Grande Cheese Modified Permit Fact Sheet

General Information

Permit Number:	WI-0050547-10-02* Modification
Permittee Name:	Grande Cheese Company, Custom Ingredient Division, 1007 West Lake St, Friendship WI 53934
Discharge Location:	NE 1/4, SW 1/4, Section 6, T17N, R6E, Town of Adams, Adams County, WI
Receiving Water:	Little Roche-A-Cri Creek and the groundwaters the Little Roche-A-Cri Creek Watershed of the Central Wisconsin River Basin in Adams County
StreamFlow ($Q_{7,10}$):	19 cfs
Stream Classification:	Warm Water Sport Fish, Non-public Water Supply

Facility Description

Grande Cheese Company dries liquid food products into powders. The cleaning of equipment, boiler blowdown, noncontact cooling waters and other waste streams are created. The wastewater is segregated into high, medium and low strength flows. High strength wastewater is unusable by-products and some rinse waters that is landspread on approved sites. Medium strength wastewater from cleaning operations and reverse osmosis (R/O) retentate from evaporate condensate is discharged to a ridge and furrow system. Noncontact cooling water (NCCW) and waters treated in a reverse osmosis (R/O) system are discharged to Little Roche A Cri Creek. Sanitary wastewater is treated via a subsurface absorption system. A groundwater monitoring system is also in place on the facility grounds. No operational changes occurred during the last permit term.

At the surface water discharge, the following significant changes are included in this permit term: 1) addition of copper, phosphorus and total suspended solids limits, 2) addition of an acute WET limit and an increase in the WET testing frequency, 3) the addition of monitoring for hardness, total Kjeldahl nitrogen, nitrate + nitrite nitrogen and total nitrogen, 4) the sample frequency for BOD, TSS and phosphorus has increased from weekly to 3/weekly, and 5) the temperature sample type has changed from grab to multiple grab. Significant changes at the discharge to the ridge and furrow are as follows: 1) a maximum nitrogen loading limit of 800 lbs/acre/day, 2) the addition of a monitoring requirement for BOD5, ammonia, nitrate + nitrite nitrogen and organic nitrogen, and 3) the addition of a requirement that the permittee report on their eDMRs the amount of chloride (in lbs/acre/year) discharged to the ridge and furrow system, and 4) the removal of language that allows the permittee to potentially have a higher maximum nitrogen limit. Significant changes proposed at the groundwater monitoring well system are as follows:1) chloride alternate concentration limit (ACL) discontinued & the public welfare standard applied, 2) nitrite + nitrate nitrogen ACL decreased, 3) ammonia nitrogen ACL discontinued & the public health standard applied, 4) pH preventative action limit (PAL) applied, 5) monitoring standards for iron, manganese and TKN applied to all wells, 6) the effluent monitoring frequency for BOD, TSS and phosphorus has increased from weekly to 3/week and 7) a requirement that two new monitoring wells be installed, per the associated schedule. Other schedules have been included that require the permittee comply with the new copper & phosphorus limits, submit updated land treatment & land application management plans and submit information to the department about the location of the groundwater monitoring wells. The significant changes at the land application outfall 002 are the addition of monitoring requirements for total potassium and water extractable phosphorus.

Reason for Modification -1: The permit underwent a minor modification in order to correct a typographical error in Section 1.2.1.1 of the originally reissued permit. The phosphorus limits in Section 1.2.1.1 were incorrectly stated as 0.04 lbs/day (monthly average) and 0.11 lbs/day (6 month average). The phosphorus limits in the effluent table of Section 1.2.1 were stated correctly; the phosphorus limits at Outfall 003 are 0.04 bs/day (6 month average) and 0.11 lbs/day (monthly average). Section 1.2.11 was corrected so that both areas are consistent with what was stated in the effluent monitoring table in Section 1.2.1, as well as what was calculated and recommended in the 12/05/2022 WQBEL memo.

Reason for Modification -2: Permit modification -2 was completed following Grande Cheese's request to incorporate the approved Water Quality Trading using the Wisconsin Water Quality Trading Clearinghouse into their permit to meet phosphorus limits. Additionally, the permittee complete the required action in the compliance schedule for copper. After evaluation the department determined that the permittee does not have reasonable potential to exceed copper limits therefore, the copper limits are removed and sample frequency reduced to quarterly monitoring only. Permit modifications are highlighted.

Substantial Compliance Determination

Enforcement During Last Permit: None.

Per Pete Pfefferkorn 11/20/2022: After a desk top review of discharge monitoring reports, CMARs, land app reports, compliance schedule items and a site visit on October 27, 2021 this facility has been found to be in substantial compliance with their current permit.

Sample Point Designation		
Sample Point Number	**Discharge Flow, Units, and Averaging Period**	**Sample Point Location, WasteType/sample Contents and Treatment Description (as applicable)**
001	Effluent to Ridge & Furrow 15.09 MG/yr in 2022	Representative samples shall be collected prior to discharging to the ridge and furrow system. Discharge is limited to noncontact cooling water, medium strength process wastewater & cleanup water, retenate and R/O cooling tower blow-down.
002	Land application 18.05 MG/yr in 2022	Representative liquid high strength wastewater samples shall be collected prior to land application. Discharge shall be limited to the land application of mainly high strength wastewater (milk solids and cheesemaking/food ingredient process residuals) and boiler blowdown on Department approved sites.
003	Effluent to Little Roche a Cri Creek 14.76 MG/yr in 2022	Representative effluent samples shall be collected prior to discharging to Little Roche A Cri Creek. Discharge is limited to noncontact cooling water (NCCW), low strength process wastewater and reverse osmosis (RO) water.

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Ridge & Furrow	801	801 (MW1)	Down-gradient, Point of Standard
Ridge & Furrow	814	814 (MW10A)	Up-gradient, Background
Ridge & Furrow	815	815 (MW10B)	Up-gradient, Background
Ridge & Furrow	816	816 (MW11)	Side-gradient, Non-Point of Standard
Ridge & Furrow	817	817 (MW12)	Side-gradient, Non-Point of Standard
Ridge & Furrow	818	818 (MW13)	Down-gradient & Side-gradient, Non-Point of Standard

Sample Point Designation For Groundwater Monitoring Systems			
System	**Sample Pt Number**	**Well Name**	**Comments**
Ridge & Furrow	827	827 (MW22A)	Down-gradient, Non-Point of Standard
Ridge & Furrow	828	828 (MW22B)	Down-gradient, Non-Point of Standard
Ridge & Furrow	829	829 (MW23A)	Down-gradient, Point of Standard
Ridge & Furrow	830	830 (MW23B)	Down-gradient, Point of Standard

1 Surface Water - Monitoring and Limitations

Sample Point Number: 003- EFFLUENT TO LITTLE ROCHE A CRI CREEK

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Total Daily	
BOD5, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
BOD5, Total	Daily Max	34.9 lbs/day	3/Week	Calculated	
BOD5, Total	Monthly Avg	17.4 lbs/day	3/Week	Calculated	
Suspended Solids, Total		mg/L	3/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Daily Max	43.8 lbs/day	3/Week	Calculated	
Suspended Solids, Total	Monthly Avg	21.9 lbs/day	3/Week	Calculated	
pH Field	Daily Max	9.0 su	5/Week	Grab	
pH Field	Daily Min	6.0 su	5/Week	Grab	
Phosphorus, Total	Monthly Avg	0.57 mg/L	3/Week	24-Hr Flow Prop Comp	Limit effective throughout the permit term, as it represents a minimum control level.
Phosphorus, Total		lbs/day	3/Week	Calculated	Report daily mass discharged using Equation 1a. in the Water Quality Trading (WQT) section.
Phosphorus, Total		lbs/month	Monthly	Calculated	Calculate the Total Monthly Discharge of phosphorus and report on

