testing required: July - Sept 2019, Apr - June 2020, Jan - March 2021, July - Sept 2022, and Jan - March 2023.
8. Chronic WET testing required: July - Sept 2019, Apr - June 2020, Jan - March 2021, July - Sept 2022, and Jan - March 2023. The IWC for chronic WET was 6%.

Receiving Water Information

- Name: Wisconsin River
- Waterbody Identification Code (WBIC): 1179900
- Classification used in accordance with chs. NR 102 and 104, Wis. Adm. Code: Warm Water Sport Fish (WWSF) community, non-public water supply.
- Low flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code: USGS for Station 05395000 in the Wisconsin River at Merrill.

7-Q₁₀ = 850 cfs (cubic feet per second)

7-Q₂ = 1380 cfs

90-Q₁₀ = 1173 cfs

Harmonic Mean Flow = 1515 cfs using a drainage area of 2680.0 mi².

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).

- Hardness = 44 mg/L as CaCO₃. This value represents the geometric mean of 224 samples collected in the Wisconsin River from 01/24/1995 to 01/25/2001.
- % of low flow used to calculate limits in accordance with s. NR 106.06(4)(c)5., Wis. Adm. Code: 25%
- Source of background concentration data: Chloride data is from the Wisconsin River. Mercury data is taken from the receiving water intake at WPS Weston. Additional metals data is from the Wisconsin River. The numerical values are shown in the tables below. If no data is available, the background concentration is assumed to be negligible and a value of zero is used in the computations. Background data for calculating effluent limitations for ammonia nitrogen are described later.
- Multiple dischargers: There are several other dischargers to the Wisconsin River however they are not in the immediate vicinity and the mixing zones do not overlap. Therefore, the other dischargers do not impact this evaluation.
- Impaired water status: This discharge is located within the WI River TMDL for phosphorus

Effluent Information:

- Design Flow Rates(s):
Annual Average = 8.200 MGD (Million Gallons per Day)
For reference, the actual average flow from January 2022 to October 2024 was 4.3 MGD.
- Hardness = 194 mg/L as CaCO₃. This value represents the geometric mean of 34 effluent samples collected from 01/24/2022 to 10/07/2024.
- Acute dilution factor used in accordance with s. NR 106.06 (3) (c), Wis. Adm. Code: Not applicable – this facility does not have an approved Zone of Initial Dilution (ZID).
- Water Source: Domestic wastewater from the City of Wausau, the City of Schofield and the Town of Stettin, as well as nondomestic contributions from industries that are regulated under a local pretreatment program.
- Additives: Magnesium hydroxide for pH and alkalinity and alum for phosphorus removal.
- Total Phosphorus Wasteload Allocation: 9145 lbs/year = 25.038 lbs/day
- Effluent characterization: This facility is categorized as a major municipal, 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 Ammonia Nitrogen, Mercury, Cadmium, Chromium, Copper, Lead, Nickel, Zinc, Cyanide, Total, Pentachlorophenol, Silver, Hardness, and Phosphorus from January 2022 to October 2024 is used in this evaluation.

Attachment #1

Chemical Specific Effluent Data at Outfall 001

	Chromium µg/L	Copper µg/L	Lead µg/L
1-day P ₉₉	2.81	43.65	N/A
4-day P ₉₉	2.01	30.20	N/A
30-day P ₉₉	1.14	23.22	N/A
Mean	0.65	19.79	0.44
Std	0.44	7.56	0.75
Sample size	34	34	34
Range	<1.3 - 2.6	5 - 48	<3.5 - 5.7

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

Chemical Specific Effluent Data at Outfall 001

	Nickel µg/L	Cadmium µg/L	Mercury ng/L
1-day P ₉₉	9.76	N/A	1.92
4-day P ₉₉	7.26	N/A	1.34
30-day P ₉₉	5.92	N/A	1.04
Mean	5.24	0.05	0.89
Std	1.52	0.13	0.33
Sample size	34	34	34
Range	2.2 - 8.8	<0.3 - 0.6	0.5 - 2.19

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

Chemical Specific Effluent Data at Outfall 001

Sample Date	Chloride mg/L
03/05/2023	221
03/09/2023	269
03/13/2023	211
03/22/2023	247
mean	237

Effluent data for substances for which a single sample was analyzed is shown in the tables in Part 2 below, in the column titled “MEAN EFFL. CONC.”.

The following table presents the average concentrations and loadings at Outfall 001 from January 2022 to October 2024 for all parameters with limits in the current permit to meet the requirements of s. NR 201.03(6):

Parameter Averages with Limits

	Average Measurement	Average Mass Discharged
BOD ₅	5.2 mg/L*	
TSS	6.3 mg/L*	
pH	6.86 s.u.	
Fecal Coliform	4#/100 mL	
Phosphorus	0.43 mg/L	14.65 lbs/day

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

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

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

1. The maximum effluent concentration exceeds the calculated limit (s. NR 106.05(3), Wis. Adm. Code)
2. If 11 or more detected results are available in the effluent, the upper 99th percentile (or P₉₉) 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-Q₁₀

Daily maximum effluent limitations for toxic substances are based on the acute toxicity criteria (ATC), listed in ch. NR 105, Wis. Adm. Code. Previously daily maximum limits for toxic substances were calculated as two times the ATC. However, changes to ch. NR 106, Wis. Code, (September 1, 2016) require the Department to calculate acute limitations using the same mass balance equation as used for other limits along with the 1-Q₁₀ receiving water low flow to determine if more restrictive effluent limitations are needed to protect the receiving stream from discharges which may cause or contribute to an exceedance of the acute water quality standards. The mass balance equation is provided below.

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

Where:

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

Q_s = average minimum 1-day flow which occurs once in 10 years (1-day Q₁₀)

if the 1-day Q₁₀ flow data is not available = 80% of the average minimum 7-day flow which occurs once in 10 years (7-day Q₁₀).

Q_e = Effluent flow (in units of volume per unit time) as specified in s. NR 106.06(4)(d), Wis. Adm. Code.

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

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

Attachment #1

If the receiving water is effluent dominated under low stream flow conditions, the 1-Q₁₀ method of limit calculation produces the most stringent daily maximum limitations and should be used while making reasonable potential determinations. This is not the case for the Wausau Water Works Wastewater Treatment Facility and the limits are set based on two times the acute toxicity criteria.

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

Daily Maximum Limits based on Acute Toxicity Criteria (ATC)

RECEIVING WATER FLOW = 680 cfs, (1-Q₁₀ (estimated as 80% of 7-Q₁₀)), as specified in s. NR 106.06(3)(bm), Wis. Adm. Code.

