WPDES PERMIT

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

PERMIT TO DISCHARGE UNDER THE WISCONSIN POLLUTANT DISCHARGE ELIMINATION SYSTEM

KLONDIKE CHEESE CORP

is permitted, under the authority of Chapter 283, Wisconsin Statutes, to discharge from a facility located at
W7839 Hwy 81, Monroe, Wisconsin in Green County
to
an Unnamed Tributary of Skinner Creek in the Jordan and Skinner Creeks Watershed (SP01-2) in the Sugar Pecatonica River Basin And Groundwaters Of The Sugar Pecatonica River Drainage Basin via Two Land Treatment Systems And Land Application

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 _____
Lisa Creegan
Wastewater Field Supervisor

_____
Date Permit Signed/Issued

PERMIT TERM: EFFECTIVE DATE - December 01, 2023 **EXPIRATION DATE - September 30, 2028**
MODIFICATION EFFECTIVE DATE – February 1, 2027

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1 Surface Water Requirements

1.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, WasteType/Sample Contents and Treatment Description (as applicable)**
002	Noncontact cooling water, reverse osmosis concentrate from well water deionization, and RO permeate from whey processing discharged to a small feeder tributary that joins a larger tributary that leads to Skinner Creek. Samples are collected under the coagulator where the inlet of the gravity discharge pipe is located within the facility between the feta plant and milk intake area. The samples for dissolved oxygen and temperature are sampled north of Hwy 81 prior to discharge from the effluent ditch to the small feeder tributary.

1.2 Monitoring Requirements and Effluent Limitations

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

1.2.1 Sampling Point (Outfall) 002 – NCCW, RO, RO Whey Permeate to Trib

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Continuous	
BOD5, Total	Daily Max	8.2 mg/L	3/Week	Grab	May-September
BOD5, Total	Daily Max	16 mg/l	3/Week	Grab	October - April
BOD5, Total	Weekly Avg	5.0 mg/L	3/Week	Grab	May-September
BOD5, Total	Weekly Avg	10.0 mg/L	3/Week	Grab	October - April
BOD5, Total	Monthly Avg	5.0 mg/L	3/Week	Grab	May-September
BOD5, Total	Monthly Avg	10.0 mg/L	3/Week	Grab	October - April
BOD5, Total	Daily Max	76 lbs/day	3/Week	Calculated	
BOD5, Total	Monthly Avg	38 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Daily Max	16 mg/L	3/Week	Grab	
Suspended Solids, Total	Weekly Avg	10 mg/L	3/Week	Grab	
Suspended Solids, Total	Monthly Avg	10 mg/L	3/Week	Grab	
Suspended Solids, Total	Daily Max	96 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Monthly Avg	48 lbs/day	3/Week	Calculated	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	7.0 mg/L	5/Week	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Phosphorus, Total	Monthly Avg	0.66 mg/L	3/Week	Grab	Interim limit. Final limits go into effect per the phosphorus compliance schedule.
Phosphorus, Total		lbs/day	3/Week	Calculated	Monitoring only upon permit effective date. Final mass limits go into effect per the phosphorus compliance schedule.
Temperature Maximum	Weekly Avg	68 deg F	Daily	Continuous	Limit effective November as an interim limit. Monitoring effective throughout the year. See Temperature Limit Schedule for final limits in April, May, October – December effective per the schedule.
Chloride		mg/L	Quarterly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Quarterly	Grab	
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	Grab	
Nitrogen, Total		mg/L	Quarterly	Calculated	Total Nitrogen shall be calculated as the sum of reported values for Total Kjeldahl Nitrogen and Total Nitrite + Nitrate Nitrogen.
Acute WET		TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See Whole Effluent Toxicity (WET) subsections for monitoring dates and WET requirements.
Chronic WET		TUc	See Listed Qtr(s)	24-Hr Flow Prop Comp	See Whole Effluent Toxicity (WET) subsections for monitoring dates and WET requirements.
Arsenic, Total Recoverable		µg/L	Once	Grab	
Cadmium, Total Recoverable		µg/L	Once	Grab	
Chromium, Total Recoverable		µg/L	Once	Grab	
Lead, Total Recoverable		µg/L	Once	Grab	

Monitoring Requirements and Effluent Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nickel, Total Recoverable		µg/L	Once	Grab	
Zinc, Total Recoverable		µg/L	Once	Grab	
Nitrogen, Ammonia (NH3-N) Total		mg/L	Quarterly	Grab	Minimum 4 samples required.
Copper, Total Recoverable		µg/L	Quarterly	Grab	Minimum 4 samples required.
Hardness, Total as $CaCO_3$		mg/L	Quarterly	Grab	Minimum 4 samples required. Samples shall be taken on the same day as required Copper samples.

1.2.1.1 pH – Grab Sample Analyses

When pH Field limit(s) or monitoring are included in a permit, the permittee shall comply with the following conditions:

- The permittee shall perform pH testing required in this permit using an approved method from ch. NR 219, Wis. Adm. Code, Table B,
- The permittee shall utilize a pH probe/meter that incorporates and uses automatic temperature compensation,
- The permittee shall analyze pH samples as soon as possible after collection not to exceed 15 minutes (this may mean transporting samples to an offsite laboratory is not an option), and
- The permittee shall calibrate the pH probe/meter daily, using unexpired 4, 7, and 10 buffers prior to use.

1.2.1.2 Dissolved Oxygen (DO) – Grab Sample Analyses

When dissolved oxygen (DO) grab limit(s) or monitoring are included in a permit, the permittee shall comply with the following conditions:

- The permittee shall perform DO testing required in this permit using an approved method from ch. NR 219, Wis. Adm. Code, Table B,
- The permittee shall utilize a DO probe/meter that incorporates and uses automatic temperature compensation,
- The permittee shall set the barometric pressure on the DO meter to local elevation and not sea level,
- The permittee shall analyze DO samples as soon as possible after collection not to exceed 15 minutes (this may mean transporting samples to an offsite laboratory is not an option), and

The permittee shall calibrate the DO probe/meter daily prior to use.

1.2.1.3 Effluent Temperature Monitoring

For manually measuring effluent temperature, grab samples should be collected at 6 evenly spaced intervals during the 24-hour period. Alternative sampling intervals may be approved if the permittee can show that the maximum effluent temperature is captured during the sampling interval. For monitoring temperature continuously, collect measurements in accordance with s. NR 218.04(13). This means that discrete measurements shall be recorded at intervals of not more than 15 minutes during the 24-hour period. In either case, report the maximum temperature measured during the day on the DMR. For seasonal discharges collect measurements either manually or continuously during the period of operation and report the daily maximum effluent temperature on the DMR.

1.2.1.4 Effluent Temperature Limitations

Limits for Temperature, Maximum: The effluent limitations for "Temperature, Maximum" become effective at permit reissuance. Monitoring is required 3X/week upon permit reissuance and Daily upon modification. Daily maximum temperatures shall be reported so that applicable daily maximum limits can be compared to the reported daily maximum temperatures and applicable weekly average limits can be compared to the weekly averages of the reported daily maximum temperatures. The temperature limits below are effective per the Temperature Schedule.

Temperature Limitations

Month	Weekly Average Limit
April	56°F
May	66°F
October	59°F
November	46°F
December	47°F

1.2.1.5 Phosphorus Water Quality-Based Effluent Limitation(s)

The final water quality based effluent limits (WQBEL) for phosphorus are 0.225 mg/L as a monthly average, 0.075 mg/L as a six month average and 0.061 lb/day as a six month average and will take effect on the dated specified in the Compliance Schedule unless:

(A) As part of the application for the next reissuance, or prior to filing the application, the permittee submits either: 1.) A watershed adaptive management plan and a completed Watershed Adaptive Management Request Form 3200-139; or 2.) An application for water quality trading; or 3.) An application for a variance; or 4.) New information or additional data that supports a recalculation of the numeric limitation; and

(B) The Department modifies, revokes and reissues, or reissues the permit to incorporate a revised limitation before the effective date of the phosphorus WQBEL.