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					the last day of the month on the DMR. See TMDL section.
Phosphorus, Total		lbs/yr	Monthly	Calculated	Calculate the 12-month rolling sum of total monthly mass of phosphorus discharged and report on the last day of the month on the DMR. See TMDL section.
WQT Credits Used (TP)		lbs/month	Monthly	Calculated	Report WQT TP Credits used per month using Equation 2b. in the Water Quality Trading (WQT) section. Available TP Credits are specified in Table 2.
WQT Computed Compliance (TP)	Monthly Avg	0.11 lbs/day	Monthly	Calculated	Report the WQT TP Computed Compliance value using Equation 3a. in the Water Quality Trading (WQT) section. Value entered on the last day of the month.
WQT Computed Compliance (TP)	6-Month Avg	0.04 lbs/day	Monthly	Calculated	Compliance with the six-month average limit is evaluated at the end of the six-month period on June 30 and Dec 31.
WQT Credits Used (TP)	Annual Total	15 lbs/yr	Annual	Calculated	The sum of total monthly credits used may not exceed Table 2 values listed below.
Copper, Total Recoverable		ug/L	Quarterly	24-Hr Flow Prop Comp	
Hardness, Total as CaCO3		mg/L	Quarterly	24-Hr Flow Prop Comp	Sample concurrently with a quarterly copper sample.
Temperature		deg F	Monthly	Multiple Grab	See temperature section below.
Acute WET	Daily Max	1.0 TUa	See Listed Qtr(s)	24-Hr Flow Prop Comp	See WET testing section below. Sample shall be

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
					collected concurrently with a monthly copper sample.
Nitrogen, Total Kjeldahl		mg/L	Quarterly	24-Hr Flow Prop Comp	Total Nitrogen = (Total Kjeldahl Nitrogen) + (Total Nitrite + Nitrate Nitrogen). See Nitrogen Series Monitoring section below.
Nitrogen, Nitrite + Nitrate Total		mg/L	Quarterly	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	Quarterly	Calculated	

Changes from Previous Permit

~~The effluent monitoring frequency for all parameters were considered. Monitoring frequencies are based on the size and type of the facility and are established to best characterize effluent quality and variability, to detect events of noncompliance, and to ensure fairness and consistency in permits issued across the state. Requirements in administrative code (NR 108, 205, 210 and 214 Wis. Adm. Code) and Section 283.55, Wis. Stats. were considered, where applicable, when determining the appropriate monitoring frequencies for pollutants that have final effluent limits in effect during this permit term. For more information see the March 22, 2021 version of the Bureau of Water Quality Program Guidance Document "Monitoring Frequencies for Individual Wastewater Permits". After consideration of the above factors, the department has increased the monitoring frequency for BOD, TSS and phosphorus from weekly to 3/week.~~

~~Other significant monitoring and/or limits changes are as follows:~~

~~1) addition of copper, phosphorus and total suspended solids limits, 2) addition of an acute WET limit and an increase in the WET testing frequency from twice during the permit term to annual, 3) the addition of monitoring for hardness, total Kjeldahl nitrogen, nitrate + nitrite nitrogen and total nitrogen, and 4) a change in the temperature sample type from grab to multiple grab.~~

Phosphorus – Phosphorus compliance utilizing Water Quality Trading added.

Copper - Copper limits and remainder of the Copper Compliance Schedule were removed following completion of the scheduled action items.

Explanation of Limits and Monitoring Requirements

Limits were determined for Grande Cheese Company, Custom Ingredients Division existing discharge to the Little Roche-a-Cri Creek using chs. NR 102, 104, 105, 106, 207, 210, 212 and 217 of the Wisconsin Administrative Code (where applicable). For more information see the following December 5, 2022 memos from Benjamin Hartenbower to Holly Heldstab: 1) "Technology-Based Effluent Limitations for Grande Cheese Company, Custom Ingredients Division WPDES Permit No. WI-0050547" and 2) "Water Quality-Based Effluent Limitations for Grande Cheese Company, Custom Ingredients Division WPDES Permit No. WI-0050547".

BOD, TSS and pH: Categorial limits for BOD, total suspended solids and pH were evaluated based on updated production data. Chapter NR 240, Wis. Adm. Code, specifies effluent guidelines for discharges from dairy product categories of point sources and subcategories. The Grande Cheese Company, Custom Ingredients Division falls under the "Condensed Whey" and "Dry Whey" subcategories as defined in s. NR 240.02, Wis. Adm. Code. These guidelines are

based on federal effluent guidelines in 40 CFR Part 405 Subparts K and L. The permittee must meet the applicable effluent limit guidelines as described in this chapter.

Phosphorus and Wisconsin River Basin (WIRB) Total Maximum Daily Load (TMDL) Derived Limits: Phosphorus rules became effective December 1, 2010 per NR 217, Wis. Adm. Code, that required the permittee to comply with water quality based effluent limits (WQBELs) for total phosphorous. Grande Cheese Company however, is located within the Wisconsin River Basin Total Maximum Daily Load (TMDL), which was approved by EPA April 26, 2019. The TMDL establishes Waste Load Allocations (WLAs) for point source dischargers and determines the maximum amounts of phosphorus that can be discharged and still protect water quality. As outlined in Section 4.6 of the department's TMDL Development and Implementation Guidance: Integrating the WPDES and Impaired Waters Program, mass limits must be given in the permit that are consistent with the TMDL WLA and the phosphorus impracticability agreement that was approved by USEPA in 2012 (see NPDES MOA Addendum dated July 12, 2012 at https://prodoasint.dnr.wi.gov/swims/downloadDocument.do?id=167886175). The final effluent limits and monitoring expressed in the permit were derived from and comply with the applicable water quality criterion and are consistent with the assumptions and requirements of the EPA-approved WLA in the TMDL.

The Wisconsin River TMDL Waste Load Allocation (WLA) for total phosphorus was approved by the U.S. Environmental Protection Agency on April 26, 2019 and the site-specific criteria (SSC) in Appendix K were adopted by rule in s. NR 102.06 (7), Wis. Adm. Code, on June 1, 2020, and approved by the U.S. Environmental Protection Agency on July 9, 2020. The approved TMDL SSC WLA limit for phosphorus is 10 lbs/yr, which equates to calculated phosphorus mass limits of 0.11 lbs/day monthly average and 0.04 lbs/day 6-month average.

Effluent data indicates that Grande Cheese cannot consistently meet the final TMDL limits, however they are meeting the limits most of the time and need a year to adjust the R/O system to consistently keep effluent phosphorus levels below the new limits. Therefore, a compliance schedule has been included in the permit to allow Grande Cheese until 07/01/2024 to meet the limits. Discharge effluent concentration (mg/L) shall be reported three times weekly upon permit reissuance and will be used to calculate amounts reported for mass-based parameters. An additional reporting requirement for lbs/month will be used to calculate the facility's 12-month rolling sum of total monthly discharge, which can be compared directly to the facility's designated WLA. The final TMDL WLA-based effluent limits of 0.11 lbs/day as a monthly average and 0.04 lbs/day as a 6-month average will go into effect on 07/01/2024 in accordance with compliance schedule.