SUBSTANCE	REF. HARD. mg/L	ATC	MEAN BACK- GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	1-day P ₉₉	1-day MAX. CONC.
Arsenic		340	0.802	680	136	<14		
Cadmium	194	22.06	0.026	44.11	8.82	0.1		0.6
Chromium (+3)	194	3104	0.450	6208			2.8	2.6
Chromium (+6)		16.0		32.0	6.4			
Copper	194	29.01	1.050	58.03			43.6	48.0
Lead	194	202.96	0.586	405.92	81.18	0.4		5.7
Mercury		830	2.762	1660			1.92	2.19
Nickel	194	822.3	1.191	1644.6			9.8	8.8
Zinc	194	215.01	2.233	430.02			60.63	59.00
Pentachlorophenol	6.86	7.54		15.07	3.01	0.07		1.30
Chloride		757	12.6	1514	303	237		269

** The 2 × ATC method of limit calculation yields a more restrictive limit than consideration of ambient concentrations and 1-Q₁₀ flow rates per the changes to s. NR 106.07(3), Wis. Adm. Code, effective 09/01/2016.

Weekly Average Limits based on Chronic Toxicity Criteria (CTC)

RECEIVING WATER FLOW = 213 cfs (¼ of the 7-Q₁₀), as specified in s. NR 106.06(4)(c), Wis. Adm. Code.

SUBSTANCE	REF. HARD.* mg/L	CTC	MEAN BACK- GRD.	MAX. EFFL. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	4-day P ₉₉
Arsenic		152	0.802	2688	538	<14	
Cadmium	44	1.29	0.026	22.54	4.51	0.1	
Chromium (+3)	44	68	0.450	1191			2.0
Chromium (+6)		11.0		194.9	39.0	<4	
Copper	44	5.13	1.050	73.54			30.2
Lead	44	12.69	0.586	215.40	43.08	0.4	
Mercury		440	2.762	7763			1.34
Nickel	44	26.1	1.191	443.2			7.3
Zinc	44	58.80	2.233	1006.21			43.70
Pentachlorophenol	7.43	12.34		219.05	43.81	0.07	
Chloride		395	12.6	6800	1360	237	

Monthly Average Limits based on Wildlife Criteria (WC)

RECEIVING WATER FLOW = 293 cfs (¼ of the 90-Q₁₀), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	WC	MEAN BACK- GRD.	MAX. EFFL. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P ₉₉
Mercury	1.30	2.762	1.30			1.04

Monthly Average Limits based on Human Threshold Criteria (HTC)

RECEIVING WATER FLOW = 379 cfs (¼ of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HTC	MEAN BACK- GRD.	MAX. EFFL. LIMIT	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P ₉₉
Cadmium	370.0	0.026	11417.1	2283.4	0.1	
Chromium (+3)	3818000	0.450	117820474			1.1
Chromium (+6)	7636.0		235641.0	47128.2	<4	
Lead	140	0.586	4303	861	0.4	
Mercury	1.50	2.762	1.50			1.04
Nickel	43000	1.191	1326911			5.9
Pentachlorophenol ⁺	0.050		1.543	0.309	0.07	
Cyanide, Total	9300.0		286990.7	57398.1	1.76	

⁺ The limit for this substance is based on a secondary value.

Monthly Average Limits based on Human Cancer Criteria (HCC)

RECEIVING WATER FLOW = 379 cfs (¼ of the Harmonic Mean), as specified in s. NR 106.06(4), Wis. Adm. Code.

SUBSTANCE	HCC	MEAN BACK- GRD.	MAX. EFFL. LIMIT**	1/5 OF EFFL. LIMIT	MEAN EFFL. CONC.	30-day P ₉₉
Arsenic	13.3	0.802	386.5	77.3	<14	
Pentachlorophenol ⁺	0.33		30.86	6.17	0.07	

⁺ The limit for this substance is based on a secondary value.

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, limits are not required for toxic substances.

Mercury – The WQBEL for total recoverable mercury is set equal to the most stringent criterion of 1.3 ng/L, according to s. NR 106.06 (6), Wis. Adm. Code, because the background concentration in the receiving water and similar inland streams is known to exceed 1.3 ng/L.

Considering available effluent data from the current permit term (January 2022 to October 2024), the 30-day P₉₉ concentration is 1.04 ng/L, the 4-day P₉₉ concentration is 1.34 ng/L, and the 1-day P₉₉ concentration is 1.92 ng/L, with a maximum concentration of 2.19 ng/L. These effluent concentrations are below the calculated WQBELs for Mercury, therefore no effluent limits are needed. To ensure that representative sample results are available at the next permit issuance, **monthly mercury monitoring is recommended.**

Antidegradation and Antibacksliding

Since current treatment capability and PMP/SRM measures are expected to remain in place, the removal of mercury limits will not increase the concentration, level, or loading of mercury to the Wisconsin River. Therefore, antidegradation would not be applicable. To be consistent with antibacksliding requirements, the current limits may be removed in accordance with s. NR 207.12(4)(b), Wis. Adm. Code.

PFOS and PFOA

The need for PFOS and PFOA monitoring is evaluated in accordance with s. NR 106.98, Wis. Adm. Code. Monitoring of the effluent produced a PFOS result of 8.48 ng/L and a PFOA result of 14.80 ng/L. Monitoring of the water supply produced a PFOS result of 2.30 ng/L and a PFOA result of 12.00 ng/L. The PFOS result is greater than one fifth of the criterion for the substance. Based on the annual design flow, nondomestic contributions and known levels of PFOS/PFOA in the effluent and source water, **PFOS and PFOA monitoring is recommended 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. Given the fact that the Wausau Water Works Wastewater Treatment Facility does not currently have ammonia nitrogen limits, the need for limits is evaluated at this time.

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.

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

Where:

A = 0.411 and B = 58.4 for a Warm Water Sport fishery, and
pH (s.u.) = that characteristic of the effluent.

The effluent pH data was examined as part of this evaluation. A total of 739 sample results were reported from January 2022 to October 2024. The maximum reported value was 7.46 s.u. (Standard pH Units). The effluent pH was 7.35 s.u. or less 99% of the time. The 1-day P₉₉, calculated in accordance with s. NR 106.05(5), Wis. Adm. Code, is 7.41 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 7.40 s.u. Therefore, a value of 7.41 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 7.41 s.u. into the equation above yields an ATC = 22.66 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-Q₁₀ 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-Q₁₀ (estimated as 80 % of 7-Q₁₀) and the 2×ATC approach are shown below.

Daily Maximum Ammonia Nitrogen Determination

	Ammonia Nitrogen Limit mg/L
2×ATC	45.31
1-Q ₁₀	1233

The 2×ATC method yields the most stringent limits for the Wausau Water Works Wastewater Treatment Facility.

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, since those limits relate to the assimilative capacity of the receiving water.

Weekly average and monthly average limits for ammonia nitrogen are based on chronic toxicity criteria in ch. NR 105, Wis. Adm. Code.

The 30-day chronic toxicity criterion (CTC) for ammonia in waters classified as Warm Water Sport Fish Community is calculated by the following equation, according to subchapter IV of NR 106, Wis. Adm. Code.

