STATE OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES

NOTICE OF FINAL DETERMINATION TO REISSUE A WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM (WPDES) GENERAL PERMIT NO. WI-0046540-06-0

General Permit Name: Water Treatment and Conditioning

Receiving Water and Location: Surface waters and groundwaters in the state of Wisconsin.

Brief Description of Facilities Covered under General Permit: This general permit is applicable to discharges of backwash water, regeneration water, concentrate or reject water, washwater, drainage water, and decant or dewatering water, or other similar wastewaters from applicable water treatment or conditioning processes that are discharged to surface waters or indirectly to groundwaters via seepage. Water treatment and conditioning processes eligible for this general permit may include: iron/manganese removal processes, demineralizers, ion exchangers, lime and soda ash softeners, coagulation units, granular media filters, and membrane filtration units.

Permit Drafter's Name, Address, Phone and Email: Trevor J. Moen, DNR, 625 E County Rd Y STE 700, Oshkosh WI 54904-9731, phone: (920) 424-7883 and email: Trevor.Moen@Wisconsin.gov.

Date Permit Signed/Issued: September 23, 2019
Date of Effectiveness: January 1, 2020
Date of Expiration: December 31, 2024

Following the public notice period, the Department has made a final determination to reissue the WPDES General Permit No. WI-0046540-06-0. The information from the WPDES permit file, comments received on the proposed permit and applicable Wis. Adm. Codes were used as a basis for this final determination.

The Department has the authority to issue, modify, suspend, revoke and reissue or terminate WPDES permits and to establish effluent limitations and permit conditions under ch. 283, Wis. Stats.

Any minor corrections to typographical errors, updating page numbers and headers/footers, adding and updating the Table of Contents and titles, correcting formatting, renumbering headings, and web links are not included in this summary document. The following is a summary of significant comments and any significant changes which have been made in the terms and conditions set forth in the draft permit:

Changes Initiated by the Department:

- The effective date has been changed from November 1, 2019 to January 1, 2020 to facilitate reapplication from existing permittees and to avoid time when they will be operating without permit coverage.

Comments Received from the Applicants, Individuals or Groups

The Department received comments from Richard Goetz with Standard Process, listed below, on the draft permit.

Standard Process Comment #1:

The requirement for daily observation and recording for Total Recoverable Iron included in Section 3.2.1 of the draft permit appears to be excessive and will be extremely difficult to complete. The following items are offered in support of changing this requirement to a less frequent period in the final permit:

- Our facility is not staffed every day and consequently we would not have the ability to make daily visual inspections. Even modifying the requirement from daily to every work day would still present significant challenges and would be very difficult to implement.
- The sample frequency for iron is the only physical parameter with a daily requirement. Longer sample frequencies appear to be acceptable for all other parameters (including heavy metals such as cadmium, chromium, and lead) and therefore, a longer sample frequency for iron should certainly be acceptable, and would also be consistent with other sampling requirements.
- One of our notable Green Tier successes was eliminating the practice of hauling iron filter regeneration water to an offsite location for disposal by redirecting it, through the WPDES program, to discharge on site. This significantly reduced the amount of wastewater hauled from our Farm operations, and returned it to the watershed where it originated. Unfortunately, if the daily monitoring requirement is included in the

final permit, we will likely need to evaluate our ability to continue with the current practice of direct discharge and it is very likely that we would resume hauling the water offsite for disposal.

For these reasons, we respectfully request the daily requirement associated with iron be changed to a more reasonable frequency consistent with other parameters.

Department Response:

The Department has reduced the sampling frequency for the visual inspection of total recoverable iron from daily to monthly under Section 3.2.1 and Section 3.12. If the permittee does visually inspect the discharge for total recoverable iron more frequently than monthly, the visual inspection results must be reported to the Department.

The Department received comments from Dan Greve with MSA Professional Services, Inc., listed below, on the draft permit.

MSA Comment #1:

Most iron/manganese water treatment plants that discharge backwash water to surface water will discharge the backwash to settling tanks, which overflow to surface water. Will it be acceptable to sample from the settling tank between sampling events, or does sampling need to occur during the backwash event?

Department Response:

The general permit states that samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water. Also, sampling is only required when wastewater is being discharged during the reporting period. Therefore, grab samples may be taken at the settling tank itself or from the overflow of the settling tank at a location prior to discharge to surface water. If there is no overflow discharge to a surface water during a month or other reduced monitoring frequency, then sampling for the parameters is not required. However, the reports shall be submitted regardless of whether or not a discharge occurs.