Phosphorus WQT - The industry is not able to meet the WQBEL. This permit authorizes the use of trading as a tool to demonstrate compliance with the phosphorus WQBELs. The permittee has entered into a credit purchase agreement with the water quality trading Clearinghouse pursuant to s. 283.84(1)(f), Wis. Stats. This permit includes terms and conditions related to the Credit Verification Package CVP-2023-01 submitted by the water quality trading clearinghouse. The total 'WQT TP Credits' available are designated in a credit purchase agreement between the permittee and Clearinghouse. The credit generator is implementing a variety of management practices including conversion of corn/alfalfa row crop agricultural fields to perennial grass with rotationally managed grazing. The Credit Verification Package proposes the generation of 15 lbs/yr phosphorus credits for the next eight years.

Additional WQT subsections in the permit provide information on compliance determinations, annual reporting and re-opening of the permit.

Copper and Hardness: Considering available effluent data from the current permit term (September 2023 to November 2024) the 1-day P_{99} copper concentration is 16.4 µg/L, and the 4-day P_{99} of effluent data is 13.4 µg/L. These effluent concentrations are below the calculated WQBELs for copper, therefore no effluent limits are needed. Quarterly copper monitoring is recommended to ensure that 11 sample results are available at the next permit issuance to meet the data requirements of s. NR 106.05, Wis. Adm. Code. Because of the relationship between hardness and daily maximum copper limits based on acute toxicity, quarterly hardness monitoring is also required.

Thermal: Requirements for Temperature are included in NR 102 Subchapter II Water Quality Standards for Temperature and NR 106 Subchapter V Effluent Limitations for Temperature. Thermal discharges must meet the Public Health criterion of 120 degrees F and the Fish & Aquatic Life criteria which are established to protect aquatic communities from

lethal and sub-lethal thermal effects. Based on the procedures in s. NR 106.56, Wis. Adm. Code, and an evaluation of available effluent data, no temperature effluent limits are required. Monthly temperature monitoring continues from the last permit throughout the next permit term.

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

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

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

Ammonia: Current acute and chronic ammonia toxicity criteria for the protection of aquatic life are included in Tables 2C and 4B of ch. NR 105, Wis. Adm. Code. Subchapter IV of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for ammonia. Available effluent data submitted with the permit application indicates there is no reasonable potential for the discharge to exceed the calculated ammonia limits, therefore no monitoring or limits are required.

Acute and chronic chloride toxicity criteria for the protection of aquatic life are included in Tables 1 and 5 of ch. NR 105, Wis. Adm. Code. Subchapter VII of ch. NR 106 establishes the procedure for calculating water quality based effluent limitations (WQBELs) for chloride. If the permittee's effluent data shows that a calculated WQBEL for chloride cannot be met, then the permit will include a chloride effluent limitation. s. NR 106.83 of subchapter VII also provides for some permittees to obtain temporary relief from a chloride WQBEL through the use of a "chloride variance". Effluent calculations of effluent data submitted with the permit application indicate that neither chloride monitoring nor limits are required.

PFOS and PFOA- NR 106 Subchapter VIII – Permit Requirements for PFOS and PFOA Dischargers became effective on August 1, 2022. Pursuant to s. NR 106.98(3)(b), Wis. Adm. Code, the department evaluated the need for PFOS and PFOA monitoring. Based on information available at the time the proposed permit was drafted, the department has determined the permittee does not need to sample for PFOS or PFOA as part of this permit reissuance. The department may re-evaluate the need for sampling at the next permit reissuance if new information becomes available that suggests PFOS or PFOA may be present in the discharge.

2 Land Treatment –Monitoring and Limitations

Sample Point Number: 001- EFFLUENT TO RIDGE & 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	7,500 gal/ac/day	Monthly	Calculated	
Chloride		mg/L	2/Month	24-Hr Flow Prop Comp	
Chloride		lbs/ac/yr	Annual	Calculated	
Nitrogen, Total Kjeldahl		mg/L	2/Month	24-Hr Flow Prop Comp	
Nitrogen, Total		mg/L	2/Month	24-Hr Flow Prop Comp	
Nitrogen, Max Applied On Any Zone	Annual Total	800 lbs/ac/yr	Annual	Calculated	
BOD5, Total		mg/L	2/Month	24-Hr Flow Prop Comp	
Nitrogen, Ammonia (NH3-N) Total		mg/L	2/Month	24-Hr Flow Prop Comp	
Nitrogen, Nitrite + Nitrate Total		mg/L	2/Month	24-Hr Flow Prop Comp	
Nitrogen, Organic Total		mg/L	2/Month	24-Hr Flow Prop Comp	

Changes from Previous Permit:

1) a maximum nitrogen loading limit of 800 lbs/acre/day, 2) the addition of a monitoring requirement for BOD5, ammonia, nitrate + nitrite nitrogen and organic nitrogen, 3) the addition of a requirement that the permittee report on their eDMRs the amount of chloride (in lbs/acre/year) discharged to the ridge and furrow system, and 4) the removal of language that allows the permittee to potentially have a higher maximum nitrogen limit that's contingent on groundwater monitoring results.

Explanation of Limits and Monitoring Requirements

Requirements for land treatment of industrial wastewater are determined in accordance with ch. NR 214 Wis. Adm. Code.

3 Groundwater –Monitoring and Limitations

3.1 Groundwater Monitoring System for Ridge & Furrow

Location of Monitoring system: NE ¼ of the SW ¼ of Section 6, T17N, R06E, Town of Adams

Wells to be Monitored upon permit reissuance: 801 (MW1), 814 (MW10A), 815 (MW10B), 816 (MW11), 817 (MW12), 818 (MW13), 827 (MW22A) and 828 (MW22B)

New Wells to be Monitored After Installation per the Compliance Schedule: 829 (MW23A) and 830 (MW23B)

Well Used To Calculate PALs: 814 (MW10A) and 815 (MW10B)

Point of Standards Application Well(s): 801 (MW1), 829 (MW23A) and 830 (MW23B)

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	Preventative Action Limit	Enforcement Standard	Frequency
Depth To Groundwater	feet	*****	N/A	Quarterly
Groundwater Elevation	feet MSL	*****	N/A	Quarterly
Chloride Dissolved	mg/L	125	250	Quarterly
Nitrogen, Nitrite + Nitrate (as N) Dissolved	mg/L	4.7	10	Quarterly
Nitrogen, Organic Dissolved	mg/L	2.3	N/A	Quarterly
Nitrogen, Ammonia Dissolved	mg/L	0.97	9.7	Quarterly
Nitrogen, Total Kjeldahl	mg/L	*****	N/A	Quarterly
Solids, Total Dissolved	mg/L	350	N/A	Quarterly
pH Field	su	9.0	N/A	Quarterly
Manganese Dissolved	mg/L	0.06	0.3	Quarterly
Iron Dissolved	mg/L	0.15	0.3	Quarterly

Changes from Previous Permit:

Based on recent calculations of groundwater sampling data, the following changes in the alternate concentration limits (ACLs), preventative action limits (PALs) and/or enforcement standards (ESs) are proposed: 1) chloride ACL discontinued & the public welfare standard applied, 2) nitrite + nitrate nitrogen ACL decreased, 3) ammonia nitrogen ACL discontinued & the public health standard applied, 4) pH PAL applied, 5) monitoring added and PAL/ES applied for iron & manganese for all wells (not just well 816), 6) monitoring for TKN applied to all wells (not just well 816). Two new monitoring wells (829 & 830) are to be installed, per the associated schedule.