If Adaptive Management or Water Quality Trading is approved as part of the permit application for the next reissuance or as part of an application for a modification or revocation and reissuance, the plan and specifications submittal, construction, and final effective dates for compliance with the total phosphorus WQBEL may change in the reissued or modified permit. In addition, the numeric value of the WQBEL may change based on new information (e.g. a TMDL) or additional data. If a variance is approved for the next reissuance, interim limits and conditions will be imposed in the reissued permit in accordance with ss. 283.15 or 283.16, Stats., and applicable regulations. A permittee may apply for a variance to the phosphorus WQBEL at the next reissuance even if the permittee did not apply for a phosphorus variance as part of this permit reissuance.

Any increase in the limit is subject to s. NR 102.05(1) and ch. NR 207, Wis. Adm. Code. When a six-month average effluent limit is specified for Total Phosphorus the applicable averaging periods are May through October and November through April.

1.2.1.6 Alternative Approaches to Phosphorus WQBEL Compliance

Rather than upgrading its wastewater treatment facility to comply with WQBELs for total phosphorus, the permittee may use Water Quality Trading or the Watershed Adaptive Management Option, to achieve compliance under ch. NR 217, Wis. Adm. Code, provided that the permit is modified, revoked and reissued, or reissued to incorporate any such alternative approach. The permittee may also implement an upgrade to its wastewater treatment facility in

combination with Water Quality Trading or the Watershed Adaptive Management Option to achieve compliance, provided that the permit is modified, revoked and reissued, or reissued to incorporate any such alternative approach. If the Final Compliance Alternatives Plan concludes that a variance will be pursued, the Plan shall provide information regarding the basis for the variance.

1.2.1.7 Submittal of Permit Application for Next Reissuance and Adaptive Management or Pollutant Trading Plan or Variance Application

The permittee shall submit the permit application for the next reissuance at least 6 months prior to expiration of this permit. If the permittee intends to pursue adaptive management to achieve compliance with the phosphorus water quality based effluent limitation, the permittee shall submit with the application for the next reissuance: a completed Watershed Adaptive Management Request Form 3200-139, the completed Adaptive Management Plan and final plans for any system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code. If the permittee intends to pursue pollutant trading to achieve compliance, the permittee shall submit an application for water quality trading with the application for the next reissuance. If system upgrades will be used in combination with pollutant trading to achieve compliance with the final water quality-based limit, the reissued permit will specify a schedule for the necessary upgrades. If the permittee intends to seek a variance, the permittee shall submit an application for a variance with the application for the next reissuance.

1.2.1.8 Nitrogen Series Monitoring

Monitoring for Total Kjeldahl Nitrogen (TKN), Nitrite + Nitrate Nitrogen, and Total Nitrogen shall be conducted quarterly. Monitoring 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 testing.

1.2.1.9 Whole Effluent Toxicity (WET) Testing

Primary Control Water for Acute Tests: a synthetic (standard) laboratory water may be used as the dilution water and primary control
Primary Control Water for Chronic Tests: Unnamed Tributary of Skinner Creek, upstream of the discharge.
Instream Waste Concentration (IWC): 52%
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: Pick applicaple dilution series based on IWC:** 100, 75, 50, 25, 12.5% and any additional selected by the permittee.

WET Testing Frequency:
Acute tests are required during the following quarters:

- **Acute:** April – June 2027; January – March 2028

Chronic tests are required during the following quarters:

- **Chronic:** April – June 2027; January – March 2028

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 April – June 2027; January – March 2029.
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 also 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 emailed to the Biomonitoring Coordinator at DNRWYWETTestReporting@wisconsin.gov 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 1.9 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).

2 Land Treatment Requirements

2.1 Sampling Point(s)

The discharge(s) shall be limited to the waste type(s) designated for the listed sampling point(s).

Sampling Point Designation	
Sampling Point Number	**Sampling Point Location, Waste Description/Sample Contents and Treatment Description (as applicable)**
003	Treated dairy wastewater that is discharged to a 142.3-acre spray irrigation land treatment system. Samples are collected from one of the hydrants located throughout the spray irrigation site.
005	Pretreated Feta, Muenster and/or Yogurt process wastewater are discharged to a 5.5-acre ridge and furrow (R&F) land treatment system. Representative samples are collected from the DAF (dissolved air flotation) unit discharge pipe prior to discharging to the ridge and furrow treatment system or a discharge pipe at the R&F system.
006	Treated dairy wastewater that is discharged to a 95-acre spray irrigation land treatment system. Samples are collected from one of the hydrants located throughout the spray irrigation site.

2.2 Monitoring Requirements and Limitations

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

2.2.1 Sampling Point (Outfall) 003 - Plant Sprayfield and 006- North Sprayfield, Spray Irrigation

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	2,910 gal/ac/day	Monthly	Calculated	This limit applies May through October each year.
Hydraulic Application Rate	Monthly Avg	1,455 gal/ac/day	Monthly	Calculated	This limit applies in April and November each year.
Hydraulic Application Rate	Monthly Avg	0 gal/ac/day	Monthly	Calculated	This limit applies December through March each year.
Hydraulic Loading Rate		gal/ac/yr	Annual	Total Annual	
Nitrogen, Max Applied On Any Zone	Annual Total	300 lbs/ac/yr	Annual	Total Annual	
Chloride		lbs/ac/yr	Annual	Total Annual	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
BOD_5, Total		mg/L	2/Month	Grab	
Chloride		mg/L	2/Month	Grab	
Nitrogen, Total Kjeldahl		mg/L	2/Month	Grab	
Nitrogen, Nitrite + Nitrate Total		mg/L	2/Month	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	

Daily Log – Monitoring Requirements and Limitations

All discharge and monitoring activity shall be documented on log sheets. Originals of the log sheets shall be kept by the permittee as described under "Records Retention" in the Standard Requirements section, and if requested, made available to the Department.

Parameters	**Limit**	**Units**	**Sample Frequency**	**Sample Type**
Zone or Location Being Sprayed	-	Number	Daily	Log
Acres Being Sprayed	-	Acres	Daily	Log
Start to End Time	-	Date, Hour	Daily	Log
Discharge Source Lagoon	-	L0, L3 or L4	Daily	Log
Maximum Applied Volume	0.75 or per approved management plan	Inches/Load Cycle	Daily	Calculated
Total Hydraulic Loading		Gallon/Acre/Start of Year to current date	Monthly	See section 2.2.1.3
Total Nitrogen per Zone	300	Pounds/Acre/Start of Year to current date	Monthly	See section 2.2.1.4
Total Chloride per Zone		Pounds/Acre/Start of Year to current date	Monthly	See section 2.2.1.4

Annual Report – Monitoring Requirements and Limitations The Annual Report is due by March 31st of each year for the previous calendar year.				
Parameters	**Limit**	**Units**	**Sample Frequency**	**Sample Type**
Total Volume Per Zone	-	Gallons	Annual	Total Annual
Total Nitrogen per Zone	**300**	Pounds/Acre/Year	Annual	Calculated
Total Chloride per Zone		Pounds/Acre/Year	Annual	Calculated
Soil Analysis	-	-	Annual	Composite
Fertilizer Used	-	Pounds/Acre/Year	Annual	Total Annual

Note: Inches/load cycle = gallons/acre/load cycle divided by 27,154.

2.2.1.1 Monthly Avg Flow – LT Calculation

The monthly average discharge flow for Land Treatment systems is calculated by dividing the total wastewater volume discharged for the month by the total number of days in the month.

2.2.1.2 Irrigation Months

Discharge to the spray irrigation field shall occur only between April 15 to November 15, except that department staff may approve, by letter, spraying earlier in April and/or later in November during exceptionally warm or dry weather. During approved spraying in April and/or November, the monthly average hydraulic application rate shall be as specified in the Department approval letter. The application of wastewater shall not occur if snow cover, frozen soil, or any other condition would result in wastewater ponding or runoff.