MSA Comment #2:

The requirement for Total Suspended Solids monitoring specifies that sampling occur during the first five minutes of backwash. At most water treatment plants backwash is automated, therefore the operating staff may not be present during most backwash events. Will the operating staff need to initiate backwash manually once per month in order to obtain the required monthly sample?

Department Response:

The general permit states that samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water. If initiating backwash manually once per month is necessary to obtain a representative sample then the permittee will have to perform this activity to meet the requirement.

However, as stated if most water treatment plants discharge the backwash to settling tanks which overflow to surface water then representative grab samples shall be taken at the settling tank itself or from the overflow of the settling tank at a location prior to discharge to surface water. If there is no overflow discharge to a surface water during a month or other reduced monitoring frequency, then sampling for the parameters is not required. However, the reports shall be submitted regardless of whether or not a discharge occurs.

The Department has updated Section 3.5 to read as follows:

3.5 Total Suspended Solids (TSS)

The permittee shall monitor the discharge for TSS and limit the TSS concentration to 40 mg/L or less. For the filter backwash water discharges, the TSS grab sample shall be taken during the first five minutes of backwashing if the permittee does not provide treatment/storage of the backwash water. If the permittee provides treatment/storage of the backwash water, grab samples shall be taken following treatment/storage at a location prior to discharge to surface waters. The monthly average limit of 40 mg/L applies to continuous dischargers only.

MSA Comment #3:

The draft permit requires visual inspection of the backwash on a daily basis, to establish that there is no visible color as a demonstration of low levels of total recoverable iron. When in the backwash cycle is this visual inspection proposed to take place? As indicated above, most (or all) iron/manganese removal plants discharge to settling tanks.

It would seem that the visual inspection needs to occur at the discharge from the settling tanks (after treatment). As also indicated above, at most water treatment plants backwash is automated, therefore the operating staff may not be present during most backwash events. Will the operating staff need to initiate backwash manually every day in order to satisfy the daily sample frequency for monitoring total recoverable iron? Please clarify how the total recoverable iron monitoring frequency and sample type should be satisfied.

Department Response:

See the department response to Standard Process Comment #1 above about the change in sampling frequency for iron visual inspection.

The general permit states that samples taken shall be representative of the discharge that consists solely of the treated effluent before mixing with any other water. Also, sampling is only required when wastewater is being discharged during the reporting period. Therefore, iron visual inspections shall be recorded on the overflow of the settling tank prior to discharge to surface water. If there is no overflow discharge to a surface water during a month or other reduced monitoring frequency, then visual inspection for iron is not required. If initiating backwash manually once per month is necessary to obtain a representative sample, then the permittee will have to perform this activity to meet the requirement.

The Department has updated Section 3.12 to read as follows:

3.12 Total Recoverable Iron

The permittees shall on a monthly basis visually inspect the discharge following treatment/storage (if necessary) and prior to discharge to surface water for a yellowish or reddish-brown color and record the results in a monthly log. The presence of yellowish or reddish-brown color in the discharge shall be considered an exceedance of the narrative permit limit and shall be reported to the department. The permit requires total recoverable iron monitoring and limits only if the discharge is from an iron/manganese removal process.

MSA Comment #4:

What test method is required for total residual chlorine in order to determine compliance with the weekly average limit of 7.3 ug/L?

Department Response:

Chapter NR 219, Wis. Adm. Code, specifies the department approved test methods for total residual chlorine. In accordance with s. NR 106.07(6m)(a), Wis. Adm Code, the permittee shall perform monitoring required in the permit using an acceptable analytical methodology for total residual chlorine in the effluent which produces the lowest limit of detection and limit of quantitation. When the effluent limitation is less than the limit of detection, effluent levels less than the limit of detection are in compliance with the effluent limitation. When the effluent limitation is less than the limit of detection, effluent levels greater than the limit of detection, but less than the limit of quantitation are in compliance with the effluent limitation except when analytically confirmed and statistically confirmed by a sufficient number of analyses of multiple samples and use of appropriate statistical techniques. The department may require in a permit additional monitoring when effluent levels are between the limit of detection and the limit of quantitation. When the effluent limitation is greater than the limit of detection, but less than the limit of quantitation effluent levels less than the limit of detection or less than the limit of quantitation are in compliance with the effluent limitation.