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

Where:

pH = the pH (s.u.) of the receiving water,

E = 0.854,

C = the minimum of 2.85 or $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Present), or

C = $1.45 \times 10^{(0.028 \times (25 - T))}$ – (Early Life Stages Absent), and

T = the temperature (°C) of the receiving water – (Early Life Stages Present), or

T = the maximum of the actual temperature (°C) and 7 – (Early Life Stages Absent)

The 4-day criterion is equal to the 30-day criterion multiplied by 2.5. The 4-day criteria are used in a mass-balance equation with the 7-Q₁₀ (4-Q₃, if available) to derive weekly average limitations. And the 30-day criteria are used with the 30-Q₅ (estimated as 85% of the 7-Q₂ if the 30-Q₅ 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 °C, 25% of the flow is used if the Temperature < 11 °C, and 50% of the flow is used if the Temperature ≥ 11 °C but < 16 °C.

The “default” basin assumed values are used for temperature and background ammonia concentrations, because minimum ambient data is available. The values for pH are based on data collected from the Wisconsin River. These values are shown in the table below, with the resulting criteria and effluent limitations.

Weekly and Monthly Ammonia Nitrogen Limits – WWSF

		April & May	June- September	October- March
Effluent Flow	Q _e (MGD)	8.200	8.200	8.200
Background Information	7-Q ₁₀ (cfs)	850	850	850
	7-Q ₂ (cfs)	1380	1380	1380
	Ammonia (mg/L)	0.07	0.07	0.14
	Temperature (°C)	15.6	23.9	10.6
	pH (s.u.)	7.38	7.40	7.48
	% of Flow used	50	100	25
	Reference Weekly Flow (cfs)	425	850	213
	Reference Monthly Flow (cfs)	587	1173	293
Criteria mg/L	4-day Chronic			
	Early Life Stages Present	11.27	6.46	11.14
	Early Life Stages Absent	11.27	6.46	14.38
	30-day Chronic			
	Early Life Stages Present	4.51	2.58	4.45
	Early Life Stages Absent	4.51	2.58	5.75
Effluent Limitations mg/L	Weekly Average			
	Early Life Stages Present	386	435	195
	Early Life Stages Absent			
	Monthly Average			
	Early Life Stages Present	210	235	104
	Early Life Stages Absent			

Effluent Data

The following table evaluates the statistics based upon ammonia data reported from January 2022 to August 2024, with those results being compared to the calculated limits to determine the need to include ammonia limits in the Wausau Water Works Wastewater Treatment Facility permit for the respective month ranges.

Ammonia Nitrogen Effluent Data	
	Ammonia Nitrogen mg/L
1-day P ₉₉	N/A
4-day P ₉₉	N/A
30-day P ₉₉	N/A
Mean*	0.80
Std	2.26
Sample size	24
Range	<0.13 - 7.015

Based on this comparison, there is no reasonable potential for the discharge to exceed any of the calculated ammonia nitrogen limits. **Monthly monitoring is recommended in the reissued permit.**

PART 4 – WATER QUALITY-BASED EFFLUENT LIMITATIONS FOR BACTERIA

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.

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.

E. coli monitoring is recommended at the same frequency that fecal coliform monitoring is required in the current permit. Because the Wausau Water Works Wastewater Treatment Facility permit requires weekly monitoring, the 410 counts/100 mL limit will effectively function as a daily maximum limit unless the facility performs additional monitoring. Any additional monitoring beyond what is required by the permit must also be reported on the DMR as required in the standard requirements section of the permit.

These limits are required during May through September. No changes are recommended to the required disinfection season.

Effluent Data

The Wausau Water Works Wastewater Treatment Facility has monitored effluent *E. coli* from August 2022 to July 2023 and a total of 20 results are available. A geometric mean of 126 counts/100 mL was never exceeded, with a maximum monthly geometric mean of 9 counts/100 mL. Effluent data never exceeded 410 counts/100 mL. The maximum reported value was 39 counts/100 mL. Based on this effluent data it appears that the facility can meet new *E. coli* limits and a compliance schedule is not needed in the reissued permit.

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.

Because the Wausau Water Works Wastewater Treatment Facility currently has an existing technology-based limit, it remains applicable unless a more stringent WQBEL is given.

TMDL Limits – Phosphorus

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

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

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

Attachment #1

$$\begin{aligned}\text{TP Equivalent Effluent Concentration} &= \text{Daily WLA} \div (\text{Flow Rate} * \text{Conversion Factor}) \\ &= 25.038 \text{ lbs/day} \div (8.200 \text{ MGD} * 8.34) \\ &= 0.37 \text{ mg/L}\end{aligned}$$

Since this value is greater than 0.3 mg/L, the WLA should be expressed as a monthly average mass limit for total phosphorus and no six-month average limit is required.

$$\begin{aligned}\text{TP Monthly Average Permit Limit} &= \text{Daily WLA} * \text{Monthly average multiplier} \\ &= 25.038 \text{ lbs/day} * 1.35 \\ &= 34 \text{ lbs/day}\end{aligned}$$

The multiplier used in the monthly average calculation was determined according to TMDL implementation guidance. A coefficient of variation was calculated, based on phosphorus mass monitoring data, to be 0.7. This is greater than the CV used for the previous evaluation and facility is able to meet the permit limits based on the WLA, so the previous CV of 0.6 is used. This value, along with monitoring frequency, is used to select the multiplier. The current permit specifies phosphorus monitoring as 5/week; if a different monitoring frequency is used, the stated limits should be reevaluated.

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

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

Effluent Data

The following table lists the statistics for effluent phosphorus levels from January 2022 to October 2024 for informational purposes. In the cases where reporting the mass discharge is not required in the current permit, the mass is calculated using the reported phosphorus concentration and the effluent flow rate for that day.

Total Phosphorus Statistics

	Concentration (mg/L)	Mass Discharge (lbs/day)
1-day P ₉₉	1.57	56.80
4-day P ₉₉	0.91	33.02
30-day P ₉₉	0.58	20.98
Mean	0.43	15.63
Std	0.31	11.20
Sample Size	740	740
Range	0.035 - 2.262	1.03 - 74.29

Conclusions:

In summary, the following limits are recommended by this evaluation:

- Total Phosphorus concentration limit of 1.0 mg/L
- Monthly average Total Phosphorus mass limit of 34 lbs/day

**PART 6 – WATER QUALITY-BASED EFFLUENT LIMITATIONS
FOR THERMAL**

Surface water quality standards for temperature took effect on October 1, 2010. These regulations are detailed in chs. NR 102 (Subchapter II – Water Quality Standards for Temperature) and NR 106 (Subchapter V – Effluent Limitations for Temperature) of the Wisconsin Administrative Code. Daily maximum and weekly average temperature criteria are available for the 12 different months of the year depending on the receiving water classification.