2.2.1.3 Monthly Recording of Year to Date Hydraulic Loading

Record the calendar year cumulative hydraulic loading monthly on the facility log by adding the current month's hydraulic loading to the loading total (gallons/acre) from the previous months in the calendar year. The following method shall be used to calculate the loading for the month:

$$\frac{\text{(monthly total water to cell or zone, gallons)}}{\text{Acres of cell or zone}} = \text{month, gal/ac/month}$$

2.2.1.4 Year to Date Nitrogen and Chloride Loading Calculations

Record the calendar year cumulative nitrogen and chloride loadings monthly on the facility log by adding the current month's loading to the loading total from the previous months in the calendar year. The following method shall be used to calculate the loading for the month:

$$\frac{\text{(Ave. of samples in month, mg/L) (monthly total water to cell or zone, million gallons) (8.34)}}{\text{acres of cell or zone}} = \text{month, lbs/ac}$$

2.2.1.5 Nitrogen Loading Limitations

The 300 pound total nitrogen/acre/year loading limit for spray irrigation is continued from the previous permit.

2.2.1.6 Chloride Requirements for Spray Irrigation Systems

Since chloride is not significantly treated by the soil, the chloride level of the wastewater treated on land shall be minimized to the extent that is technically and economically feasible. The goal is to protect groundwater quality and prevent exceedance of the 125 mg/L preventive action limit in the groundwater at the point of standards application.

2.2.1.7 Spray Irrigation Site(s) - Soil Analysis

The soil at each spray irrigation site corresponding to each spray irrigation sample point (outfall) shall be tested annually for nitrate-nitrogen, available phosphorus, available potassium and pH. The soil tests shall be conducted by an approved testing facility. Before using the spray irrigation site each spring, the permittee shall submit Soil Test Reports to the Department unless an alternative schedule for annual soil nutrient testing is approved in the management plan. The results of these analyses shall be used to determine if the nutrients applied to the site are meeting the agronomic needs of the cover crop

2.2.2 Sampling Point (Outfall) 005 - Ridge and Furrrow, Ridge and Furrow

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Daily	Total Daily	
Hydraulic Application Rate	Monthly Avg	5,000 gal/ac/day	Monthly	Calculated	
BOD_5, Total		mg/L	2/Month	Grab	
Chloride		mg/L	2/Month	Grab	
Nitrogen, Total Kjeldahl		mg/L	2/Month	Grab	
Nitrogen, Nitrite + Nitrate Total		mg/L	2/Month	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	
Nitrogen, Max Applied On Any Zone	Annual Total	1,900 lbs/ac/yr	Annual	Total Annual	This limit effective for calendar year 2023.
Nitrogen, Max Applied On Any Zone	Annual Total	800 lbs/ac/yr	Annual	Total Annual	This limit effective for calendar years 2024 - 2026. Limits for following years are included in the Ridge and Furrow Loading Limitation Reduction compliance schedule.
Hydraulic Loading Rate		gal/ac/yr	Annual	Total Annual	
Chloride		lbs/ac/yr	Annual	Total Annual	

Daily Log – Monitoring Requirements and Limitations All discharge and monitoring activity shall be documented on log sheets. Originals of the log sheets shall be kept by the permittee as described under "Records Retention" in the Standard Requirements section, and if requested, made available to the Department.				
Parameters	**Limit**	**Units**	**Sample Frequency**	**Sample Type**
Cells Being Loaded	-	Cell Number	Daily	Log
Start to End Time	-	Date, Hour	Daily	Log
Discharge Source	-	Discharge Name	Daily	Log
Total Hydraulic Loading		Gallon/Acre/Start of Year to current date.	Monthly	See section 2.2.2.3
Total Nitrogen per Cell	2024-2026**: 800** per compliance schedule	Pounds/Acre/Start of Year to current date.	Monthly	See section 2.2.2.4
Total Chloride per Cell		Pounds /Acre/Start of Year to current date.	Monthly	See section 2.2.2.4

Annual Report – Monitoring Requirements and Limitations The Annual Report is due by March 31st of each year for the previous calendar year.				
Parameters	**Limit**	**Units**	**Sample Frequency**	**Sample Type**
Total Volume Per Cell	-	Gallons	Annual	Total Annual
Total Nitrogen per Cell	2024-2026**: 800** per compliance schedule	Pounds/Acre/Year	Annual	Calculated
Total Chloride per Cell	-	Pounds/Acre/Year	Annual	Calculated

2.2.2.1 Monthly Avg Flow – LT Calculation

The monthly average discharge flow for Land Treatment systems is calculated by dividing the total wastewater volume discharged for the month by the total number of days in the month.

2.2.2.2 Nitrogen Loading Limitations

The 800 pounds/acre/year total nitrogen loading limit for the Terraced Ridge & Furrow system that the Department granted to the facility for the permit reissuance (0054241-08) will be effective in calendar years 2024, 2025, and 2026. After that, the total nitrogen loading limits will be those included in the compliance schedule. See section 5.5 for the full compliance schedule.

2.2.2.3 Monthly Recording of Year to Date Hydraulic Loading

Record the calendar year cumulative hydraulic loading monthly on the facility log by adding the current month's hydraulic loading to the loading total (gallons/acre) from the previous months in the calendar year.

The following method shall be used to calculate the loading for the month:

$$\frac{\text{(monthly total water to cell or zone, gallons)}}{\text{Acres of cell or zone}} = \text{month, gal/ac/month}$$

2.2.2.4 Year to Date Nitrogen and Chloride Loading Calculations and Recording

Record the calendar year cumulative nitrogen and chloride loadings monthly on the facility log by adding the current month's loading to the loading total from the previous months in the calendar year. The following method shall be used to calculate the loading for the month:

$$\frac{\text{(most recent sample, mg/L) (monthly total water to cell or zone, million gallons) (8.34)}}{\text{acres of cell or zone}} = \text{monthly, lbs/ac}$$

3 Groundwater Requirements

3.1 Monitoring Requirements and Limitations

3.1.1 Groundwater Monitoring System for Plant Sprayfield

Location of Monitoring System: N1/2 and S1/2, Section 14, T2N, R6E, Jordan Township

Wells to be Monitored: MW-1 (801), MW-2 (802), MW-3 (803), MW-4 (804)

Well Used To Calculate Preventive Action Limits (PALs): MW-4 (804)

PALs listed in the table below have been calculated based on background groundwater quality data from this designated well. Groundwater contaminant concentrations shall be minimized and PALs met in groundwater monitoring wells to the extent it is technically and economically feasible.

Point of Standards Application Well(s): None.

Enforcement standards are to be met in groundwater located beyond the 250 foot design management zone, or beyond the property boundary, whichever is closer to the land treatment system. See the Standard Requirements section of this permit for additional conditions related to exceedance of groundwater standards.

Required Monitoring: Grab samples shall be collected from each well to be monitored per the frequency shown in the table below, except that monthly grab samples shall be collected from each new well during the first 3 months after well installation. The grab samples shall be analyzed for the parameters specified in the table below.

PARAMETER	UNITS	PREVENTIVE ACTION LIMIT	ENFORCEMENT STANDARD	FREQUENCY
Depth To Groundwater	feet	*****	N/A	Quarterly
Groundwater Elevation	feet MSL	*****	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	7.0	10	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.2	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Field	su	8.1	N/A	Quarterly
Solids, Total Dissolved	mg/L	695	N/A	Quarterly
COD, Filtered	mg/L	35	N/A	Quarterly
Iron Dissolved	µg/L	150	300	Quarterly
Manganese Dissolved	µg/L	60	300	Quarterly

3.1.1.1 Alternative Concentration Limit

An alternative concentration limit (ACL) of **7.0 mg/L** has been established for the **Dissolved Nitrite + Nitrate Nitrogen Preventative Action Limit** at this site. This ACL is authorized in conjunction with an exemption granted under s. NR 140.28, Wis. Adm. Code.

3.1.1.2 pH Preventive Action Limits

A pH monitoring result is considered to have exceeded the pH preventive action limit (PAL) for this site if the result is less than **6.1** s.u. or greater than **8.1** s.u.

3.1.1.3 Preventive Action Limits for Indicator Parameters

Preventive Action Limits (PALs) for NR 140 Indicator Parameters have been established for this site. For more information see "Indicator Parameter – Preventive Action Limits" in the Standard Requirements section.