The department has added Section 7.3.14 to the general permit that explains the requirement from s. NR 106.07(6m), Wis. Adm Code. Section 7.3.14 reads as follows:

7.3.14 Effluent Limits Less than LOD or LOQ

When an effluent limitation for any substance in this permit is less than the limit of detection (LOD) or the limit of quantitation (LOQ), the following conditions shall apply:

(a) The permittee shall perform monitoring required in this permit using an acceptable analytical methodology for that substance in the effluent which produces the lowest LOD and LOQ.

(b) The permittee shall determine the LOD and LOQ using a test method specified in ch. NR 219, Wis. Adm. Code.

(c) Compliance with concentration limitations shall be determined as follows:

1. When the effluent limitation is less than the LOD, effluent levels less than the LOD are in compliance with the effluent limitation.

2. When the effluent limitation is less than the LOD, effluent levels greater than the LOD, but less than the LOQ are in compliance with the effluent limitation except when analytically confirmed and statistically confirmed by a sufficient number of analyses of multiple samples and use of appropriate statistical techniques.

3. When the effluent limitation is greater than the LOD, but less than the LOQ effluent levels less than the LOD or less than the LOQ are in compliance with the effluent limitation.

MSA Comment #5:

Where sodium permanganate is utilized, is monthly monitoring for sodium permanganate required in lieu of monitoring for potassium permanganate? If so, would the same weekly limit of 0.77 ug/L apply?

Department Response:

Where sodium permanganate is utilized, the effluent limits and monitoring for potassium permanganate are not applicable. However, the use of the sodium permanganate shall be reviewed and approved, in writing, by the department. Water treatment additive review is only required for substances that may enter surface water or groundwater without receiving treatment or substances that are used in a water treatment process but are not expected to be removed by wastewater treatment. The permittee shall submit a copy of the Additive Review Worksheet (Form 3400-213) to the department with safety data sheets that include ecotoxicity information. If the department determines that requires a usage restriction and effluent limits, the department is required to public notice those proposed limits prior to the limits becoming effective and implemented through this general permit. The public notice period is to last 30-days and be issued in a newspaper of general circulation in the area affected by the discharge and the department's public notice webpage. The effluent limitations, limit type, and sample type for substances will be stated in the additive use approval letter.

MSA Comment #6:

Why are daily maximum limits proposed, when far more stringent weekly average limits will control especially since the sampling frequency is monthly?

Department Response:

For continuous discharges as defined in s. NR 205.03 (9g) and not subject to ch. NR 210, limitations shall be expressed as daily maximum and average monthly discharge limitations. Some of the limits in this permit are based on the acute and chronic water quality criteria in Table 1 and Table 5 of s. NR 105.06, Wis. Adm. Code or secondary chronic values. Section NR 106.07(4)(b), Wis. Adm. Code, states that limits based on acute water quality criteria or secondary values shall be expressed as a daily maximum limitation. Section NR 106.07(4)(c), Wis. Adm. Code, states that limits based on chronic water quality criteria or secondary values shall be expressed as a weekly average limitation. If a daily maximum and weekly average limitation are determined necessary for a pollutant then the monthly average limitation shall still be included in the permit and shall be set equal to the daily maximum or weekly average limitation, whichever is more restrictive.

Weekly average limits and monthly average limitations are only applicable to continuous discharges. Continuous discharge means a facility that discharges 24 hours per day on a year−round basis except for temporary shutdowns for maintenance or other similar activities. The Department has updated the general permit to clarify that weekly average and monthly average limits only apply to continuous discharges.

MSA Comment #7:

There are many different configurations of backwash disposal at water treatment plants statewide. Does the Department have a sufficient database to establish that none of the effluent limits proposed for surface water or groundwater discharge will be problematic for the vast majority of water treatment plants in the State?

Department Response:

The Department does not have a sufficient database to establish that none of the effluent limits proposed for surface water or groundwater discharge will be problematic for the vast majority of water treatment plants in the State. Therefore, the Department has included a compliance schedule under Section 7 to allow existing permittees more time to come into compliance with new or more stringent effluent limitations in the general permit. The compliance

schedule to applicable to the following new or more stringent effluent limitations: total residual chlorine, dissolved oxygen, chloride, potassium permanganate, total recoverable manganese, or total recoverable iron limits specified in Section 3.2.1 or any effluent limit specified in Section 4.2.1. The compliance schedule shall only be granted to existing permittees that were previously covered under WPDES Permit No. WI-0046540-05-0 and that demonstrate that effluent limits are not readily achievable. The permit allows 3-years for existing permittees to meet the new or more stringent effluent limitations in accordance with s. NR 106.117(3)(a), Wis. Adm. Code. No later than 14 days following each due date, the permittee shall notify the department in writing of its compliance or noncompliance with the required action in the compliance schedule pursuant to s. NR 106.117(3)(f), Wis. Adm. Code.