Explanation of Limits and Monitoring Requirements

Groundwater limits and requirements are determined in accordance with ch. NR 140, Wis. Adm. Code. Indicator parameter Preventive Action Limit (PAL) values are established per s. NR 140.20 Wis. Adm. Code. Alternative Concentration Limits as allowed under s. NR 140.28 Wis. Adm. Code, are established on a case by case basis. For more information see the groundwater evaluation from Woody Myers dated January 23, 2023 (Revised March 29, 2023) titled

"Grande Cheese Company, Custom Ingredient Div. – Land Treatment Evaluation Report, WPDES Permit # WI-0050547".

4 Land Application - Sludge

Sample Point Number: 002- LIQUID WASTES

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total Kjeldahl		mg/L	Monthly	Grab	
Chloride		mg/L	Monthly	Grab	
Phosphorus, Total		mg/L	Monthly	Grab	
Phosphorus, Water Extractable		Percent	Monthly	Calculated	
Potassium, Total Recoverable		mg/L	Monthly	Grab	

Changes from Previous Permit:

To better determine compliance and track impacts to groundwater, monitoring for water extractable phosphorus and total recoverable potassium has been added as a requirement at Outfall 002.

Explanation of Limits and Monitoring Requirements

Requirements for land application of industrial liquid wastes are determined in accordance with ch. NR 214 Wis. Adm. Code.

WATER EXTRACTABLE PHOSPHORUS

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

5 Schedules

~~5.1 Phosphorus Limit Compliance Schedule~~

~~This compliance schedule requires the permittee to achieve compliance with the phosphorus limits by the specified date.~~

~~Required Action~~	~~Due Date~~
~~**Report on Effluent Discharges**: Submit a report on effluent discharges of phosphorus with conclusions regarding compliance.~~	~~12/31/2023~~
~~**Complete Actions**: Complete actions and achieve compliance with the effluent phosphorus limits. Limits becomes effective 07/01/2024.~~	~~06/30/2024~~

~~**Explanation of Schedule**: The compliance schedule for phosphorus provides a schedule for conducting the actions necessary to comply with the new limits. The compliance schedule lays out a timeline for the permittee to fine tune their operations to comply with the limits by the end of the schedule.~~

5.1 Annual Water Quality Trading (WQT) Report

Required Action	Due Date
Annual WQT Report: Submit an annual WQT report that shall cover the first year of the permit term. The WQT Report shall include: The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance; The source of each month's pollutant reduction credits by identifying the credit verification package that details the source; Results of the annual inspection of each nonpoint source management practice that generated any of the pollutant reduction credits used during the previous year; and Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.	01/31/2026
Annual WQT Report #2: Submit an annual WQT report that shall cover the previous year.	01/31/2027
Annual WQT Report #3: Submit an annual WQT report that shall cover the previous year.	01/31/2028
Annual WQT Report Required After Permit Expiration: In the event that this permit is not reissued by the expiration date, the permittee shall continue to submit annual WQT reports by January 31 each year covering the total number of pollutant credits used, the source of the pollution reduction credits, a summary of annual inspection reports performed, and identification of noncompliance or failure to implement any terms or conditions of the credit verification package for the previous calendar year.	

Explanation of Compliance Schedules:
Reports are required that include the following information:

- Verification that site inspections occurred;
- Results of site inspection findings;
- Identification of noncompliance or failure to implement any terms or conditions of the permit or credit verification package that have not been reported in discharge monitoring reports;
- Any applicable notices of termination or management practice registration; and
- A summary of credits used each month over the calendar year

5.2 Copper Compliance Schedule

This compliance schedule requires the permittee to achieve compliance with the copper limits by the specified date.

Required Action	Due Date
Report on Effluent Discharges: Submit a report on effluent discharges of copper with conclusions regarding compliance.	06/30/2024
Action Plan: Submit an action plan for complying with the effluent limitation. If construction is required, include plans and specifications with the submittal.	12/31/2024
~~**Initiate Actions**: Initiate actions identified in the plan.~~	~~09/30/2025~~
~~**Complete Actions**: Complete actions necessary to achieve compliance with the copper effluent limitations. Limits becomes effective 07/01/2026.~~	~~06/30/2026~~

~~**Explanation of Schedule**: The compliance schedule for copper provides a schedule for conducting the actions necessary to comply with the new limits. The compliance schedule lays out a timeline for the permittee to investigate and implement a plan to comply with the limits by the end of the schedule.~~

Copper schedule ended as of modification -2.

5.3 Land Treatment Management Plan

Required Action	Due Date
Update 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. The plan shall also include a map of the land treatment system per s. NR 141.065 Wis. Adm. Code. All monitoring well locations shall be reported to the department on a plan map drawn to a specific scale. The map shall indicate structure boundaries, property boundaries, any nearby surface waters and a north arrow. The plan shall show the wells in relation to each other, to property and structure boundaries and to a common reference point on a horizontal grid system. The origin of the grid system shall be located according to latitude and longitude or according to the state plane coordinate system. The exact vertical location of the top of the well casing shall be referenced to the nearest benchmark for the national geodetic survey datum to an accuracy of 0.01 feet. This plan map shall show the exact location of the installed well on a horizontal grid system which is accurate to within one foot. The DMZ should be clearly marked on the map. The land treatment system shall be operated in accordance with the approved management plan.	09/30/2023

Explanation of Schedule: An up-to-date Land Treatment Management plan is a standard requirement in reissued industrial permits per s. NR 214.13(5)(e) Wis. Adm. Code.

5.4 Groundwater Monitoring Well Location Submittal

Required Action	Due Date

Submit Latitude/Longitude of GW Monitoring Well: The permittee shall submit to the department the latitude/longitude of the groundwater monitoring wells, in decimal degrees.	09/30/2023

Explanation of Schedule: A precise location of the monitoring wells is required per ch. NR 141.065 Wis. Adm. Code.

5.5 Groundwater Well Installation- 829 (MW23A) & 830 (MW23B)

Required Action	Due Date
Plans and Specifications: Submit plans and specifications for installation of monitoring wells 829 (MW23A) and 830 (MW23B) to be installed.	09/30/2023
Installation: Complete well installation in accordance with ch NR 141, Wisconsin Administrative Code. Permittee shall notify the department within 14 days of installation so that proper monitoring forms can be provided. he wells shall be monitored monthly for the three consecutive months following installation. (Note: Documentation of well construction must be submitted to the Department within 60 days of well installation.)	05/31/2024

Explanation of Schedule: Because the groundwater monitoring system is inadequate to determine compliance, two new point of standards application wells for this land treatment system are required. See groundwater evaluation memo for more information.

5.6 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.	09/30/2023

Explanation of Schedule: An up-to-date Land Application Management plan is a standard requirement in reissued industrial permits per s. NR 214.17(6)(c) Wis. Adm. Code.