*****PALs are not calculated for Depth to Groundwater, Groundwater Elevation, nor Total Kjeldahl Nitrogen.

3.1.2 Groundwater Monitoring System for Ridge & Furrow

Location of Monitoring System: S1/2 &NW1/4, NW 1/4, Sec. 13, T2N, R6E + NE1/4, NE1/4 Sec 14

Wells to be Monitored: MW-5 (805), MW-6 (806), MW-7 (807), MW-8 (808), MW-9 (809), MW-9P (810), MW-10 (811), MW-10P (812), MW-11 (813)

Well Used To Calculate Preventive Action Limits (PALs): MW-5 (805), MW-8 (808)

PALs listed in the table below have been calculated based on background groundwater quality data from this designated well. Groundwater contaminant concentrations shall be minimized and PALs met in groundwater monitoring wells to the extent it is technically and economically feasible.

Point of Standards Application Well(s): MW-7 (807), MW-9 (809), MW-10 (811)

Enforcement standards are to be met in groundwater located beyond the 250 foot design management zone, or beyond the property boundary, whichever is closer to the land treatment system. See the Standard Requirements section of this permit for additional conditions related to exceedance of groundwater standards.

Required Monitoring: Grab samples shall be collected from each well to be monitored per the frequency shown in the table below, except that monthly grab samples shall be collected from each new well during the first 3 months after well installation. The grab samples shall be analyzed for the parameters specified in the table below.

PARAMETER	UNITS	PREVENTIVE ACTION LIMIT	ENFORCEMENT STANDARD	FREQUENCY
Depth To Groundwater	feet	*****	N/A	Quarterly
Groundwater Elevation	feet MSL	*****	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	11.1	11.1	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.2	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Field	su	8.2	N/A	Quarterly
Solids, Total Dissolved	mg/L	695	N/A	Quarterly
COD, Filtered	mg/L	33	N/A	Quarterly
Iron Dissolved	µg/L	150	300	Quarterly
Manganese Dissolved	µg/L	60	300	Quarterly

3.1.2.1 Alternative Concentration Limit

An alternative concentration limit (ACL) of **11.1** has been established for the **Dissolved Nitrite + Nitrate Nitrogen Preventative Action Limit and Enforcement Standard** at this site. This ACL is authorized in conjunction with an exemption granted under s. NR 140.28, Wis. Adm. Code.

3.1.2.2 pH Preventive Action Limits

A pH monitoring result is considered to have exceeded the pH preventive action limit (PAL) for this site if the result is less than **6.2** s.u. or greater than **8.2** s.u.

3.1.2.3 Preventive Action Limits for Indicator Parameters

Preventive Action Limits (PALs) for NR 140 Indicator Parameters have been established for this site. For more information see "Indicator Parameter – Preventive Action Limits" in the Standard Requirements section.

*****PALs are not calculated for Depth to Groundwater, Groundwater Elevation, nor Total Kjeldahl Nitrogen.

3.1.3 Groundwater Monitoring System for North Sprayfield

Location of Monitoring System: SW 1/4, Sec. 11, T2N, R6E, Jordan Township

Wells to be Monitored: MW-12 (814), MW-13 (815), MW-14 (816), MW-15 (817)

Well Used To Calculate Preventive Action Limits (PALs): MW-13 (815)

PALs listed in the table below have been calculated based on background groundwater quality data from this designated well. Groundwater contaminant concentrations shall be minimized and PALs met in groundwater monitoring wells to the extent it is technically and economically feasible.

Point of Standards Application Well(s): None

Enforcement standards are to be met in groundwater located beyond the 250 foot design management zone, or beyond the property boundary, whichever is closer to the land treatment system. See the Standard Requirements section of this permit for additional conditions related to exceedance of groundwater standards.

Required Monitoring: Grab samples shall be collected from each well to be monitored per the frequency shown in the table below, except that monthly grab samples shall be collected from each new well during the first 3 months after well installation. The grab samples shall be analyzed for the parameters specified in the table below.

PARAMETER	UNITS	PREVENTIVE ACTION LIMIT	ENFORCEMENT STANDARD	FREQUENCY
Depth To Groundwater	feet	*****	N/A	Quarterly
Groundwater Elevation	feet MSL	*****	N/A	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	2.0	10	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.2	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
pH Field	su	8.2	N/A	Quarterly
Solids, Total Dissolved	mg/L	600	N/A	Quarterly
COD, Filtered	mg/L	34	N/A	Quarterly

3.1.3.1 pH Preventive Action Limits

A pH monitoring result is considered to have exceeded the pH preventive action limit (PAL) for this site if the result is less than **6.2** s.u. or greater than **8.2** s.u.

3.1.3.2 Preventive Action Limits for Indicator Parameters

Preventive Action Limits (PALs) for NR 140 Indicator Parameters have been established for this site. For more information see "Indicator Parameter – Preventive Action Limits" in the Standard Requirements section.

*****PALs are not calculated for Depth to Groundwater, Groundwater Elevation, nor Total Kjeldahl Nitrogen.

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, WasteType/Sample Contents and Treatment Description (as applicable)**
001	High strength dairy wastewater and lagoon sludge discharged from the 650,000-gallon storage tank to Department approved land application sites. Representative grab samples shall be collected from the port on the load out pipe.
007	OUTFALL INACTIVATED. DEPARTMENT APPROVAL TO ACTIVATE OUTFALL 007 MUST BE RECEIVED PRIOR TO USE. DAF (dissolved air flotation) sludge that is discharged from three interconnected storage tanks to land application sites approved by the Department. Samples are collected at the sampling port built into pipe used for loading trucks utilized for spreading the waste.

4.2 Monitoring Requirements and Limitations

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

4.2.1 Sampling Point (Outfall) 001 - High Strength Wastewater

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gal/month	Monthly	Total Monthly	
Chloride		mg/L	Monthly	Grab	
Nitrogen, Ammonia (NH_3-N) Total		mg/L	Monthly	Grab	
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Phosphorus, Total		mg/L	Quarterly	Grab	
Solids, Total		Percent	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	
Potassium, Total Recoverable		mg/L	Annual	Grab	
pH Field		su	Annual	Grab	

Daily Log – Monitoring Requirements and Limitations
All discharge and monitoring activity shall be documented on log sheets. Originals of the log sheets shall be kept by the permittee as described under "Records Retention" in the Standard Requirements section, and if requested, made available to the Department.

Parameters	Limit	Units	Sample Frequency	Sample Type
DNR Site Number(s)	-	Number	Daily	Log
Acres Applied	-	Acres	Daily	Log
Frozen Site Maximum Daily Loading Volume	6,800	Gal/Acre/Day	Daily	Calculated
Unfrozen Site Maximum Daily Loading Volume	13,500	Gal/Acre/Day	Daily	Calculated
Weekly Loading Volume	See NR 214 - Tbl 3	Inches/Week	Weekly	Calculated

Annual Report – Summary of Monitoring Requirements and Limitations
The Annual Report is due by January 31st of each year for the previous calendar year. See the 'Annual Land Application Report' subsection in Standard Requirements.

Parameters	Limit	Units	Reporting Frequency	Sample Type
DNR Site Number(s)	-	Number	-	-
Acres Land Applied	-	Acres	Annual	-
Total Volume Per Site	-	Gallons	Annual	Total Annual
Total Kjeldahl Nitrogen per Site	165, or alternate approved in writing	Pounds/Acre/Year	Annual	Calculated
Total Chloride per Site	340	Pounds/Acre per 2 Years	Annual	Calculated

4.2.1.1 Annual Site Nitrogen Loading

For details on nitrogen loading requirements, including approval of an alternate nitrogen pounds/acre/year site loading, see the "Nitrogen Requirements for Liquid Wastes, By-Product Solids and Sludges" paragraph in the Standard Requirements section of this permit.

4.2.1.2 Biennial Site Chloride Loading

For details on chloride requirements see the "Chloride Requirements for Liquid Wastes and By-Product Solids" paragraph in the Standard Requirements section of this permit.

4.2.1.3 Monthly Total Discharge Volume

The total discharge volume for the month shall be reported on the Characteristics Report Form 3400-49. Calculate the monthly total discharge volume by adding total amount discharged for each day of the month.

4.2.2 Sampling Point (Outfall) 007 - DAF Unit Sludges

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		gpd	Monthly	Grab	
Solids, Total		Percent	Monthly	Grab	
Chloride		Percent	Monthly	Grab	
Nitrogen, Total Kjeldahl		Percent	Monthly	Grab	
pH Field		su	Annual	Grab	
Phosphorus, Total		Percent	Quarterly	Grab	
Phosphorus, Water Extractable		% of Tot P	Annual	Grab	
Potassium, Total Recoverable		Percent	Annual	Grab	
Nitrogen, Ammonium (NH_4-N) Total		Percent	Annual	Grab	
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.