The Department has included Section 7 that reads as follows:

7 Schedules

7.1 Compliance Schedule for Effluent Limitations

The department may grant a compliance schedule to existing permittees that need time to achieve compliance with new or more stringent effluent limits contained in this general permit. The existing permittees must have been previously covered under WPDES Permit No. WI-0046540-05-0. The compliance schedule is only applicable to the following effluent limits: total residual chlorine, dissolved oxygen, chloride, potassium permanganate, total recoverable manganese, or total recoverable iron limits specified in Section 3.2.1 or any effluent limit specified in Section 4.2.1. Existing permittees shall submit a compliance schedule request with the NOI to the department if effluent limits are not readily achievable. The compliance schedule listed below will become effective for each effluent limit requested upon approval by the department in the coverage letter. No later than 14 days following each due date, the permittee shall notify the department in writing of its compliance or noncompliance with the required action in compliance schedule.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent concentrations with conclusions regarding compliance.	January 1, 2021
Action Plan: Submit an action plan for complying with the effluent limit(s) if determined necessary by the Department. If the action plan calls for treatment upgrades or installation, submit final construction plans and specification to the Department for plan review.	July 1, 2021
Initiate Actions: Initiate actions identified in the plan.	January 1, 2022
Complete Actions: Complete actions necessary to achieve compliance with final effluent limit(s).	January 1, 2023

MSA Comment #8:

Where backwash water is recycled to the head of the plant, the concentration of various parameters in the backwash water that is ultimately discharged is increased. Is the Department confident that none of the effluent limits proposed for surface water or groundwater discharge will be problematic for water treatment plants that recycle backwash, or perhaps even prevent the recycle of backwash?

Department Response:

The Department recognizes that some of the effluent limits proposed for surface water or groundwater discharge may be problematic for water treatment plants that recycle backwash. Therefore, the Department has included a compliance schedule under Section 7 to allow existing permittees more time to come into compliance with new or more stringent effluent limitations in the general permit. Please the Department response to MSA comment #7 above for more information.

The Department received comments from Anthony Mach with Neenah Water Utility, listed below, on the draft permit.

Neenah Comment #1

Our system consists of an open lagoon system. The amount of softener sludge and backwash water pumped to the lagoon is provided by magnetic flow meters. Is this acceptable for the purpose of estimating the outfall?

Department Response:

"Total daily" used to specify the type of sample for flow measurement, means the determination of daily flow from at least one measurement when daily frequency is specified. The flow rate may be estimated based on water balance, an uncalibrated weir, readings of a water meter on the discharge, computation from the operating period of one or more calibrated pumps handling the flow, or calculations from the velocity and cross section of the discharge in accordance with s. NR 218.04(15), Wis. Adm. Code. The permittee may request, in writing, the approval of an additional method for estimating flow. Neenah Water Utility shall use one the above methods to estimate the total daily flow that discharge from the lagoon system into Lake Winnebago.

The Department has updated Sections 3.4 and 4.4 to clarify which methods of estimating the flow rate are acceptable. Sections 3.4 and 4.4 read as follows:

3.4 Flow Rate

The permittee shall estimate the total daily flow rate of the discharge. The flow rate may be estimated based on water balance, an uncalibrated weir, readings of a water meter on the discharge, computation from the operating period of one or more calibrated pumps handling the flow, calculations from the velocity and cross section of the discharge or any other approved flow estimating methods in s. NR 218.04(15), Wis. Adm. Code. The permittee may request, in writing, the approval of an additional method for estimating flow.

4.4 Flow Rate

The permittee shall estimate the total daily flow rate of the discharge. The flow rate may be estimated based on water balance, an uncalibrated weir, readings of a water meter on the discharge, computation from the operating period of one or more calibrated pumps handling the flow, calculations from the velocity and cross section of the discharge or any other approved flow estimating methods in s. NR 218.04(15), Wis. Adm. Code. The permittee may request, in writing, the approval of an additional method for estimating flow.