Special Reporting Requirements

N/A

Other Comments:

Publishing Newspaper: Adams Friendship Times Reporter, P.O. Box 99, Adams, WI 53910

Attachments:

- Categorical Limits Calculations: "Technology-Based Effluent Limitations for Grande Cheese Company, Custom Ingredients Division WPDES Permit No. WI-0050547", by Benjamin Hartenbower, dated December 5, 2022
- Water Quality Based Effluent Limits: Water Quality-Based Effluent Limitations for Grande Cheese Company, Custom Ingredients Division WPDES Permit No. WI-0050547", by Benjamin Hartenbower, dated December 5, 2022
- NR 140 Groundwater Evaluation Report: "Grande Cheese Company, Custom Ingredient Div. – Land Treatment Evaluation Report, WPDES Permit # WI-0050547", by Woody Myers, dated January 23, 2023 (Revised March 29, 2023 and June 29, 2023)

Modification Attachments:

- Grande Cheese Company, Custom Ingredients Division Final WQT Plan
- Grande Cheese Company, Custom Ingredient Division Verification of Pollutant Reduction Credits CVP-2023-01 Letter

Proposed Expiration Date:

June 30, 2028

Justification Of Any Waivers From Permit Application Requirements

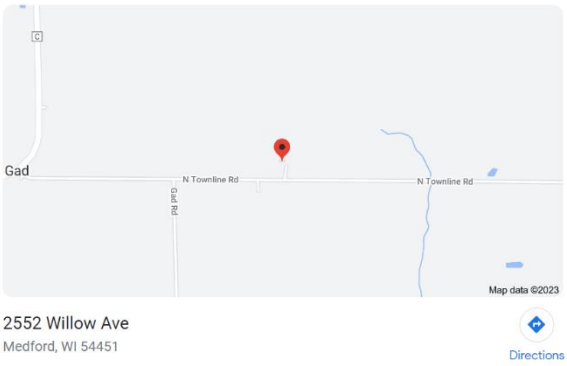
N/A

Prepared By: Holly Heldstab, Wastewater Specialist **Date:** June 29, 2023

Modified By: Holly Heldstab, Wastewater Specialist **Date**: August 14, 2023

Modified By: Ashley Clark, Wastewater Specialist **Date**: January 10, 2025

Project Name: R Dairy LLC-Water Quality Trading Credits
Prepared by: Water and Land Solutions LLC-Paul Daigle, Certified Grazing Planner, State Licensed Professional Soil Scientist and Hydrologist.



Farm owner and manager:
Joseph Tomandl III
247606 Gad Rd
Medford, WI, 54451-5100
Phone: 715-748-9816
Email: joetomandl@gmail.com

This project is for the entire R Dairy LLC agricultural land. Located in Taylor County WI., it is in HUC 10 Watershed 0707000207 (Black Creek), with a small inclusion of HUC 10 Watershed 0707000208 (Wood Creek-Big Rib River). The watershed flows to the South East towards tributaries to the Big Rib River. The projects are changes to past farmland management practices and will require a change in farming methods but no permits or actual construction for the change to occur. The property address is 2552 Willow Avenue, Medford, WI.

The plan is to convert 149 acres of farmland (note total farm acreage is 156 acres, portions of fields R11 and R12 are rented and not included in this proposal estimate) that has been in continuous corn silage with annual applications of liquid dairy manure to a prescribed grazing system. The farm will be converted to grass (70%) and legume (30%) pastures (NRCS Standard 512) which will then be rotationally grazed following an NRCS Prescribed Grazing plan (NRCS Standard 528) and Nutrient Management plan implementation (NRCS Standard 590). The farm will also be a certified organic dairy farm.

Annual pounds of phosphorus runoff for existing (baseline) and planned conditions were determined using SNAPPlus Water Quality Trade Report. Phosphorus runoff for existing conditions were based on the historical knowledge of how the farm would have been managed if it were not being planned to be converted to Prescribed Grazing. The farm was managed for continuous corn silage, using spring tillage and twice annual dairy liquid manure applications for a total of 15,000 gallons per acre per year, this was over a 12 year period. SNAPPlus calculations for the planned farming practice consist of spring tillage to plant a multi-species cover crop followed by a second year of annual cover crop and legume forages. The fields will be fully converted to perennial grass and legumes utilizing no-till drill establishment in 2023, if all goes as planned. Full establishment of grasses were delayed to 2023 due to concern over grass herbicide carryover. Prescribed Grazing will begin once pastures are fully developed and can support livestock numbers. Upon implementation, Water and Land Solutions LLC, will certify R Dairy LLC meets the following NRCS standards: Prescribed Grazing 528, Pasture and Hayland Planting 512, and Nutrient Management 590. A nutrient management plan was developed, submitted and approved by Taylor County Land Conservation in March of 2023 for this farm. Soil phosphorus levels were determined using NRCS Standard 590 soil testing requirements and were tested by a certified soil testing lab-Rock River Labs. (see soil test reports).

Annual phosphorus credits were determined using a 12-year cropping scenario years 2021-2032. Phosphorus credits were determined using the Water Quality report for P trading in SNAPPlus. Calculations are included in this application. Planned manure applications shall take place when the soil is not frozen, saturated or snow covered. Applications shall not exceed 590 standards and a Phosphorus Index of 1. Current annual rates are 10 tons per acre through grazing and 6000 gallons of liquid manure. Annual 590 plans will be available upon request. All calculations shall continue to utilize SNAPPlus.

R Dairy LLC will meet all State of WI Performance Standards and Prohibitions. Based upon previous management and ownership R Dairy LLC did not meet the Phosphorus Index and exceeded tolerable soil loss. Water and Land Solutions LLC will certify compliance when pastures are fully established and prescribed grazing is implemented.

Field Map

Farm: R Dairy LLC, V20 Generated:4/11/2023, Crop year: 2023, Township Range Section:31N 2E s36

Field Map

Farm: R Dairy LLC, V20 Generated:4/11/2023, Crop year: 2023, Township Range Section:31N 2E s36

FM6: Soil Test Report

Reported For	R Dairy LLC
Printed	2023-04-26
Plan Completion/Update Date	2022-12-15
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\Nutrient Management \R Dairy 2023 Nutrient mgt\R-Dairy (2).snapDb	

Prepared for:
R Dairy LLC
attn: Joe Tomandl III
2552 Willow Avenue
Medford , 54451

			Predominant					Samples				in ppm			
Field Name	Subfarm	Acres	Soil Map Symbol	Soil Name	Soil Test Date	Soil Test Lab	Lab Number	Rec. #	Actual #	pH	OM%	P	K	S	CEC
R1		9.3	3456A	MAGNOR	2022-09-21	Rock River Laboratory	262488	2	2	6.6	4.3	82	244	4.4	14
R11		57.2	457B	FREEON	2022-09-21	Rock River Laboratory	262488	11	12	6.0	4.1	38	104	2.9	11
R12		35.3	3456A	MAGNOR	2022-09-21	Rock River Laboratory	262488	7	7	6.4	4.0	61	110	2.7	13
R13		6.6	3456A	MAGNOR	2022-09-21	Rock River Laboratory	262488	1	2	6.3	3.7	66	113	3	13
R2		16.2	3456A	MAGNOR	2022-09-21	Rock River Laboratory	262488	3	3	6.9	4.6	78	147	3.5	17
R3		9.4	923A	CAPITOLA	2022-09-21	Rock River Laboratory	262488	2	2	6.5	4.4	53	134	3.8	17
R4		22	923A	CAPITOLA	2022-09-21	Rock River Laboratory	262488	3	5	5.9	6.6	113	279	6.6	15