Daily Log – Monitoring Requirements and Limitations

All discharge and monitoring activity shall be documented on log sheets. Originals of the log sheets shall be kept by the permittee as described under "Records Retention" in the Standard Requirements section, and if requested, made available to the Department.

Parameters	**Limit**	**Units**	**Sample Frequency**	**Sample Type**
DNR Site Number(s)	-	Number	Daily	Log
Acres Applied	-	Acres	Daily	Log
Application Rate	-	Gal/Acre/Day	Daily	Calculated

Annual Report – Summary of Monitoring Requirements and Limitations The Annual Report is due by January 31st of each year for the previous calendar year. See the 'Annual Land Application Report' subsection in Standard Requirements.				
Parameters	**Limit**	**Units**	**Reporting Frequency**	**Sample Type**
DNR Site Number(s)	-	Number	-	-
Acres Land Applied	-	Acres	Annual	-
Total Volume Per Site	-	Gallons	Annual	Total Annual
Total Kjeldahl Nitrogen per Site	165, or alternate approved in writing	Pounds/Acre/Year	Annual	Calculated
Total Chloride per Site	340	Pounds/Acre per 2 Years	Annual	Calculated

4.2.2.1 Annual Site Nitrogen Loading

For details on nitrogen loading requirements, including approval of an alternate nitrogen pounds/acre/year site loading, see the "Nitrogen Requirements for Liquid Wastes, By-Product Solids and Sludges" paragraph in the Standard Requirements section of this permit.

4.2.2.2 Biennial Site Chloride Loading

For details on chloride requirements see the "Chloride Requirements for Liquid Wastes and By-Product Solids" paragraph in the Standard Requirements section of this permit.

4.2.2.3 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 regardless of the end use (i.e. land applied, hauled to another facility, landfilled).

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
PFTrDA	Perfluorotridecanoic acid

PFTeDA	Perfluorotetradecanoic acid
PERFLUOROALKYLSULFONIC Acids (PFSAs)	
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 (FOSAs)	
PFOSA	Perfluroroctane sulfonamide
NMeFOSA	N-Methyl perfluoroocatane sulfonamide
NEtFOSA	N-Ethyl perfluorooctane sulfonamide
PERFLUOROOCTANCESULFONAMIDOACETIC Acids	
NMeFOSAA	N-Methyl perfluoroocatane sulfonamidoacetic acid
NEtFOSAA	N-Ethyl perfluorooctane sulfonamidoacetic acid
NATIVE PERFLUOROOCTANCESULFONAMIDOETHANOLS (FOSEs)	
NMeFOSE	N-Methyl perfluorooctane sulfonamideoethanol
NEtFOSE	N-Ethyl perfluorooctane sulfonamidoethanol
PERFLUOROALKYLETHERCARBOXYLIC Acids (PFECAs)	
HFPO-DA	Hexafluoropropylene oxide dimer acid
ADONA	4,8-dioxa-3*H*-perfluorononanoic acid
PFMPA	Perfluoro-3-methoxypropanoic acid
PFMBA	Perfluoro-4-methoxybutanoic acid
NFDHA	Nonafluoro-3,6-dioxaheptaoic acid
CHLORO-PERFLUOROALKYLSULFONATE	
9Cl-PF3ONS	9-chloroehexadecafluoro-3-oxanone-1-sulfonic acid

11Cl-PF3OUdS	11-chloroelcosafluoro-3-oxaundecane-1-sulfonic acid
PFEESA	Perfluroro(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

4.2.2.4 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.

4.2.2.5 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".

5 Schedules

5.1 Land Application Management Plan

Required Action	Due Date
Land Application Management Plan: Submit an update to the management plan to optimize the land application system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	03/31/2024

5.2 Land Treatment Annual Report

Required Action	Due Date
Submit Annual Land Treatment Report #1: Submit the Annual Land Treatment Report by March 31st for the previous calendar year.	03/31/2024
Submit Annual Land Treatment Report #2: Submit the Annual Land Treatment Report by March 31st for the previous calendar year.	03/31/2025
Submit Annual Land Treatment Report #3: Submit the Annual Land Treatment Report by March 31st for the previous calendar year.	03/31/2026
Submit Annual Land Treatment Report #4: Submit the Annual Land Treatment Report by March 31st for the previous calendar year.	03/31/2027
Ongoing Annual Land Treatment Reports : Submit the Annual Land Treatment Report by March 31st for the previous calendar year.	03/31/2028

5.3 Land Treatment Management Plan

Required Action	Due Date
Land Treatment Management Plan: Submit an update to the management plan to optimize the land treatment system performance and demonstrate compliance with Wisconsin Administrative Code NR 214.	06/30/2024

5.4 Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus

Required Action	Due Date
Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in phosphorus discharges from the treatment plant during the period prior to complying with final phosphorus WQBELs and, where possible, enable compliance with final phosphorus WQBELs by 9/30/2031. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible,	06/30/2024

but not later than 6/30/2027 and state whether the measures, improvements, and modifications will enable compliance with final phosphorus WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report. If the operational evaluation report concludes that the facility can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final phosphorus WQBEL by 9/30/2026 and is not required to comply with the milestones identified below for years 3 through 9 of this compliance schedule ('Preliminary Compliance Alternatives Plan', 'Final Compliance Alternatives Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet WQBELs', 'Complete Construction', 'Achieve Compliance'). STUDY OF FEASIBLE ALTERNATIVES - If the Operational Evaluation Report concludes that the permittee cannot achieve final phosphorus WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final phosphorus WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final phosphorus WQBELs sooner than 9/30/2031.	
Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting phosphorus WQBELs.	06/30/2025
Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment facility is necessary to achieve final phosphorus WQBELs, the submittal shall include a preliminary engineering design report. If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan. If water quality trading will be undertaken, the plan must state that trading will be pursued.	06/30/2026
Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment is necessary to meet final phosphorus WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110, Wis. Adm. Code. If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report addressing any treatment system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code. If the plan concludes water quality trading will be used, the submittal shall identify potential trading	06/30/2027

partners. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2028
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2029
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	11/01/2029
Construction Upgrade Progress Report: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	11/01/2030
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	06/30/2031
Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	09/30/2031

5.5 Ridge and Furrow Loading Limitation Reduction

Required Action	Due Date
Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of possible source reduction measures, operational improvements or other minor facility modifications that will result in the nitrogen load to the ridge and furrow treatment system not exceeding 452 lbs/ac/yr beginning in 2027. Also, include any additional preliminary compliance alternatives beyond the components of the OER.	10/01/2024
Progress Report #1: Submit a progress report regarding the reduction in nitrogen loading to a value of 452 lbs/ac/yr for calendar year 2027.	03/31/2025

Alternative Exemption Actions: If the permittee believes an exemption request may be necessary beginning in the fourth year of the permit, the permittee shall install a monitoring well at or beyond the Design Management Zone (DMZ) between MW-11 and MW-7 no later than December 31, 2025. A total of eight rounds of quarterly sampling results from this monitoring well will be required for the determination of providing an exemption.	12/31/2025
Progress Report #2: Submit a progress report regarding the reduction in nitrogen loading to a value of 452 lbs/ac/yr for calendar year 2027.	03/31/2026
Progress Report #3: Submit a progress report regarding the reduction in nitrogen loading to a value of 452 lbs/ac/yr for calendar year 2027.	03/31/2027
Achieve Compliance: Complete operational actions that result in the reduction in nitrogen loading to a value of 452 lbs/ac/yr for calendar year 2027 or submit an exemption request for loading the ridge and furrow to a value above 452 lbs/ac/yr.	01/31/2028

5.6 Temperature Limits and Dissipative Cooling Evaluation

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent temperature with conclusions regarding compliance. Informational Note: Refer to the Surface Water subsections regarding 'Determination of Need for Effluent Limits' and 'Dissipative Cooling Demonstration - Weekly Average Limits' concerning requests for a Department determination on the need for limits and follow-up procedures for demonstration of dissipative cooling per NR 106.59, as well as re-evaluation of the limits pursuant to NR 106 Subchapters V & VI or NR 102.26, Wis. Adm. Code.	01/01/2028
Action Plan: Submit an action plan for complying with all effluent temperature limits that remain following the Department's review for necessity.	03/01/2028
Construction Plans: Submit construction plans (if construction is required for complying with effluent temperature limits) and include plans and specifications with the submittal.	03/01/2028
Complete Actions: Complete actions necessary to achieve compliance with effluent temperature limits.	09/30/2028

6 Standard Requirements

Chapter NR 205, Wisconsin Administrative Code (Conditions for Industrial Dischargers): The conditions in ss. NR 205.07(1) and NR 205.07(3), 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(3), 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 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 pursuant s. NR 205.07(1)(r)2., Wis. Adm. Code.