Due to the amount of upstream flow available for dilution in the limit calculation, the lowest calculated limitation is 120° F. For activated sludge treatment systems of domestic waste, there is no reasonable potential for the discharge to exceed this limit. **Therefore, no temperature limits or monitoring are recommended.**

PART 7 – 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 LC50 (Lethal Concentration to 50% of the test organisms) greater than 100% effluent, according to s. NR 106.09(2)(b), Wis. Adm. Code.

Attachment #1

- 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 IC₂₅ (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 6%** 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 = 8.200 MGD = 12.687 cfs

f = fraction of the Q_e withdrawn from the receiving water = 0

Q_s = ¼ of the 7-Q₁₀ = 850.00 cfs ÷ 4 = 212.50 cfs

- According to the *State of Wisconsin Aquatic Life Toxicity Testing Methods Manual*, 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.
- 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, upstream and out of the influence of the mixing zone and any other known discharge. 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.

Attachment #1

WET Data History

Date Test Initiated	Acute Results LC ₅₀ %				Chronic Results IC ₂₅ %					Footnotes
	<i>C. dubia</i>	Fathead minnow	Pass or Fail?	Used in RP?	<i>C. dubia</i>	Fathead Minnow	Algae (IC ₅₀)	Pass or Fail?	Use in RP?	or Comments
10/24/1991					>70	>70		Pass	No	1
11/29/1994					46	27		Pass	No	1
01/31/1995					37.7	52.1		Pass	No	1
05/09/1995	>100	>100	Pass	No	48.1	42.4				1
04/22/1997	>100	>100	Pass	No	>80	>80		Pass	No	1
03/10/1998	>100	>100	Pass	No	>80	>80		Pass	No	1
10/11/2000	>100	>100	Pass	No						1
09/13/2001	>100	>100	Pass	No	>100	>100		Pass	No	1
06/25/2002	>100	>100	Pass	No	>100	>100		Pass	No	1
03/18/2003	70.7	67.5	Fail	No	47.5	61.37		Pass	No	1
05/21/2003	>100	>100	Pass	No						1
06/11/2003	>100	>100	Pass	No						1
12/10/2003	>100	>100	Pass	No						1
03/08/2005	>100	>100	Pass	No	0.37	>100		Fail	No	1
05/19/2005					>100	>100		Pass	No	1
06/02/2005					43.3	56.1		Pass	Yes	
05/02/2006	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
09/11/2007	>100	>100	Pass	Yes	63.59	>100		Pass	Yes	
12/09/2008	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
03/12/2009	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
03/08/2011	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
06/12/2012	>100	>100	Pass	Yes	44.2	>100		Pass	Yes	
08/06/2013	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
11/04/2014	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
02/10/2015	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
07/16/2019	<100	>100	Pass	Yes	>100	>100		Pass	Yes	
02/23/2021	>100	>100	Pass	Yes	>100	>100		Pass	Yes	
02/07/2023	>100	>100	Pass	Yes	81	>100		Pass	Yes	
02/27/2024	>100	>100	Pass	Yes	>100	>100		Pass	Yes	

Footnotes:

1. *Data Not Representative.* Significant changes were made to WET test methods in 2004 and these changes were assumed to be fully implemented by certified labs by no later than June 2005.

- According to s. NR 106.08, Wis. Adm. Code, WET reasonable potential is determined by multiplying the highest toxicity value that has been measured in the effluent by a safety factor, to predict the likelihood (95% probability) of toxicity occurring in the effluent above the applicable WET limit. The safety factor used in the equation changes based on the number of toxicity detects in the dataset. The fewer detects present, the higher the safety factor, because there is more uncertainty surrounding the predicted value. WET limits must be given, according to s. NR 106.08(6), Wis. Adm. Code, whenever the applicable Reasonable Potential equation results in a value greater than 1.0.

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

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

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

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

Chronic WET Limit Parameters

TUc (maximum) 100/IC25	B (multiplication factor from s. NR 106.08(6)(c), Wis. Adm. Code, Table 4)	IWC
100/43.3 = 2.3 TUc	2.6 Based on 4 detects	6%

$$[(TUc \text{ effluent})(B)(IWC)] = 0.36 < 1.0$$

Therefore, no reasonable potential is shown for a chronic WET limit using the procedures in s. NR 106.08(6) and representative data from 2005 to 2024.

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

Page 19 of 22

Wausau Water Works Wastewater Treatment Facility

	Acute	Chronic
AMZ/IWC	Not Applicable. 0 Points	IWC = 6% 0 Points
Historical Data	13 tests used to calculate RP. No tests failed. 0 Points	14 tests used to calculate RP. No tests failed. 0 Points
Effluent Variability	Little variability, no violations or upsets, consistent WWTF operations. 0 Points	Same as Acute. 0 Points
Receiving Water Classification	Warm Water Sport Fish (WWSF) (5 pts) 5 Points	Same as Acute. 5 Points
Chemical-Specific Data	No reasonable potential for limits based on ATC. Ammonia, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Pentachlorophenol, and Chloride detected. (3 pts) Additional Compounds of Concern: Heptachlor Epoxide (2 pts) 5 Points	No reasonable potential for limits based on CTC. Ammonia, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc, Pentachlorophenol, and Chloride detected. (3 pts) Additional Compounds of Concern: Heptachlor Epoxide (2 pts) 5 Points
Additives	Two water quality conditioners (2 pts) added. Permittee has proper P chemical SOPs in place. 2 Points	All additives used more than once per 4 days. 2 Points
Discharge Category	18 Industrial Contributors (20 pts) 20 Points	Same as Acute. 20 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:	32 Points	32 Points
Recommended Monitoring Frequency (from Checklist):	1x yearly	1x yearly
Limit Required?	No	No
TRE Recommended? (from Checklist)	No	No