Neenah Comment #2:

The filter backwash flows to the waste washwater basin, which is then pumped to the lagoons. The lagoons provide significant settling. The backwash, waste washwater basin, and pumping to the lagoon are closed systems. Sampling from the first five minutes of the backwash is therefore not possible, nor applicable due to settling in the lagoon.

Department Response:

See the Department response to MSA Comment #2 above about changes to the sampling location for treated filter backwash discharges.

Neenah Comment #3:

The lagoon outfall has a pH that is higher than 9.0 s.u. Therefore, the operators of a lime softening plant, we will be requesting the daily maximum pH of 11.0 s.u. for the discharge.

Department Response:

Thank you for notifying the Department of your request. Existing permittees will have to reapply under this general permit. During the reapplication process, Neenah Water Utility can provide the request for higher pH maximum limits.

Neenah Comment #4:

Can a definition of "Chlorine-based additives" be provided?

Department Response:

There are no definitions of chlorine-based additives in Wisconsin Administrative Codes or State Statutes. However, chlorine-based additives include any water treatment additive that contains chlorine. Typical chlorine-based additives used in water treatment disinfection include: chlorine gas, sodium hypochlorite, calcium hypochlorite, or chlorine dioxide.

Neenah Comment #5:

What standard method(s) would quality for testing Total Residual Chlorine of wastewater at the sampling site at 19 µg/L or 7.3 µg/L assuming interferences are present? Are there field approved methods (if not, please see the following comment)?

a. Sampling at the lagoon outfall, replacing the manhole cover, traveling to the exit, locking the gate traveling to the plant, arriving at the plant lab, and analyzing the sample is estimated be greater than 15 minutes. Therefore, the maximum holding time for residual chlorine cannot be achieved for non-field approved methods.

Department Response:

See the department response to MSA Comment #4 above about approved total residual chlorine test methods and determining compliance when an effluent limitation for any substance in this permit is less than the limit of detection (LOD) or the limit of quantitation (LOQ). Please work with the department if additional help is needed with chlorine sampling logistics.

Neenah Comment #6:

With regard to sampling for Chlorides, is the differentiation between lime softening and softening clear (perhaps reference as ion exchange softening)? That is, lime softening does not utilize Chloride salts, thus no sampling need be required.

Department Response:

The department has updated Sections 3.9 and 4.5 to clarify that chloride monitoring and limits only apply to discharges from demineralizers or ion exchange treatment processes. Sections 3.9 and 4.5 read as follows:

3.9 Chlorides

The permittee shall monitor and limit the discharge for chlorides in accordance with Section 3.2.1 except if the department approves a higher chloride limit based on Section 3.9.1. The weekly and monthly average limits apply to continuous dischargers only. Chloride monitoring and limits in this permit are only effective if the discharge is from demineralizers or ion exchange treatment processes.

4.5 Dissolved Chlorides

The permittee shall monitor the discharge for chlorides and limit the chloride concentration of the discharge to the levels in Section 4.2.1. Chloride monitoring and limits in this permit are only effective if the discharge is from demineralizers or ion exchange treatment processes.

Neenah Comment #7:

Our facility uses sodium permanganate at the intake only. Are therefore exempt from testing? Does this testing apply to green sand regeneration or similar processes only? See the following questions if applicable:

a. What method(s) would qualify for testing potassium permanganate residual at 14 µg/L and 0.77 µg/L?

   Note: Method 43500-$KMnO_4$ has a method detection level (MDL) of 0.083 mg/L (83 µg/L) per the 23rd edition of Standard Methods.

b. What EPA approved or NR 219 approved method(s) for testing $KMnO_4$ residual in wastewater are available?

Department Response:

Where sodium permanganate is utilized, the effluent limits and monitoring for potassium permanganate are not applicable. However, the use of the sodium permanganate shall be reviewed and approved, in writing, by the

department. Water treatment additive review is only required for substances that may enter surface water or groundwater without receiving treatment or substances that are used in a water treatment process but are not expected to be removed by wastewater treatment. If you believe residual sodium permanganate will be removed by water treatment, then additive review is not necessary and limits may not apply. The permittee shall submit a copy of the Additive Review Worksheet (Form 3400-213) to the department with safety data sheets that include ecotoxicity information. If the department determines that sodium permanganate requires a usage restriction and effluent limits, the department is required to public notice those proposed limits prior to the limits becoming effective and implemented through this general permit. The public notice period is to last 30-days and be issued in a newspaper of general circulation in the area affected by the discharge and the department's public notice webpage. The effluent limitations, limit type, and sample type for substances will be stated in the additive use approval letter.