WQ1: P Trade Report

Reported For	R Dairy LLC
Printed	2023-04-26
Plan Completion/Update Date	2022-12-15
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\P Trade\R Dairy LLC Baseline Scenario.snapDb	

Prepared for:
R DairyLLC
attn: Joe Tomandl III
2552 Willow Avenue
Medford , 54451

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as **PTP** (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov/** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

P Trade Report				PTP									
Field Name	Soil Series	Soil Symbol	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
R1	MAGNOR	3456A	9	75	75	76	76	77	78	78	79	80	80
R11	FREEON	457B	56	479	481	486	490	495	499	503	508	512	517
R12	MAGNOR	3456A	30	232	233	235	238	240	242	244	246	248	251
R13	MAGNOR	3456A	7	51	51	52	52	53	53	54	54	55	55
R2	MAGNOR	3456A	16	146	147	148	150	151	152	153	155	156	157
R3	CAPITOLA	923A	9	46	47	47	48	48	49	49	50	50	51
R4	CAPITOLA	923A	22	171	172	173	175	176	177	179	180	181	183
Total			**149**	**1,200**	**1,206**	**1,217**	**1,228**	**1,239**	**1,250**	**1,261**	**1,272**	**1,283**	**1,294**

WQ1: P Trade Report

Reported For	R Dairy LLC
Printed	2023-04-27
Plan Completion/Update Date	2022-12-15
SnapPlus Version 20.4 built on 2021-06-03	
C:\Water And Land Solutions\Tomandl Farms\R Dairy\P Trade\R-Dairy LLC Planned Scenario.snapDb	

Prepared for:
R Dairy LLC
attn: Joe Tomandl III
2552 Willow Avenue
Medford , 54451

The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as **PTP** (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses (PTP) must be converted into 'P credits' according to DNR guidance.

For more information go to **http://dnr.wi.gov/** and type keyword: **Water Quality Trading**

Questions? Please contact DNRphosphorus@wisconsin.gov

This report was developed for Wisconsin DNR Water Quality Trading and Adaptive Management purposes and cannot be used to demonstrate compliance with NR 151 or NRCS 590 NM plan requirements.

P Trade Report				PTP									
Field Name	Soil Series	Soil Symbol	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
R1	MAGNOR	3456A	9	15	9	9	8	8	8	8	8	8	8
R11	FREEON	457B	56	73	38	38	36	35	35	34	34	35	35
R12	MAGNOR	3456A	30	45	27	26	25	24	24	24	24	24	24
R13	MAGNOR	3456A	7	10	6	6	6	6	6	6	6	6	6
R2	MAGNOR	3456A	16	29	18	16	15	15	15	15	15	15	15
R3	CAPITOLA	923A	9	12	9	8	8	7	7	7	7	7	7
R4	CAPITOLA	923A	22	46	28	27	26	25	24	24	24	24	24
Total			**149**	**231**	**134**	**131**	**124**	**120**	**118**	**118**	**118**	**118**	**119**

R Dairy LLC WQ Trade Report Results	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	
Total-Baseline	148.5	1200	1206	1217	1228	1239	1250	1261	1272	1283	1294	
Total-Planned Scenario	148.5	230	138	136	127	122	115	114	116	116	116	TOTAL
Total-Difference between Baseline and Planned-available for WQ Trade	148.5	970	1068	1081	1101	1117	1135	1147	1156	1167	1178	11120

Annual interim credits = Actual rotational PI/Trading value of 1.2 x 10 year average trade ratio.

1111/1.2= 927 Average Annual Interim Credits for Trade.

NM1: Narrative and Crops Report

Starting Year	**2021**
Reported For	**R Dairy LLC**
Printed	**2023-04-26**
Plan Completion/Update Date:	**2022-12-15**
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\P Trade\R Dairy LLC Baseline Scenario.snapDb	

Prepared for:
R Dairy LLC
attn:Joe Tomandl III
2552 Willow Avenue
Medford , 54451

Farm has 7 fields totalling 156 cropped acres.
Farm Narrative: R Dairy: This is Joe and Christy's third expansion farm and mimics how Legacy dairy in form, function and operation. It is again operated separately from either of the other dairy farms. It consists of 175 cows on 156 acres and is 100% perennial forage based farm, just like their first two farms.

All farmed ground was soil sampled in the fall of 2022, all new samples will be taken in the fall of 2025.

Manure is stored on farm in a pit that is roughly 678,750 gallons of storage. Manure is collected only when cattle are getting milked and during the winter months. Some manure is hauled off farm to rental ground that is cropped for hay on a year to year basis. No winter spreading is done on the farm.

Annual Farm Notes:

Crop Year	Annual Notes
2023	All rented ground and hay ground is selected for 2 application of Dairy Slurry at approximately 6,000 gals after cuttings, once after first cutting and once again in the summer. All grazed ground in roughly broken down in 3 acre paddocks and is hoped to be rotated 5 times with the cattle through the course of the grazing season. All fields recieved no-till seeding

Spreader Calibration Methods: Amount applied / Acres

Narrative and Crops:

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027	2028
R1	9.3	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R11	55.5	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R12	29.5	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R13	6.6	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R2	16.2	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R3	9.4	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre
R4	22	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Corn silage Spring Chisel, disked 15.1-20 ton/acre

Summary by Crop:
NOTE: Yields calculated using the midpoint of the SnapPlus yield goal range for each crop.

Crops Grouped By Category		2021	2022	2023	2024	2025	2026	2027	2028
Corn silage	Acres	149	149	149	149	149	149	149	149
	ton	2,615	2,615	2,615	2,615	2,615	2,615	2,615	2,615

NM1: Narrative and Crops Report

Starting Year	**2021**
Reported For	**R Dairy LLC**
Printed	**2023-04-26**
Plan Completion/Update Date:	**2022-12-15**
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\P Trade\R-Dairy LLC Planned Scenario.snapDb	

Prepared for:
R Dairy LLC
attn:Joe Tomandl III
2552 Willow Avenue
Medford , 54451

Farm has 7 fields totalling 156 cropped acres.
Farm Narrative: R Dairy: This is Joe and Christy's third expansion farm. This SNAP Plus Database has been developed for the purpose of a Phosphorus Trade with RES. This baseline duplicate past historical management which was 100% corn silage, with liquid dairy manure applied in the fall and spring.

All farmed ground was soil sampled in the fall of 2022, all new samples will be taken in the fall of 2025.