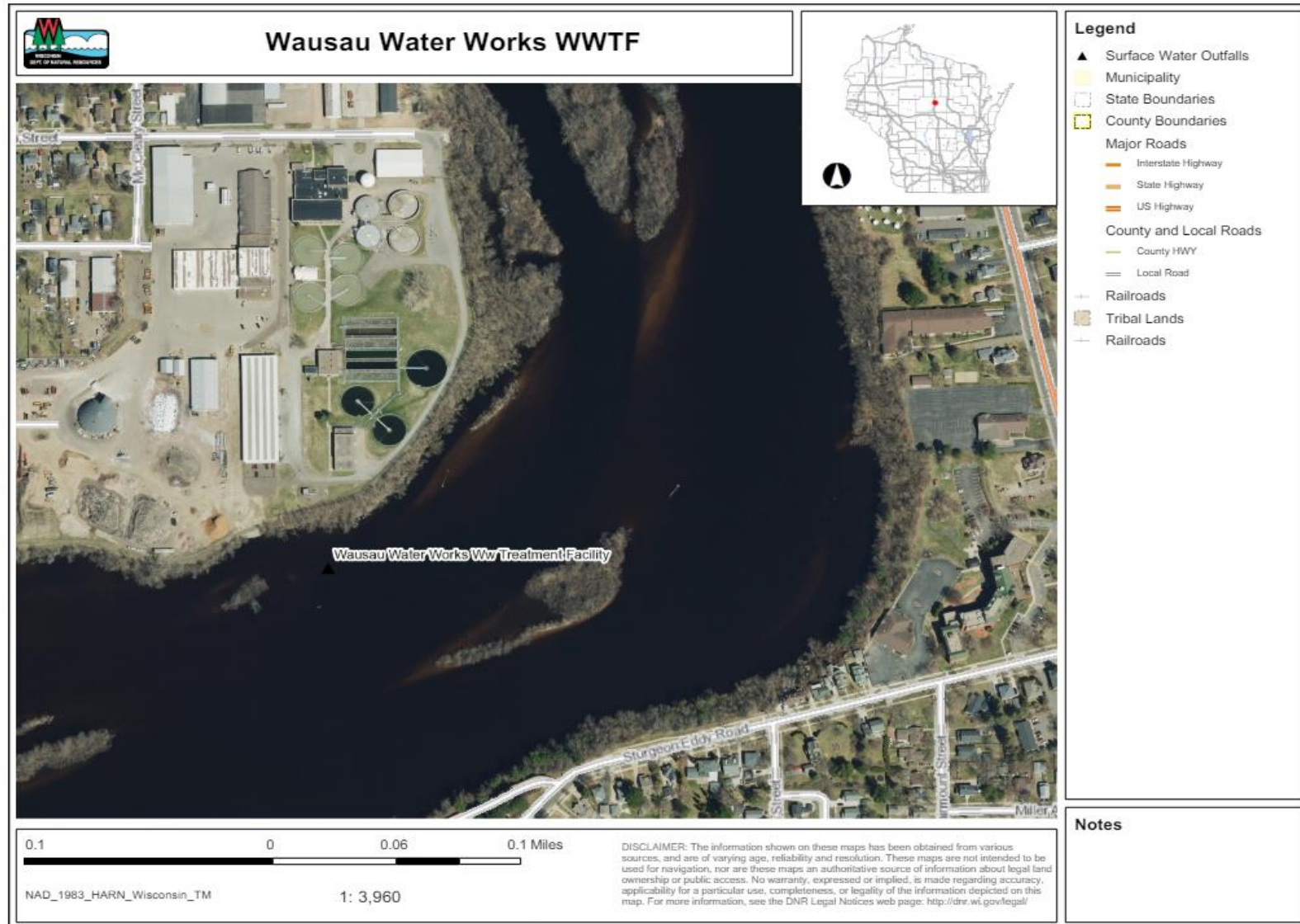
- After consideration of the guidance provided in the Department's WET Program Guidance Document (2022) and other information described above, annual acute and chronic WET tests are recommended in the reissued permit. Sampling WET concurrently with any chemical-specific toxic substances is recommended. Tests should be done in rotating quarters, to collect seasonal information about this discharge and should continue after the permit expiration date (until the permit is reissued).
- A minimum of annual acute and chronic monitoring is recommended because the Wausau Water Works 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.

Temperature limits for receiving waters with unidirectional flow

(calculation using default ambient temperature data)

Facility:	Wausau Water Works WWTF	7-Q₁₀:	850.00	cfs	Temp Dates	Flow Dates
Outfall(s):	001	Dilution:	25%		Start:	N/A 01/01/22
Date Prepared:	11/21/2024	f:	0		End:	N/A 10/31/24
Design Flow (Q_e):	8.200 MGD	Stream type:	Upper Wisconsin River			
Storm Sewer Dist.	0 ft	Q_s:Q_e ratio:	16.7	:1		
		Calculation Needed?	YES			

Month	Water Quality Criteria			Receiving Water Flow Rate (Q _s) (cfs)	Representative Highest Effluent Flow Rate (Q _e)		f	Representative Highest Monthly Effluent Temperature		Calculated Effluent Limit	
	T _a (default)	Sub- Lethal WQC	Acute WQC		7-day Rolling Average (Q _{esl})	Daily Maximum Flow Rate (Q _{ea})		Weekly Average	Daily Maximum	Weekly Average Effluent Limitation	Daily Maximum Effluent Limitation
	(°F)	(°F)	(°F)		(MGD)	(MGD)		(°F)	(°F)	(°F)	(°F)
JAN	33	49	76	212.50	4.327	4.711	0			NA	120
FEB	33	50	76	212.50	4.200	4.654	0			NA	120
MAR	35	52	76	212.50	6.217	7.848	0			NA	120
APR	44	55	78	212.50	7.203	8.695	0			NA	120
MAY	60	65	82	212.50	7.481	8.726	0			NA	120
JUN	70	75	85	212.50	9.658	13.163	0			NA	120
JUL	75	80	86	212.50	5.728	6.326	0			NA	120
AUG	73	79	85	212.50	6.112	7.138	0			NA	120
SEP	65	72	84	212.50	4.844	5.552	0			NA	120
OCT	51	61	80	212.50	6.311	8.048	0			NA	120
NOV	39	50	77	212.50	4.770	5.005	0			NA	120
DEC	33	49	76	212.50	4.201	4.646	0			NA	120



Ben Brooks

From: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>
Sent: Monday, November 3, 2025 1:23 PM
To: Doug Diny; Ben Brooks; Kevin Fabel
Cc: Lindstrom, Nicholas E - DNR
Subject: Wausau WPDES Permit to Fact Check Due~11/10
Attachments: Final Wausau WQBEL 12 2024.pdf; Wausau Draft Permit-FC.pdf; Wausau FS-FC.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

WDNR email correspondence

Some people who received this message don't often get email from angela.parkhurst@wisconsin.gov. [Learn why this is important](#)

Hello,

I have attached below a draft of your proposed Wausau WPDES draft permit, associated draft permit fact sheet and Water Quality Based Effluent Limits memo (WQBEL) for your fact check review.

I am sending you this information at this time for a couple of reasons.

First, please consider this a courtesy to notify you that you can expect to see a public notice of the proposed permit and related documents in the next month or so.

Second, this is a quality control check. We would like to get it right the first time and need your help to correct any possible factual errors. This is an informal process for improving draft permit quality.

At this time we are requesting your comments only reflect factual inaccuracies in the permit or supporting documents. Comments related to permit conditions should be made during the public comment period. The department can informally discuss concerns with permit conditions but will not provide an official response to comments on permit conditions until after the public comment period has ended. Be aware that if you provide comments on permit conditions during this quality control check, you will need to make those same comments during the public comment period.

We are providing **1 week** for your quality control check of the permit before we continue with the next steps of the permitting process. If we agree with you on identified errors, we will create a new draft permit with appropriate changes prior to moving forward to the next steps in the process. If we have questions on your suggestions, we may contact you further for clarification.