For the purpose of meeting sampling frequency requirements, a week is defined as a calendar week, which begins on Sunday and ends on Saturday. The calendar week shall be used as the basis for reporting monitoring data on discharge monitoring reports.

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 Sample Types

The permittee shall use the following definitions from s. NR 218.04, Wis. Adm. Code as prescribed in the WPDES permit for the appropriate method and manner of obtaining samples:
24-hour Composite Sample: A combination of individual samples taken at intervals of not more than one hour such that the volumes of each of the individual samples and of the combination are proportional to the volumes of flow during each interval and during the 24-hour period respectively.

- **24-hour Flow Proportional Composite Sample:** A combination of individual grab samples taken over a 24-hr period, where the individual grab samples are of equal volume and taken at intervals after a specified volume of discharge has occurred.
- **24-hour Time Proportional Composite Sample:** A combination of individual grab samples taken over a 24-hr period, where the individual grab samples are of equal volume and taken at consistent intervals not exceeding 15 minutes.

Composite Sample: A combination of individual samples of equal volume taken at approximately equal intervals not exceeding one hour over a specified period of time.

- **3-hr Composite Sample:** A combination of three (3) individual grab samples of equal volume taken at one-hour intervals.

Continuous Sample: A composite of successive individual samples of equal volume taken automatically at equal intervals not exceeding 15 minutes. Where the term is used in connection with monitoring temperature or pH it means continuous in-line recording or monitoring at intervals of not more than 15 minutes.

Continuous sample is synonymous with in-line measurements and may apply to flow, temperature, pH, and dissolved oxygen measurements only. The in-line instrument takes automatic readings at intervals of not more than 15 minutes during a 24-hour period.

Grab Sample: A single sample taken at one moment of time or a combination of several smaller samples of equal volume taken in less than a 2-minute period. Where the term is used in connection with monitoring temperature or pH it means a single measurement.

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 BOD_5 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 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, except for sludge management forms and records, which shall be kept for a period of at least 5 years.

6.1.7 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.

6.1.8 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

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 as directed at the end of this permit 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 Bypass

Except for a controlled diversion as provided in the 'Controlled Diversions' section of this permit, any bypass 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 preventive 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.

6.2.3 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 unscheduled bypassing 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.

6.2.4 Controlled Diversions

Controlled diversions are allowed only when necessary for essential maintenance to assure efficient operation provided the following requirements are met:

- Effluent from the wastewater 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 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 wastewater treatment facility records and such records shall be available to the department on request.

6.2.5 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.

6.2.6 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).

6.2.7 Planned Changes

In accordance with ss. 283.31(4)(b) and 283.59, Stats., the permittee shall report to the Department any facility expansion, production increase or process modifications which will result in new, different or increased discharges of pollutants. The report shall either be a new permit application, or if the new discharge will not violate the effluent limitations of this permit, a written notice of the new, different or increased discharge. The notice shall contain a description of the new activities, an estimate of the new, different or increased discharge of pollutants and a description of the effect of the new or increased discharge on existing waste treatment facilities. Following receipt of this report, the Department may modify this permit to specify and limit any pollutants not previously regulated in the permit.

6.2.8 Duty to Halt or Reduce Activity

Upon failure or impairment of treatment facility operation, the permittee shall, to the extent necessary to maintain compliance with its permit, curtail production or wastewater discharges or both until the treatment facility operations are restored or an alternative method of treatment is provided.

6.3 Surface Water Requirements

6.3.1 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.

6.3.2 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.

6.3.3 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.

6.3.4 Visible Foam or Floating Solids

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

6.3.5 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.

6.3.6 Compliance with Phosphorus Limitation

Compliance with the concentration limitation for phosphorus shall be determined as a rolling twelve-month average and shall be calculated as follows:

First, determine the pounds of phosphorus for an individual month by multiplying the average of all the concentration values for phosphorus (in mg/L) for that month by the total flow for the month in Million Gallons times the conversion factor of 8.34.

Then, the monthly pounds of phosphorus determined in this manner shall be summed for the most recent 12 months and inserted into the numerator of the following equation.

$$\text{Average concentration of P in mg/L} = \frac{\text{Total lbs of P discharged (most recent 12 months)}}{\text{Total flow in MG (most recent 12 months)} \times 8.34}$$

The compliance calculation shall be performed each month with a reported discharge volume after substituting data from the most recent month(s) for the oldest month(s). A calculated value in excess of the concentration limitation will be considered equivalent to a violation of a monthly average.

6.3.7 Additives

In the event that the permittee wishes to commence use of a water treatment additive, or increase the usage of the additives greater than indicated in the permit application, the permittee must get a written approval from the Department prior to initiating such changes. This written approval shall provide authority to utilize the additives at the specific rates until the permit can be either reissued or modified in accordance with s. 283.53, Stats. Restrictions on the use of the additives may be included in the authorization letter.

6.3.8 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.

6.3.9 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 via email at DNRWYWETTestReporting@wisconsin.gov 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 Land Treatment Requirements for Industrial Discharges

NR 214, Wisconsin Administrative Code: The requirements of this section are based on ss. NR 214.12-16, Wis. Adm. Code, and apply to wastewater discharges to designed and constructed absorption pond, ridge & furrow, spray irrigation, overland flow and subsurface absorption treatment systems.

6.4.1 Formulas for Land Treatment Calculations

The permittee shall use the following formulas for land treatment calculations, unless an alternate calculation method is approved by the Department in the Land Treatment Management Plan.

6.4.1.1 Monthly Average Hydraulic Application Rate

Determine the monthly average hydraulic application rate (in gal/acre/day) for each outfall by calculating the total gallons of wastewater applied onto the site for the month, dividing that total by the number of wetted acres loaded during the month, and then dividing this resulting value by the number of days in the month. Enter this calculated monthly value on the Discharge Monitoring Report form in the box for the last day of the month, in the "Hydraulic Application Rate" column.

6.4.1.2 Annual Total Nitrogen per Cell or per Zone

$$\frac{\text{(annual ave. concentration in mg/L) (tot. annual flow in million gallons per cell or zone) (8.34)}}{\text{acreage of cell or zone}} = \text{lbs/ac/yr}$$

6.4.1.3 Annual Total Chloride per Cell or per Zone

$$\frac{\text{(annual ave. concentration in mg/L) (tot. annual flow in million gallons per cell or zone) (8.34)}}{\text{acreage of cell or zone}} = \text{lbs/ac/yr}$$

6.4.2 Chloride Requirements for Land Treatment Systems

Since chloride is not significantly treated by the soil, the chloride level of the wastewater treated on land shall be minimized to the extent that is technically and economically feasible. The goal is to protect groundwater quality and prevent exceedance of the 125 mg/L groundwater preventive action limit.

6.4.3 Nitrogen Loading Requirements for Spray Irrigation

The total annual nitrogen loading (pounds/acre/year) to the wastewater spray irrigation acreage shall not exceed the limitation contained in the monitoring requirements and limitations for that sampling point. Determination of the annual pounds of nitrogen applied to the land treatment system shall include the nitrogen supplied by the wastewater, organic nitrogen becoming available to plants and any supplemental fertilizers used. The Department may approve (in writing) an alternative nitrogen loading limit in a spray irrigation management plan based on the annual nitrogen needs of the cover crop and the permittee's demonstration of nitrogen losses for the site as specified in s. NR 214.14(3)(c), Wis. Adm. Code.