Annual Farm Notes:

No Annual Farm Notes

Spreader Calibration Methods: Amount applied / Acres

Narrative and Crops:

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027	2028
R1	9.3	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre
R11	55.5	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre

Field Name	Field Acres	2021	2022	2023	2024	2025	2026	2027	2028
R12	29.5	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre
R13	6.6	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre
R2	16.2	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre
R3	9.4	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre
R4	22	Corn silage Spring Chisel, disked 15.1-20 ton/acre	Oats with underseeded legume cover crop Spring Chisel, disked 30-60 bu/acre	Pasture seeding, legume more than 30% No Till 0.5-1.9 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre	Pasture, rotational stocking, grass/legume None 4.1-5 ton/acre

NM5: Spreading and Nutrient Management Sorted By Crop Report

Crop Year	**2023**
Reported For	**R Dairy LLC**
Printed	**2023-05-22**
Plan Completion/Update Date	**2022-12-15**
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\P Trade\R Dairy LLC Baseline Scenario.snapDb	

Prepared for:
R Dairy LLC
attn:Joe Tomandl III
2552 Willow Avenue
Medford , 54451

Corn on Corn Fields						Crop Removal			Soil Test ppm		Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Over(+) Under(-) Adj. UW Recs lb/ac			Applications				
Name	Field Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2023 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Rate and Method	N-P2O5-K2O credit	App Acres and Time	Total Amt
R1	9.3	3456A	Corn silage	Corn silage	15.1-20	65	145	SCD	82	244	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	9.3 Spreadable	69750 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	9.3 Spreadable	69750 gal
R11	55.5	457B	Corn silage	Corn silage	15.1-20	65	145	SCD	38	104	125	0	45	150	90	255	25	90	210	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	57.2 Spreadable	429000 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	57.2 Spreadable	429000 gal
R12	29.5	3456A	Corn silage	Corn silage	15.1-20	65	145	SCD	61	110	125	0	45	150	90	255	25	90	210	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	35.3 Spreadable	264750 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	35.3 Spreadable	264750 gal
R13	6.6	3456A	Corn silage	Corn silage	15.1-20	65	145	SCD	66	113	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	6.6 Spreadable	49500 gal

Corn on Corn Fields						Crop Removal			Soil Test ppm		Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Over(+) Under(-) Adj. UW Recs lb/ac			Applications				
Name	Field Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2023 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Rate and Method	N-P2O5-K2O credit	App Acres and Time	Total Amt
R13	6.6	3456A	Corn silage	Corn silage	15.1-20	65	145	SCD	66	113	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	6.6 Spreadable	49500 gal
R2	16.2	3456A	Corn silage	Corn silage	15.1-20	65	145	SCD	78	147	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	16.2 Spreadable	121500 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	16.2 Spreadable	121500 gal
R3	9.4	923A	Corn silage	Corn silage	15.1-20	65	145	SCD	53	134	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	9.4 Spreadable	70500 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	9.4 Spreadable	70500 gal
R4	22	923A	Corn silage	Corn silage	15.1-20	65	145	SCD	113	279	125	0	0	150	90	255	25	90	255	Dairy Slurry 10-6-17	7500 gal Fall Incorp	75-45-128	22 Spreadable	165000 gal
																				Dairy Slurry 10-6-17	7500 gal Spring Incorp	75-45-128	22 Spreadable	165000 gal

NM5: Spreading and Nutrient Management Sorted By Crop Report

Crop Year	**2023**
Reported For	**R Dairy LLC**
Printed	**2023-05-17**
Plan Completion/Update Date	**2022-12-15**
SnapPlus Version 20.4 built on 2021-06-03	
C:\WaterAndLandSolutions\TomandlFarms\R Dairy\P Trade\R-Dairy LLC Planned Scenario.snapDb	

Prepared for:
R Dairy LLC
attn:Joe Tomandl III
2552 Willow Avenue
Medford , 54451

Other Crops Fields					Crop Removal				Soil Test		Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Over(+) Under(-) Adj. UW Recs lb/ac			Applications				
Name	Field Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2023 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Rate and Method	N-P2O5-K2O credit	App Acres and Time	Total Amt
R1	9.3	3456A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	82	244	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Spring Unincorp	42-36-102	9.3 Spreadable	55800 gal
R11	55.5	457B	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	38	104	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Spring Unincorp	42-36-102	57.2 Spreadable	343200 gal
R12	29.5	3456A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	61	110	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Spring Unincorp	42-36-102	35.3 Spreadable	211800 gal

Other Crops Fields					Crop Removal				Soil Test		Adjusted Recs lb/ac			Planned Applications and Credits lb/ac			Over(+) Under(-) Adj. UW Recs lb/ac			Applications				
Name	Field Ac.	Soil Map Symbol (pred) & N Res	Prior Crop	2023 Crop	Yield Goal	P2O5	K2O	Tillage	Avg P	Avg K	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O	Product Name and Analysis	Rate and Method	N-P2O5-K2O credit	App Acres and Time	Total Amt
R13	6.6	3456A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	66	113	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Spring Unincorp	42-36-102	6.6 Spreadable	39600 gal
R2	16.2	3456A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	78	147	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Summer Unincorp	42-36-102	16.2 Spreadable	97200 gal
R3	9.4	923A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	53	134	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Summer Unincorp	42-36-102	9.4 Spreadable	56400 gal
R4	22	923A	Oats with underseeded legume cover crop	Pasture seeding, legume more than 30%	0.5-1.9	15	75	NT	113	279	10	0	0	42	36	102	32	36	102	Dairy Slurry 7-6-17	6000 gal Spring Unincorp	42-36-102	22 Spreadable	132000 gal

148.5 planned Other Crops acres

936,000 planned gal Dairy Slurry

ARM-LWR-480.docx (REV. 09/22/17)

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
Bureau of Land and Water Resources
PO Box 8911, Madison WI 53708-8911. Phone: 608-224-4605

Use this form to check nutrient management (NM) plans for compliance with the WI NRCS 2015-590 Standard.

Nutrient Management Checklist

Wis. Stat. §92.05(3) (k), Wis. Admin. Code §ATCP50.04(3) and Ch. 51

COUNTY **Taylor**	DATE PLAN SUBMITTED **5/15/2023**	GROWING SEASON YEAR PLAN IS WRITTEN FOR **2023** (from harvest to harvest)		
TOWNSHIP: (T. N.) RANGE: (R. E., W).		CHECK ONE: Initial Plan or Updated Plan		
NAME OF FARM OPERATOR RECEIVING NM PLAN **Joe Tomandl III**	FARM NAME (OPTIONAL) **R Dairy LLC**		BUSINESS PHONE **715-748-9816**	
STREET ADDRESS **2552 Willow Avenue**	CITY **Medford**		STATE **WI**	ZIP **54451**
REASON THE PLAN WAS DEVELOPED: To better manage nutrients on the farm.			CROPLAND ACRES (OWNED & RENTED) **156**	
RENTED FARM(S) LANDOWNER NAME(S) AND ACREAGE: add sheet(s) if needed				
WAS THE PLAN WRITTEN IN SNAPPLUS? **YES**	If yes, which software version, if known? **20.4**			
CHECK PLANNER'S QUALIFICATION: (1. NAICC-CPCC, 2. ASA-CCA, 3. SSSA-Soil Scientist, 4. DATCP approved training course, 5. Other approved by DATCP)				
NAME OF QUALIFIED NUTRIENT MANAGEMENT PLANNER Paul Daigle-Water and Land Solutions LLC (Professional Soil Scientist)			BUSINESS PHONE 715-573-1435	
STREET ADDRESS 235678 Morgan Lane,	CITY Wausau		STATE WI	ZIP 54403

Use header sections to add comments. Mark NA in the shaded sections if no manure is applied.