Please let us know of any factual inaccuracies you find in the draft permit and supporting documents within **1 week**.

Next Steps

Following the normal reissuance process, the next step in the process is to make any appropriate changes and then public notice the proposed permit for 30 days. We will provide a courtesy copy of the changes made to the permit but will not be able to provide the opportunity for a second quality control check time period prior to public notice. Whether or not we make changes to the permit based on your previous suggestions, the formal public notice period provides another opportunity for you to make comments.

Any comments made by you or other interested parties that we receive during the 30-day public notice comment period will be formally responded to in a document called the notice of final determination. That document will be sent to you,

a list of parties that have asked for these notifications, and all parties that provide formal comments. At that same time, the permit will be reissued.

Thank you,

Angela Parkhurst

Wastewater Specialist – Bureau of Water Quality

Wisconsin Department of Natural Resources

1300 West Clairemont Ave.

Eau Claire, WI 54701

Phone: (715) 839-3836

angela.parkhurst@wisconsin.gov



dnr.wi.gov

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Ben Brooks

From: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>
Sent: Wednesday, November 12, 2025 2:44 PM
To: Ben Brooks; Doug Diny; Kevin Fabel
Cc: Lindstrom, Nicholas E - DNR; Hegeman, Frederick J - DNR; Bittencourt, Geisa B - DNR
Subject: RE: Wausau WPDES Permit to Fact Check Due~11/10

Follow Up Flag: Follow up
Flag Status: Flagged

Hello Ben,

Thank you for your comments during the fact check process. Please note the responses to your comments and concerns below. Also note that Fred will be reaching out to you to clarify the Class A sludge approval process.

Angela Parkhurst

Phone: (715) 839-3836

angela.parkhurst@wisconsin.gov

Our core values include professionalism, integrity, and customer service.

Please visit our [survey](#) to provide feedback on your experience interacting with any DNR employee.

From: Ben Brooks <Ben.Brooks@wausauwi.gov>
Sent: Monday, November 10, 2025 9:15 PM
To: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>; Doug Diny <Doug.Diny@wausauwi.gov>; Kevin Fabel <Kevin.Fabel@wausauwi.gov>
Cc: Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>
Subject: RE: Wausau WPDES Permit to Fact Check Due~11/10
Importance: High

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Angela, additional discrepancies noted on Background Informational sheet prepared by Benjamin P. Hartenbower, Draft Fact Sheet and Draft WPDES Permit.

Background Information prepared by Benjamin P. Hartenbower

- 1.) Pg. 10 Of 22: PFOS and PFOA: The results shown on this page were inconclusive and sample date is not included here. I know which data is referenced here and it clearly states on the lab report that these samples were not verified correctly. I will send you this report for verification purposes if you would like. Sample times and dates were unknown making holding time of Wastewater Effluent sample unknown. These Wastewater Effluent results should have never been used for predicting future PMP criteria or future limits. Re-sampling was never undergone so this data should have never been used in the WDNR calculations.

As stated in the fact sheet, effluent sampling for PFOS/PFOA is required by code for all major facilities, regardless of results:

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 major municipal dischargers with an average flow rate greater than 1 MGD but less than 5 MGD, at a minimum sample effluent once every two-months for PFOS and PFOA pursuant s. NR 106.98(2)(b), Wis. Adm. Code.

Also, the second action item in the associated compliance schedule in the fact sheet and permit states the determination of need doesn't occur until 2 yrs of data have been collected. This will allow more representative data to be collected before decisions are made.

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.	12/31/2027
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Draft Fact sheet:

- 1.) Pg. 2 of 20. Substantial Compliance Determination: Enforcement dates of Non's are incorrect and Compliance determination made by Nick Lindstrom is incorrect. Date listed have not occurred yet. Please revise to reflect the true dates.
The dates have been corrected, thank you for catching those.
- 2.) Pg. 3 of 20: Sample Point Descriptions; Sample point 006. Dust collection waste is collected at sample point and disposed of in dumpsters which is picked up by the local solids waste collection service and disposed of at the landfill appropriately. A log book of each disposal date is kept and is documented for verification purposes.
This comment can be made during the public notice process to be addressed more thoroughly.
- 3.) Pg. 5 of 20: 1.1.2 Explanation of Limits and monitoring Requirements: Pretreatment Program. Design flow is 8.2 MGD, not more than 5.0 MGD.
The 5.0 MGD is the threshold level for pretreatment requirements, not the actual design flow of the treatment plant.
- 4.) Pg. 7 of 20: 3.1 Sample Point Number: 001- Effluent To Wisconsin River. Mercury, Total Recoverable. New Fact sheet reads 24 hr. composite sample and old Permit reads Grab sample. The new fact sheet and draft permit should reflect the old permit language to read Grab sample required, not composite sample. Please reflect this change on revised Draft Permit and Fact Sheet.
The sample type has been changed to grab.

WPDES Draft Permit:

- 1.) Pg 2. 1.2.1.3 ; Mercury monitoring and Pg.3 2.2.1.1 Mercury Monitoring section; A set of samples may include combination of "intake", Influent, Effluent or other samples all collected on the same day. Please describe "intake" It should read only Influent, and Effluent only. Any inhouse process control monitoring is not subject to reporting purposes.

This is standard language that is meant to apply to a variety of facilities.

Pg. 30, 5.1 Mercury Pollutant Minimization Summary. Due Date 12/31/2029. Monthly monitoring is required only. Why is there a compliance schedule that requires a Final Mercury Report on 12/31/29? Mercury results are reported monthly on the DMR and that alone should be sufficient data to provide factual data that Wausau is already meeting compliance. Why is a summary report needed at the end of 2029 when you have monthly data to support this already? Unnecessary additional work required from Wausau.

This is an end of permit report for any facility that no longer has a mercury limit to ensure minimization efforts have continued.

These are the required changes that I have found thus far and I will let you know if I find any others upon further review.

Please let me know if you have any questions and please provide explanation to my first email response regarding biosolids, Fred Hegeman and future permit modification's.

Fred will be reaching out to you do discuss the Class A sludge approval letter shortly.

Thank you,

BEN BROOKS

Superintendent

Wausau Waterworks -Wastewater

430 Adrian Street

Wausau, Wi. 54401

Office: 715-261-6941

Email: Ben.Brooks@wausauwi.gov



From: Ben Brooks

Sent: Monday, November 10, 2025 2:56 PM

To: 'Parkhurst, Angela - DNR' <Angela.Parkhurst@wisconsin.gov>; Doug Diny <Doug.Diny@wausauwi.gov>; Kevin Fabel <Kevin.Fabel@wausauwi.gov>

Cc: Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>

Subject: RE: Wausau WPDES Permit to Fact Check Due~11/10

Importance: High

Angela, regarding the Class A, EQ Biosolids status.