Potassium permanganate monitoring limits only apply to discharges from iron/manganese removal processes which may include green sand regeneration or other similar processes.

Spectrophotometric Method #4500 – $KMNO_4$ from the Standard Methods for the Examination of Waters and Wastewater is the only know method for testing for residual potassium permanganate. The Department requires that this method be used until a ch. NR 219 or EPA approved test method becomes available. See the department response to MSA Comment #4 above about determining compliance when an effluent limitation for any substance in this permit is less than the limit of detection (LOD) or the limit of quantitation (LOQ).

Neenah Comment #8:

Can you define "water treatment process that uses polyphosphates additives?"

Department Response:

There are no definitions of water treatment process that uses polyphosphates additives in Wisconsin Administrative Codes or State Statutes. However, polyphosphate and phosphate additives include any water treatment additive that contains polyphosphates or phosphates. Total phosphorus is the sum of all orthophosphates and condensed phosphates, soluble and particulate, as well as organic and inorganic fractions. Typical orthophosphates, polyphosphates, condensed phosphates, and other phosphate additives used in water treatment include: phosphoric acids, monosodium phosphate, disodium phosphate, trisodium phosphate, monopotassium phosphate, dipotassium phosphate, tricalcium phosphate, sodium acid pyrophosphate, sodium trimetaphosphate, tetrasodium pyrophosphate, sodium tripolyphosphate, tetrapotassium pyrophosphate, tetrapotassium pyrophosphate, and sodium hexametaphosphate.

Neenah Comment #9:

Are we precluded from immediately applying for a reduced sampling frequency per Section 3.3 because our pH may be outside the range of 6.0 to 9.0 s.u., or 6.5 to 8.5 s.u., as applicable to Paragraphs 1 and 2 of Section 3.3 (RE: lime softening)?

Department Response:

Permittees with lime softening who request a higher maximum pH limit of 11.0 are not eligible for reduced frequencies. Lime softening with high maximum pH limits require regular monthly pH monitoring and reporting to ensure that the system is functioning properly.

Neenah Comment #10:

An excerpt from the first paragraph:

"This permit requires that all monitoring data be submitted on an electronic discharge monitoring report (eDMR) in accordance with s. NR 205.07(1)(r), Wis. Adm. Code. Monitoring forms are due 21 days following the end of the reporting period. For instance, if a parameter is to be sampled monthly, the monitoring results are due 21 days following the end of each month."

Thus, as flow rate needs to be sampled daily (even if there no flow), the DMR will need to be prepared and reported daily.

Department Response:

There is no daily DMR for reporting daily flows. Daily flow samples will be reported on a monthly DMR. The monthly DMR will list each day of the month to report daily flows. For days when there is no flow, those days shall be reported as zero.

The Department has updated Sections 3.2.1, 4.2.1, 3.3, 4.3, and 7.1.1 to clarify the reporting frequency for parameters.

The Department received comments from Marc Morandi with Alliant Energy Corporation, listed below, on the draft permit.

Alliant Comment#1:

WPL finds that the additional sampling requirements will put a significant burden on SFDL. The current Potable Water Treatment and Conditioning permit requires only quarterly sampling for Flow Rate, Total Suspended Solids (TSS), pH, and Potassium Permanganate, and annual sampling for Metals and Hardness for our surface water discharge. Even though we will no longer be subject to Potassium Permanganate or Metals sampling due to our treatment methods, the proposed permit increases the frequency of our current sampling as monitoring requirements move from quarterly and annual samples to monthly sampling. Not only will the frequency of our current sampling increase, but we will be subject to monitoring additional parameters as well. Under the proposed permit, SFDL will also have to start sampling the following parameters: Dissolved Oxygen (monthly), Chloride (monthly), Total Recoverable Manganese (monthly), and Total Recoverable Iron (daily visual inspection). Under the current permit, we are obligated to carry out 21 sampling events per year (5 parameters with quarterly samples, 1 parameter with an annual sample). Under the proposed permit, we will be required to perform 60 sampling events per year, which does not even take into account the daily flow sampling or daily visual inspections for Total Recoverable Iron. This is a sampling burden nearly three times larger than is currently performed by a small and already strained staff at SFDL.

Department Response:

See the department response to Standard Process Comment #1 above about the reduction in iron visual inspection sampling from daily to monthly.