6.4.4 Ponding

The intensity of wastewater spray shall be limited to prevent ponding, except for temporary conditions following rainfall events.

6.4.5 Runoff

The volume of wastewater sprayed shall be limited to prevent runoff of any wastewater mixed with rainwater as specified in s. NR 214.14(3)(f), Wis. Adm. Code. If wastewater runoff occurs, spray irrigation shall cease immediately.

6.4.6 Seasonal Irrigation Restriction

Discharge to the spray irrigation field shall occur only between April 1 and October 31 each year, unless otherwise specified in the approved Land Treatment Management Plan.

6.4.7 Irrigation Management Plan

The spray irrigation treatment system shall be operated and managed in accordance with a Department approved management plan. The management plan shall be consistent with the conditions listed in this permit and s. NR 214.14(5), Wis. Adm. Code, which requires a load/rest cycle, cover crop removal, annual soil testing, etc. If operational changes are needed, the management plan shall be amended and such plan shall be submitted to the Department for approval prior to implementing such changes.

6.4.8 Nitrogen Loading Requirements for Ridge and Furrow

The total annual nitrogen loading (pounds/acre/year) to the wastewater land treatment acreage shall not exceed the limitation contained in the monitoring requirements and limitations for that sample point, except that the Department may approve (in writing) an alternative nitrogen loading limit in a ridge and furrow management plan based on the annual nitrogen needs of the cover crop and the permittee's demonstration of nitrogen losses for the site as specified in s. NR 214.13(3)(c), Wis. Adm. Code.

6.4.9 Ridge and Furrow Flooding and Overflow Prohibited

The volume of discharge to the ridge and furrow system shall be limited to prevent inundation of the ridges except for temporary conditions following precipitation events. Discharge to the ridge and furrow system shall be also limited so that the discharge volume combined with the precipitation from a 10-year frequency, 24-hour duration rainfall event does not overflow the boundary of the system.

6.4.10 Ridge and Furrow Management Plan

The ridge and furrow system shall be operated and managed in accordance with a Department approved management plan. The management plan shall be consistent with the conditions listed in this permit and s. NR 214.13(5), Wis. Adm. Code, which requires a load/rest schedule, vegetative cover control and removal, etc. If operational changes are needed, the management plan shall be amended by submitting a written request to the Department for approval.

6.5 Groundwater Standard Requirements

6.5.1 Application of NR 140 to Substances Discharged

This permit does not authorize the permittee to discharge any substance in a concentration which would cause an applicable groundwater standard of ch. NR 140, Wis. Adm. Code, to be exceeded. The Department may seek a response under NR 140 if the permittee's discharge causes exceedance of an applicable groundwater standard for any substance, including substances not specifically limited or monitored under this permit.

6.5.2 Groundwater Sampling

Groundwater sampling shall be performed in accordance with the 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).

6.5.3 Indicator Parameter Preventive Action Limits and Alternative Concentration Limits

The methodology for the assessment of background groundwater quality and calculation of indicator PALs and ACLs can be found in "Calculating Preventive Action Limits and Evaluating Groundwater Quality Exemptions for Groundwater Discharges (3400-2024-04).

6.5.4 Groundwater Monitoring Forms

Results of the groundwater analyses shall be summarized and reported on a Groundwater Monitoring Form. This report form is to be returned to the Department no later than the date indicated on the form. A copy of the Groundwater Monitoring Form or an electronic file of the form shall be retained by the permittee. Groundwater monitoring results shall be reported on an electronic Groundwater Monitoring Form and 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.

6.5.5 Notification of Attaining or Exceeding Groundwater Quality Standards

The permittee shall notify the Department when monitoring results indicate that a Preventive Action Limit or Enforcement Standard has been attained or exceeded per ss. NR 140.24 (1)(a) and NR 140.26 (1)(a) Wis. Adm. Code. This notification may be provided in the general remarks section of the groundwater monitoring form or by letter attached to the groundwater monitoring form. Any values reported as exceeding a groundwater standard shall be confirmed as being from a representative sample and as a correct laboratory analysis result.

6.5.6 Preventive Action Limit (PAL) Exceedance

Sections NR 206.07 (1)(c) and NR 214.07 (1), Wis. Adm. Code, require all land disposal and land treatment system to be designed and operated to prevent exceedances of PALs. Results from groundwater samples that are less than this permit's PALs indicate that operation of the land treatment system is protective of groundwater quality. Substance concentrations that exhibit a trend over time of being greater than the PAL may indicate that additional technically and economically feasible actions are needed to reduce the discharge of the substance to the groundwater. In such a case, the Department may request an evaluation and response or propose a permit modification to require submittal of

a groundwater evaluation report and implementation of a feasible response as specified in s. NR 140.24, Wis. Adm. Code.

6.5.7 Enforcement Standard (ES) Exceedance Within the Design Management Zone

Substance concentrations greater than this permit's ES in a permittee's monitoring well located within the property boundary and within the design management zone of the land treatment system may indicate that the groundwater concentration exceeds an ES outside of these boundaries. If the Department determines there is reasonable evidence that an ES is being attained or exceeded beyond the property boundary or beyond the design management zone, the Department may request an evaluation and response or propose a permit modification to require an evaluation report and appropriate response as specified in s. NR 140.24, Wis. Adm. Code, per s. NR 140.27, Wis. Adm. Code.

6.5.8 Enforcement Standard Exceedance Outside the Design Management Zone

The permittee's land treatment system shall not cause the concentration of a substance in groundwater to attain or exceed this permit's ES at any point of present groundwater use, at any point beyond the property boundary, or at any point beyond the design management zone established under s. NR 140.22, Wis. Adm. Code. When this condition is not met, **the permittee shall, within 120 days following notification to the Department of the attainment or exceedance of an ES beyond the compliance boundary, submit a groundwater quality evaluation and response report** as specified in s. NR 140.26(1)(b), Wis. Adm. Code. The Department may propose modification of this permit to require the permittee to implement additional treatment or other actions as specified in s. NR 140.26, Wis. Adm. Code.

6.5.9 New Monitoring Wells Installed During the Current Permit-Term

If the new monitoring well is proposed to act as a background monitoring well for the use in calculating indicator parameter PALs and ACLs, then a minimum of eight rounds of sampling results are required prior to the calculation of indicator parameter PALs and ACLs for inclusion in a modified permit. The methodology and requirements for the assessment of background groundwater quality and calculation of indicator PALs and ACLs can be found in Evaluating and Calculating Preventative Action Limits and Alternative Concentration Limits for Groundwater Discharges (3400-2020-10).

6.6 Land Application Requirements

6.6.1 General Sludge Management Information

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

6.6.2 Land Application Characteristic Report

The analytical results from testing of liquid wastes, by-product solids and sludges that are land applied shall be reported annually on the Characteristic Report Form 3400-49. The report form shall be submitted electronically no later than the date indicated on the form. 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 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.
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 sludge results shall be reported on a dry weight basis.

6.6.3 Annual Land Application Report

The annual totals for the land application loadings of liquid wastes, by-product solids and sludges to field spreading sites shall be submitted electronically on the Annual Land Application Report Form 3400-55 by January 31, each year whether or not waste is land applied. 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 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.

6.6.4 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 waste is hauled to another facility, landfilled, incinerated, or stored in a manure pit. Following submittal of the electronic Report Form 3400-52, this form shall be certified electronically via the 'eReport Certify' page by a responsible executive 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.

6.6.5 Land Application Site Approval

The permittee is authorized to landspread permitted liquid wastes, by-product solids and sludges on sites approved in writing by the Department in accordance with ss. NR 214.17(2) and 214.18(2), Wis. Adm. Code. Any site use restrictions or granting of case-by-case exceptions shall be identified in the approval letter. If the permittee wishes to have approval for additional sites, application shall be made using Land Application Site Request Form 3400-053. Complete information shall be submitted about each site, including location maps and soil maps, any soil analyses results and other information showing that the site complies with all application requirements and permit conditions. Spreading on a site may commence upon receipt of Department approval. If an existing spreading site is found by the Department to be environmentally unacceptable, a written notice will be issued to withdraw approval of that site.