The Draft Permit doesn't recognize Wausau as producing Class A, EQ Biosolids. Is this because the Draft Permit was issued without Fred Hegemans Class A Biosolids information and approval?

If this is the case, will the Permit be modified to include Class A once they have approval from Fred, is this the WDNR's plan? If so, this will generate unnecessary extra work going through the permit modification process once we receive final approval from Fred.

I will reply with other comments shortly, but needed to ask this question first.

Please

Thank you,

BEN BROOKS

Superintendent

Wausau Waterworks -Wastewater

430 Adrian Street

Wausau, Wi. 54401

Office: 715-261-6941

Email: Ben.Brooks@wausauwi.gov



From: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>

Sent: Monday, November 3, 2025 1:23 PM

To: Doug Diny <Doug.Diny@wausauwi.gov>; Ben Brooks <Ben.Brooks@wausauwi.gov>; Kevin Fabel <Kevin.Fabel@wausauwi.gov>

Cc: Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>

Subject: Wausau WPDES Permit to Fact Check Due~11/10

Some people who received this message don't often get email from angela.parkhurst@wisconsin.gov. [Learn why this is important](#)

Hello,

I have attached below a draft of your proposed Wausau WPDES draft permit, associated draft permit fact sheet and Water Quality Based Effluent Limits memo (WQBEL) for your fact check review.

I am sending you this information at this time for a couple of reasons.

First, please consider this a courtesy to notify you that you can expect to see a public notice of the proposed permit and related documents in the next month or so.

Second, this is a quality control check. We would like to get it right the first time and need your help to correct any possible factual errors. This is an informal process for improving draft permit quality.

At this time we are requesting your comments only reflect factual inaccuracies in the permit or supporting documents. Comments related to permit conditions should be made during the public comment period. The department can informally discuss concerns with permit conditions but will not provide an official response to comments on permit conditions until after the public comment period has ended. Be aware that if you provide comments on permit conditions during this quality control check, you will need to make those same comments during the public comment period.

We are providing **1 week** for your quality control check of the permit before we continue with the next steps of the permitting process. If we agree with you on identified errors, we will create a new draft permit with appropriate changes prior to moving forward to the next steps in the process. If we have questions on your suggestions, we may contact you further for clarification.

Please let us know of any factual inaccuracies you find in the draft permit and supporting documents within **1 week**.

Next Steps

Following the normal reissuance process, the next step in the process is to make any appropriate changes and then public notice the proposed permit for 30 days. We will provide a courtesy copy of the changes made to the permit but will not be able to provide the opportunity for a second quality control check time period prior to public notice. Whether or not we make changes to the permit based on your previous suggestions, the formal public notice period provides another opportunity for you to make comments.

Any comments made by you or other interested parties that we receive during the 30-day public notice comment period will be formally responded to in a document called the notice of final determination. That document will be sent to you, a list of parties that have asked for these notifications, and all parties that provide formal comments. At that same time, the permit will be reissued.

Thank you,

Angela Parkhurst

Wastewater Specialist – Bureau of Water Quality
Wisconsin Department of Natural Resources
1300 West Clairemont Ave.
Eau Claire, WI 54701
Phone: (715) 839-3836
angela.parkhurst@wisconsin.gov



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Ben Brooks

From: Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Sent: Wednesday, November 12, 2025 4:32 PM
To: Ben Brooks
Cc: Hegeman, Frederick J - DNR
Subject: RE: Wausau WPDES Permit Comments & Additional Info Request

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Ben,

I am working on the Class A treatment process approval letter at the moment. I am hoping to get this out yet today if I can avoid additional other topic interruptions.

The SMP review will be delayed. The Class A treatment process approval letter will state that Wausau should follow the draft SMP until the SMP is approved and/or if an update is requested (standard language).

Ben, I am triaging everything. Due to the number of vacancies and the number of expired permits, management emphasis is on permit issuance/reissuance (and everything else deemed a priority.)

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Frederick J. Hegeman, P.E.

Statewide Residuals Coordinator – Water Quality Bureau/Environmental Management Division
Wisconsin Department of Natural Resources

From: Ben Brooks <Ben.Brooks@wausauwi.gov>
Sent: Wednesday, November 12, 2025 4:14 PM
To: Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Cc: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>; Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>; Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Subject: Re: Wausau WPDES Permit Comments & Additional Info Request

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Fred, thank you for clarifying.

The SMP and all related dryer information has been sent to you for your review already and all we are waiting for is final approval from you.

You should find that all related info already sent to you show compliance with Class A sludge so all we need is your approval.

Please let me know if you have any further questions.

Thank you,
Ben Brooks

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From: Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Sent: Wednesday, November 12, 2025 3:30:36 PM
To: Ben Brooks <Ben.Brooks@wausauwi.gov>
Cc: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>; Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>; Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Subject: RE: Wausau WPDES Permit Comments & Additional Info Request

Hi Ben,
You provided all the information I need relating to the Veolia Biocon Dryer. Thank you.

Thank you for addressing the confusion relating to the Class A Approval and the Class A outfalls in the WPDES permit. I understand the confusion my last message.

- The Class A approval and the WPDES permit are individual approvals.
- Both are needed to allow for EQ sludge distribution.
- The SMP approval is also needed. However, the SMP is a living document and is required outside the first two approvals.

Thank you.
Fred

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Frederick J. Hegeman, P.E.

Statewide Residuals Coordinator – Water Quality Bureau/Environmental Management Division
Wisconsin Department of Natural Resources

From: Ben Brooks <Ben.Brooks@wausauwi.gov>
Sent: Wednesday, November 12, 2025 3:19 PM
To: Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Cc: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>; Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>
Subject: RE: Wausau WPDES Permit Comments & Additional Info Request
Importance: High

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Fred, can you please provide explanation as to how the distribution of EQ/Class A and Class A approval are not interrelated.

Dryer Info:

Manufacturer: Veolia Biocon Dryer

Model: SD8318-IO
Veolia Project No. 5700249004

As far as what sets our Veolia Biocon Dryer apart from other models offered by Veolia, I'm unfamiliar with other models offered by Veolia so this make it difficult for me to answer this question.
If you would like, I can reach out to the Veolia Rep and ask him this question and provide you with a definite answer.

Thank you,

BEN BROOKS

Superintendent
Wausau Waterworks -Wastewater
430 Adrian Street
Wausau, Wi. 54401
Office: 715-261-6941
Email: Ben.Brooks@wausauwi.gov



From: Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Sent: Wednesday, November 12, 2025 2:43 PM
To: Ben Brooks <Ben.Brooks@wausauwi.gov>
Cc: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>; Lindstrom, Nicholas E - DNR <Nicholas.Lindstrom@wisconsin.gov>; Hegeman, Frederick J - DNR <Frederick.Hegeman@wisconsin.gov>
Subject: Wausau WPDES Permit Comments & Additional Info Request

Hi Ben,

Angie sent me a copy of your email responding to the draft WPDES permit which contained comments and questions. The WPDES permit is being updated so Wausau is able to distribute EQ/Class A. It is not interrelated with the Class A approval.