The sample frequency has been changed from “quarterly” to “monthly” for all parameters. This change was done to improve the effectiveness of the permit in protecting surface water quality. Additionally, this change will reduce the time period when a facility could unknowingly be out of compliance with the permit. Once the permittee has established substantial compliance with the limits and have not had any violations, the general permit does allow for reduced sampling frequencies for all parameters expect flow rate if the conditions in Section 3.3 are met. Existing permittees may use historical discharge data, if available, in the sampling and reporting frequency reduction request as long as the permittee has collected 24 representative samples of the discharge or two years of monthly discharge data. The permittee may request the sampling and reporting reduction during the reapplication process.

Alliant Comment#2:

In section 3.2.1 of the proposed permit fact sheet, there is a monthly average limit of 7.3 µg/L for Dissolved Oxygen, though the proposed permit itself does not list this limit. It is assumed that this was a typographical error in the fact sheet.

Department Response:

This is a typographical error in the fact sheet and has been changed.

The Department received comments from Karen Dettmer with Milwaukee Water Works, listed below, on the draft permit.

Milwaukee Comment #1:

Under section 3.7, the permit, “requires total residual chlorine monitoring and limits only if chlorination occurs prior to discharge or the discharge contains chlorine-based additives.” Does filter backwash that contains free chlorine, or chloramines, constitute “chlorination” in this case? Does free chlorine, or chloramine, fall under the “chlorine additive” definition? MWW does not currently dechlorinate backwash water, and the previous permit did not require dechlorination before discharge. Hence, this would require major plants and operational changes that will require sufficient time and resources to implement.

Department Response:

Total residual chlorine monitoring and limits are applicable to facilities where chlorination occurs during or ahead of the treatment process with the wastewater discharge or that discharge from the treatment of source water that contains chlorine or chlorine compounds. Discharges from these facilities are expected to contain total residual chlorine from the chlorine-based water treatment additives (i.e. chlorine gas, sodium hypochlorite, or calcium hypochlorite) added during the chlorination step or chlorine or chlorine compounds found in the source water (e.g. public water supply water) at an industrial facility. Total residual chlorine is the sum of free available chlorine residual and combined available chlorine residual. Combined available chlorine residual is the residual consisting of chlorine that is combined with ammonia, nitrogen, or nitrogenous compounds (chloramines). Free available chlorine residual is the residual consisting of hypochlorite ions (OCl-), hypochlorous acid (HOCl) or a combination of the two. If the filter backwash discharge meets the applicable conditions above then total residual chlorine monitoring and limits would apply to the discharge. However, the Department has included a compliance schedule under Section 7 to allow existing permittees more time to come into compliance with new or more stringent effluent limitations in the general permit which includes total residual chlorine.

The Department has updated the Section 3.7 to clarify when total residual chlorine monitoring and limits apply. Section 3.7 reads as follows:

3.7 Total Residual Chlorine (TRC)

The permittee shall monitor and limit the discharge for TRC in accordance with Section 3.2.1 except if the department approves a higher TRC limit based on Section 3.7.1. The weekly and monthly average limits apply to continuous dischargers only. This permit requires TRC monitoring and limits only if chlorination occurs during or ahead of the water treatment process with the wastewater discharge or the discharge comes from the treatment of source water that contains chlorine or chlorine compounds.

Milwaukee Comment #2:

MWW currently adds polyphosphates to crib carrier water before sodium hypochlorite addition to sequester the calcium and magnesium present in the water to reduce hardness precipitation in the intake mussel chlorine feed pipes; this practice is not used to sequester iron and manganese. MWW does periodically test water for total phosphorus, though levels are often low to below detection. Will this addition of polyphosphate require MWW to monitor total phosphorus from discharge? MWW adds orthophosphate as a corrosion control treatment, but this additive is only fed to plant effluent and is not discharged to Lake Michigan. In emergency situations only, distribution water could be used to backwash filters as well. This water contains orthophosphate for corrosion control.

Department Response:

Total phosphorus monitoring is applicable to facilities where polyphosphate addition occurs during or ahead of the treatment process with the wastewater discharge or that discharge from the treatment of source water that contains phosphate compounds. MMW will be required to monitoring for total phosphorus if the total phosphorus monitoring applicability is met.