6.6.6 Operating Requirements/Management Plan

All land application sites used for treatment of liquid wastes, by-product solids and sludges shall be operated in accordance with a Department approved management plan. The management plan shall be consistent with the requirements of this permit, ss. NR 214.17 (3) and (6), and NR 214.18 (3) and (6), Wis. Adm. Code. If operational changes are needed, the land application management plan shall be amended by submitting a written request to the Department for approval. A land application management plan shall be submitted for approval at least 60 days prior to land application.

6.6.7 Chloride Requirements for Liquid Wastes and By-Product Solids

The total pounds of chloride applied shall be limited to 340 pounds per acre per 2 year period. Calculate the chloride loading as follows:

$$\text{Wet Weight Solids: } \frac{\text{lbs of solids X \%solids X \%chloride}}{\text{acres land applied X 100 X 100}} = \text{lbs chloride/acre}$$

$$\text{Liquid: } \frac{\text{mg/L chloride X (millions of gallons) X 8.34}}{\text{acres land applied}} = \text{lbs chloride/acre}$$

6.6.8 Nitrogen Requirements for Liquid Wastes and By-Product Solids and Sludges

NR 214.17(4) and NR 214.18(4) Wis. Adm. Code specify that the total pounds of nitrogen land applied per acre per year shall be limited to the nitrogen needs of the cover crop minus any other nitrogen added to the land application site, including fertilizer or manure. Nitrogen applied can be calculated on the basis of plant available nitrogen, as long as the release of nitrogen from the organic material is credited to future years. This permit requires that the Total

Kjeldahl Nitrogen calendar year application amount shall not exceed 165 pounds per acre per year, except when alternate numerical nitrogen loading limits (consistent with the above sections of NR 214) are approved in writing via the Department's land application management plan approval. Calculate nitrogen loading as follows ("TKN" represents "Total Kjeldahl Nitrogen"):

$$\text{Wet Weight Solids and Sludges: } \frac{\text{lbs of solids X \%solids X \% TKN}}{\text{acres land applied X 100 X 100}} = \text{lbs TKN/acre}$$

$$\text{Liquid: } \frac{\text{mg/L TKN X (millions of gallons) X 8.34}}{\text{acres land applied}} = \text{lbs TKN/acre}$$

6.6.9 Ponding

The volume of liquid wastes land applied shall be limited to prevent ponding, except for temporary conditions following rainfall events. If ponding occurs all land application shall cease immediately. The permittee shall land apply only the liquid wastes that are permitted.

6.6.10 Runoff

The volume of liquid wastes land applied shall be limited to prevent runoff. If runoff occurs all land application shall cease immediately. The permittee shall land apply only the liquid wastes that are permitted.

6.6.11 Soil Incorporation Requirements

- Liquid Sludge Requirements: The Department may require that liquid sludge be incorporated into the soil on specific land application sites when necessary to prevent surface runoff or objectionable odors. Requirements and procedures for incorporation of liquid sludge, when such incorporation may be necessary, shall be specified in the management plan or in specific site applications, subject to Department approval. The permittee shall comply with the requirements in the Department approved management plan, specific site-approval requirements and the terms and conditions of this permit.
- Cake Sludge Requirements: After land application, cake sludge shall be incorporated into the soil. The timing of such incorporation and other related requirements and procedures shall be specified in the management plan or in specific site applications, subject to Department approval. The permittee shall comply with the requirements in the Department approved management plan, specific site-approval requirements and the terms and conditions of this permit.
- Liquid Wastewater Requirements: The Department may require that liquid wastewater be incorporated or injected into the soil on specific land application sites when necessary to prevent surface runoff or objectionable odors. Requirements and procedures for injection or incorporation of liquid wastewater, when such injection or incorporation is necessary, shall be specified in the management plan or in specific site applications, subject to Department approval. The permittee shall comply with the requirements in the Department approved management plan, specific site-approval requirements and the terms and conditions of this permit.
- By-Product Solids Requirements: The Department may limit the volume of by-products solids that are landspread on a specific site when necessary to prevent surface runoff or leaching of contaminants to groundwater and objectionable odors. By-product solids shall, after application, be plowed, disced, or otherwise incorporated into the soil. Requirements and procedures for the incorporation of byproduct solids into the soil shall be specified in the management plan or in specific site applications, subject to Department approval. The permittee shall comply with the requirements in the Department approved management plan, specific site-approval requirements and the terms and conditions of this permit.

6.6.12 Field Stockpiles

The permittee is encouraged to landspread the by-product solids or sludges as they are transported to the fields; but if it becomes necessary to stockpile solids in the fields, the stockpiles shall be spread within 72 hours or as specified in the approved management plan.

6.6.13 Additional Requirements from ch. NR 214, Wis. Adm. Code

The requirements of s. NR 214.17 (4)(c) [pathogen prohibition for human consumption crop fields], (4)(d)1 [no adverse soil effects], (4)(d)10 [allowable whey spreading rates], and (4)(e)1-3 [by-product solids spreading within agricultural practices and not cause contamination] for landspreading of liquid wastes and by product solids and s. NR 214.18 (4)(b),(d)-(h) [application, nutrient, pH, metals, and PCB limitations] for sludge spreading systems are included by reference in this permit. The permittee shall comply with these requirements.

7 Summary of Reports Due

FOR INFORMATIONAL PURPOSES ONLY

Description	Date	Page
Land Application Management Plan -Land Application Management Plan	March 31, 2024	22
Land Treatment Annual Report -Submit Annual Land Treatment Report #1	March 31, 2024	22
Land Treatment Annual Report -Submit Annual Land Treatment Report #2	March 31, 2025	22
Land Treatment Annual Report -Submit Annual Land Treatment Report #3	March 31, 2026	22
Land Treatment Annual Report -Submit Annual Land Treatment Report #4	March 31, 2027	22
Land Treatment Annual Report -Ongoing Annual Land Treatment Reports	March 31, 2028	22
Land Treatment Management Plan -Land Treatment Management Plan	June 30, 2024	22
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Operational Evaluation Report	June 30, 2024	23
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Compliance Alternatives, Source Reduction, Improvements and Modifications Status	June 30, 2025	23
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Preliminary Compliance Alternatives Plan	June 30, 2026	23
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Final Compliance Alternatives Plan	June 30, 2027	23
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Progress Report on Plans & Specifications	June 30, 2028	24
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Final Plans and Specifications	June 30, 2029	24
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Treatment Plant Upgrade to Meet WQBELs	November 1, 2029	24
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Construction Upgrade Progress Report	November 1, 2030	24
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Complete Construction	June 30, 2031	24
Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus - Achieve Compliance	September 30, 2031	24
Ridge and Furrow Loading Limitation Reduction -Operational Evaluation Report	October 1, 2024	24
Ridge and Furrow Loading Limitation Reduction -Progress Report #1	March 31, 2025	24
Ridge and Furrow Loading Limitation Reduction -Alternative Exemption Actions	December 31, 2025	25
Ridge and Furrow Loading Limitation Reduction -Progress Report #2	March 31, 2026	25
Ridge and Furrow Loading Limitation Reduction -Progress Report #3	March 31, 2027	25
Ridge and Furrow Loading Limitation Reduction -Achieve Compliance	January 31, 2028	25

Temperature Limits and Dissipative Cooling Evaluation -Report on Effluent Discharges	January 1, 2028	25
Temperature Limits and Dissipative Cooling Evaluation -Action Plan	March 1, 2028	25
Temperature Limits and Dissipative Cooling Evaluation -Construction Plans	March 1, 2028	25
Temperature Limits and Dissipative Cooling Evaluation -Complete Actions	September 30, 2028	25
General Sludge Management Form 3400-48	prior to any significant sludge management changes	36
Characteristic Report Form 3400-49	no later than the date indicated on the form	36
Land Application Report Form 3400-55	January 31, each year whether or not waste is land applied	37
Other Methods of Disposal or Distribution Report Form 3400-52	by January 31, each year whether or not waste is hauled to another facility, landfilled, incinerated, or stored in a manure pit	37
Groundwater Monitoring Form	no later than the date indicated on the form	35
Wastewater Discharge Monitoring Report	no later than the date indicated on the form	26

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:
South Central Region, 3911 Fish Hatchery Rd, Fitchburg, WI 53711-5397