Per your comment about the approval letter for the Class A, could you provide to me the following details relating to the dryer:

- manufacturer and more particularly the model number
- any other identifying info relating to the dryer itself that distinguishes itself from other models by the manufacturer

Thanks!

Fred

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Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.

Frederick J. Hegeman, P.E.

Statewide Residuals Coordinator – Water Quality Bureau/Environmental Management Division
Wisconsin Department of Natural Resources

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Ben Brooks

From: Parkhurst, Angela - DNR <Angela.Parkhurst@wisconsin.gov>
Sent: Monday, November 17, 2025 9:34 AM
To: Doug Diny; Ben Brooks; Kevin Fabel
Cc: Lindstrom, Nicholas E - DNR
Subject: Public Notice - Proposed Wausau Waterworks WPDES Permit
Attachments: Final Wausau WQBEL 12 2024.pdf; Wausau FS-PN.pdf; Wausau Draft Permit-PN.pdf

Hello,

The proposed Wausau Waterworks WPDES draft permit will be public noticed on November 20th in the Wausau Daily Herald with a 30 day comment period. The proposed permit, fact sheet, and related documents will be available for the 30 day comment period, as well as attached for your convenience. The documents will also be available during that time to view/download from the DNR website through the link provided below.

** Final date for submission of public comment is 12/22/25 by 4:30pm CST.*

<http://dnr.wi.gov/topic/wastewater/PublicNotices.html>

Please send me any comments and let me know if you have any questions in regards to this process.

Thank you!

Angela Parkhurst

Wastewater Specialist – Bureau of Water Quality
Wisconsin Department of Natural Resources
1300 West Clairemont Ave.
Eau Claire, WI 54701
Phone: (715) 839-3836
angela.parkhurst@wisconsin.gov



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Ben Brooks

From: Klara A. Henry <khenry@staffordlaw.com>
Sent: Friday, November 7, 2025 2:44 PM
To: Ben Brooks
Cc: Vanessa Wishart
Subject: RE: Wausau WPDES Permit to Fact Check Due~11/10

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Flag Status: Flagged

MEG
Response

You don't often get email from khenry@staffordlaw.com. [Learn why this is important](#)

Hi Ben,

As part of Wausau's MEG Wastewater membership, Vanessa and I took a look at your draft WPDES permit. As a reminder, the permit review we offer to our MEG members is based on our evaluation of terms in your permit as compared to regulatory requirements and other permits we have seen. This review is part of Wausau's MEG membership and does not mean we have been engaged as legal counsel for Wausau. We also encourage you to speak to your engineer or consultant to review the technical aspects of your permit.

We have outlined below in some detail our comments on Wausau's draft permit for your consideration. The new items relate to PFOS/PFOA monitoring, phosphorus updates, WET testing updates, PFAS compounds monitoring in biosolids, E. Coli replacing fecal coliform, mercury limit updates, and total nitrogen monitoring.

1. **PFOS/PFOA.** Like most permittees, Wausau is being required to monitor for PFOS and PFOA starting this permit cycle, with monitoring required every two months. The sample type is listed as grab. You also have an option of choosing continuous sampling, but our understanding is that grab samples are more convenient for PFAS testing and obviate the need for as many field blank tests. The permit also includes requirements for a PFAS minimization plan determination of need, which is also standard in permits we are seeing reissued with PFAS monitoring requirements. Whether you need to implement that plan will depend on the sampling results collected over the next two years.
2. **Phosphorus.** The total phosphorus concentration limit of 1.0 mg/L and monthly average TP mass limit of 34 lbs/day is effective in this permit, in order to comply with requirements of the Wisconsin River TMDL. It appears that these limits became effective during the last permit term, and that Wausau can meet them.
3. **WET testing.** The new permit does not impose WET limits, which is very positive, as we are seeing more and more WET limits included in permits as a result of how reasonable potential is calculated. As a major municipal discharger, chronic and acute WET testing will be required annually.
4. **Biosolids monitoring for PFAS.** DNR began including annual PFAS monitoring requirements for biosolids in reissued permits. Like all other permits we've seen, Wausau is being required to sample for the full range of PFAS compounds based on DNR's list of PFAS compounds. EPA recently released a draft risk assessment regarding PFAS in biosolids—we may see some revisions to how DNR handles potential PFAS in biosolids following that EPA assessment, but your permit is unlikely to change for the next five years.
5. **Biosolids sampling.** We understand Wausau is constructing an upgrade to its biosolids treatment process to produce Class A biosolids. To facilitate the reuse of biosolids, the new permit adds additional sample points and outfalls.
6. **Mercury.** Based on sampling data, the new permit removes the mercury limit and replaces it with monthly monitoring requirements and PMP reporting obligation in 2029. It appears that Wausau is not at risk of violating the water quality standard of 1.3 ng/L for Mercury, based on the calculations in the factsheet. However, if Wausau has concerns about the mercury levels in its effluent, you should raise that with your permit consultant to see whether you should be reapplying for a mercury variance. If you do not receive a

continued variance in this permit, you would not be able to reapply for one at the next reissuance if you have an issue meeting the surface water quality standards.

7. **E coli.** Permittees are being required to largely transition from fecal coliform to E. coli limits based on rule changes that went into effect in 2020. The limits for E. coli, which are incorporated to protect recreational use standards, apply during the standard recreational use disinfection season of May – September. This is very positive, as we have recently seen many permittees with extended disinfection requirements. Monitoring requirements for E. coli remain at the same frequency that fecal coliform monitoring was required, so we don't expect this update to be too onerous. Wausau is not getting a compliance schedule for E. coli, but you should certainly raise this with DNR if you believe you need one.
8. **Total nitrogen monitoring.** As a major municipal discharger, Wausau is being required to monitor for total nitrogen on a quarterly basis. This is a standard requirement across permits.

Best,

Klara

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Klara Henry | Attorney

khenry@staffordlaw.com | 608.259.2682 | cell 847.708.6690

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From: Vanessa Wishart <VWishart@staffordlaw.com>

Sent: Monday, November 3, 2025 3:42 PM

To: Ben Brooks <Ben.Brooks@wausauwi.gov>

Cc: Klara A. Henry <khenry@staffordlaw.com>

Subject: RE: Wausau WPDES Permit to Fact Check Due~11/10

Hi Ben,

We would be happy to review the Wausau permit. This is just the fact check period, so you will have this opportunity and then the public comment period to provide a review. We will make sure to get back to you by the end of this week so that you can incorporate any applicable comments into your factcheck review.

Best Regards,

Vanessa

STAFFORD
ROSENBAUM
LLP

Vanessa Wishart |

VWishart@staffordlaw.com | 608.210.6307 |

222 West Washington Avenue, Suite 900

P.O. Box 1784 | Madison, Wisconsin 53701-1784

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