The Department has updated the Section 3.14 to clarify when total phosphorus monitoring applies. Section 3.14 reads as follows:

3.14 Total Phosphorus Monitoring

This permit requires total phosphorus monitoring only if phosphate addition occurs during or ahead of the water treatment process with the wastewater discharge or the discharge comes from the treatment of source water that contains phosphate compounds.

Milwaukee Comment #3:

MWW feeds calcium thiosulfate to quench ozone. Is this considered an additive that constitutes monitoring? Calcium thiosulfate is also used to scavenge chlorine when free chlorine is used to disinfect tanks, reservoirs, and water mains in the distribution system.

Department Response:

Permittees shall not add any substance or water treatment additive to the discharge unless the use of the water treatment additive is reviewed and approved, in writing, by the department. Water treatment additive review is only required for substances that may enter surface water or groundwater without receiving treatment or substances that are used in a water treatment process but are not expected to be removed by wastewater treatment. The permittee shall submit a copy of the Additive Review Worksheet (Form 3400-213) to the department with safety data sheets that include ecotoxicity information. If the department determines that calcium thiosulfate requires a usage restriction and effluent limits, the department is required to public notice those proposed limits prior to the limits becoming effective and implemented through this general permit. The public notice period is to last 30-days and be issued in a newspaper of general circulation in the area affected by the discharge and the department's public notice webpage. The effluent limitations, limit type, and sample type for substances will be stated in the additive use approval letter.

However, since calcium thiosulfate is an oxygen scavenger, the oxygen limits in the general permit may provide adequate surface water quality protection. This determination will be evaluated in the additive review process.

The Department has updated the Section 3.8 to clarify when dissolved oxygen monitoring and limits apply. Section 3.8 reads as follows:

3.8 Dissolved Oxygen (DO)

The permittee shall monitor the discharge for DO and limit the DO of the discharge to the minimum DO levels provided in Table 1. This permit requires DO monitoring and limits only if oxygen scavenge chemical addition occurs during or ahead of the water treatment process with the wastewater discharge or the water is chemically dechlorinated prior to discharge.

Table 1. DO Limits

Stream Classification	DO Limit (mg/L)
All Surface Waters excluding trout streams	5
Trout Streams (Non-Spawning Season)	6
Trout Streams (Spawning Season)	7

Note: Classified trout streams can be found here: https://dnr.wi.gov/topic/fishing/trout/streammaps.html. Trout spawning season runs September 15th through May 15th for all classified trout streams, the Root River (Racine County), the Kewaunee River (Kewaunee County) and Strawberry Creek (Door County). The regional Department Fisheries Biologist may waive or modify timing restrictions in writing. To find your biologist and request in writing a waiver or modification of trout spawning timing restrictions for your facility, use the webpage here: https://dnr.wi.gov/topic/Fishing/people/index.html.

Milwaukee Comment #4:

The new permit refers to "metals" that are required to be monitored if the treatment plant uses membrane filtration. However, previous versions of the permit required annual monitoring for lead, copper, aluminum, and zinc for conventional treatment. Will these four metals need to be monitored annually, or monthly, for conventional treatment as they have been in the past?

Department Response:

The previous general permit (No. WI-0046540-05-0) only required metals and hardness monitoring for discharges from membrane filtration units. The reissued permit continues this requirement at a monthly sampling frequency and requires metals and hardness monitoring and limits only if the discharge is from a membrane filtration unit. Metals monitoring and limits do not apply to discharges from conventional treatment.

Comments Received from EPA or Other Government Agencies

No comments were received from EPA or any other government agencies.

As provided by s. 283.63, Wis. Stats., and ch. 203, Wis. Adm. Code, persons desiring further adjudicative review of this final determination may request a public adjudicatory hearing. A request shall be made by filing a verified petition for review with the Secretary of the Department of Natural Resources within 60 days of the date the permit was signed (see permit signature date above). Further information regarding the conduct and nature of public adjudicatory hearings may be found by reviewing ch. NR 203, Wis. Adm. Code, s. 283.63, Wis. Stats., and other applicable law, including s. 227.42, Wis. Stats.

Information on file for this permit action, including the draft permit and fact sheet may be reviewed on the internet at the above web link or may be inspected and copied at the permit drafter's office during office hours. Information on this permit may also be obtained by calling the permit drafter or by writing to the Department. Reasonable costs (usually 20 cents per page) will be charged for copies of information in the file other than the public notice, permit and fact sheet. Pursuant to the Americans with Disabilities Act, reasonable accommodation, including the provision of informational material in an alternative format, will be made to qualified individuals upon request.