1. Does the plan include the following nutrient application requirements to protect surface and groundwater?

This section applies to fields and pastures. If no manure is applied, check NA for 1.c., 1.h., 1.i., 1.n., 1.o., 1.q., 1.s.	Yes	No	NA
a. Determine field nutrient levels from soil samples analyzed by a DATCP **certified laboratory.**	X		
b. For fields or pastures with mechanical nutrient applications, determine field nutrient levels from **soil samples** collected within the last **4 years** according to 590 Standard (590) and UWEX Pub. A2809, *Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin* (A2809) typically collecting **1 sample per 5 acres** of 10 cores. Soil tests are not required on **pastures** that do not receive mechanical applications of nutrients if either of the following applies: 1. The pasture average stocking rate is one animal unit per acre or less at all times during the grazing season. 2. The pasture is winter grazed or stocked at an average stocking rate of more than one animal unit per acre during the grazing season, and a nutrient management plan for the pasture complies with 590 using an assumed soil test phosphorus level of 150 PPM and organic matter content of 6%.	X		
c. For **livestock siting permit approval**, collect and analyze soil samples meeting the requirements above in 1. b., excluding pastures, within 12 months of approval and revise the nutrient management plan accordingly. Until then, either option below maybe used: 1. Assume soil test phosphorus levels are greater than 100 ppm soil test P, OR 2. Use preliminary estimates analyzed by a certified DATCP laboratory with soil samples representing > 5 ac/sample.			X
d. **Identify all fields'** name, boundary, acres, and location.	X		
e. Use the field's previous year's legume credit and/or applications, predominant soil series, and realistic yield goals to determine the crop's nutrient **application rates consistent with A2809 for ALL forms of N, P, and K.**	X		
f. Make no **winter applications of N and P** fertilizer, except on grass pastures and winter grains.	X		
g. Document method used to determine **application rates.** Nutrients shall not runoff during or immediately after application.	X		
h. Identify in the plan that **adequate acreage** is available for manure produced and/or applied.			
i. Apply a single phosphorus (P) assessment using either the **P Index** or **soil test P** management strategy to all fields within a tract when fields receive manure or organic by-products during the crop rotation.		X	
j. Use **complete crop rotations** and the field's **critical soil** series to determine that sheet and rill erosion estimates will not exceed **tolerable soil loss** (T) rates on fields that receive nutrients.	X		
k. Use contours; reduce tillage; adjust the crop rotation; or implement other practices to **prevent** ephemeral **erosion**; and maintain perennial vegetative cover to **prevent reoccurring gullies** in areas of concentrated flow.	X		
l. Make no nutrient applications within 8' of irrigation wells or where **vegetation is not removed.**			X
m. Make no nutrient applications within **50' of all direct conduits to groundwater**, unless directly deposited by gleaning/pasturing animals or applied as starter fertilizer to corn.			

	Yes	No	NA
n. Make no **untreated manure applications** to areas within 1000' of a **community potable water well** or within 100' of a **non-community potable water well** (ex. church, school, restaurant) unless manure is treated to substantially eliminate pathogens.			X
o. Make no manure applications to areas **locally delineated** by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application.			X
p. Make no applications of **late summer or fall commercial N fertilizer** to the following areas UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre on: • Sites vulnerable to N leaching **PRW Soils** (P=high permeability, R= bedrock < 20 inches, or W= wet < 12 inches to apparent water table); • Soils with depths of 5 feet or less to bedrock; • Area within 1,000 feet of a community potable water well. On **P soils, when commercial N is applied** for full season crops in **spring and summer**, follow A2809 and apply one of the following: 1. A split or delayed N application to apply a majority of crop N requirement after crop establishment. 2. Use a nitrification inhibitor with ammonium forms of N. 3. Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.	X		
q. Limit manure applications in late summer or fall using the lesser of A2809 or the following 590 rates on **PRW Soils.** Use ≤ 120 lbs. available N/acre on: **P and R soils** on *all crops, except annual crops*. Additionally, manure with ≤ 4% dry matter (DM) wait until after soil temp. < 50°F or Oct. 1, and use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combo. W soils** on *all crops*. Additionally, manure with ≤ 4% DM on *all crops* use at least one of the following: **1.** Use a nitrification inhibitor; **2.** Apply on an established cover crop, an overwintering annual, or perennial crop; **3.** Establish a cover crop within 14 days of application; **4.** Surface apply & don't incorporate for at least 3 days; **5.** Wait until after soil temp. < 50°F or Oct. 1. Use ≤ 90 lbs. available N/acre on: **P and R soils** on *annual crops* wait until after soil temp. < 50°F or Oct. 1. Additionally, manure with ≤ 4% DM use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combination W soils** receiving manure with ≤ 4% DM on *all crops*.	X		
r. Use at least one of the following practices on **non-frozen soils for all nutrient applications** within **Surface Water Quality Management Area (SWQMA)** = 1000' of lakes/ponds or 300' of rivers: **1.** Maintain > 30% cover after nutrient application; **2.** Effective incorporation within 72 hours of application; **3.** Establish crops prior to, at, or promptly following application; **4.** Install/maintain vegetative buffers or filter strips; **5.** Have at least 3 consecutive years no-till for applications to fields with < 30% residue (silage) and apply nutrients within 7 days of planting.	X		
s. Limit mechanical applications to **12,000 gals/acre of unincorporated liquid manure or organic by-products with 11% or less dry matter where subsurface drainage is present** OR **within SWQMA**. Wait a minimum of 7 days between sequential applications AND use one or more of the practice options on non-frozen soils listed in **1.r.1.** through **1.r.5.**	X		

2. When frozen or snow-covered soils prevent effective incorporation, does the plan follow these requirements for winter applications of all mechanically applied manure or organic by-products? *This section doesn't apply to winter grazing/pasturing meeting 590 N and P requirements.*

If no manure is applied, check NA for 2.a. through 2.g..

	Yes	No	NA
a. Identify **manure quantities planned to be spread during the winter**, or the amount of manure generated in 14 days, whichever is greater. *For daily haul systems, assume 1/3 of the manure produced annually will need to be winter applied.*			X
b. Identify **manure storage capacity** for each type applied and stacking capacity for manure ≥ 16% DM if permanent storage does not exist.			X
c. Show on map and make no applications within the **SWQMA**.			X
d. Show on map and make no surface applications of liquid manure during **February and March** where **Silurian dolomite** is within 60 inches of the soils surface OR where **DNR Well Compensation** funds provided replacement water supplies for wells contaminated with livestock manure.			X
e. Show on map and make no applications of manure within **300 feet** of **direct conduits to groundwater**.			X
f. Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to **7,000 g/acre**. All winter manure applications are not to exceed **60 lbs. of P2O5/acre**.			X
g. Make no applications of manure to fields with **concentrated flow channels** unless using two of the following: **1.** Contour buffer strips or contour strip cropping; **2.** Leave all crop residue and no fall tillage; **3.** Apply manure in intermittent strips on no more than 50% of field; **4.** Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications; **5.** Reduce manure app. rate to 3,500 gal. or 30 lbs. P2O5, whichever is less; **6.** No manure application within 200 feet of all concentrated flow channels; **7.** Fall tillage is on the contour and slopes are lower than 6%. Make no applications to **slopes greater than 6%** (soil map units with C, D, E, and F slopes) unless the plan documents that no other accessible fields are available for winter spreading AND two of the options 2.g.1. through 2.g.5. are used.			X

I certify that the plan represented by the answers on this checklist complies with Wisconsin's NRCS 2015-590 NM Standard or is otherwise noted.

Paul Daigle — May 15, 2023

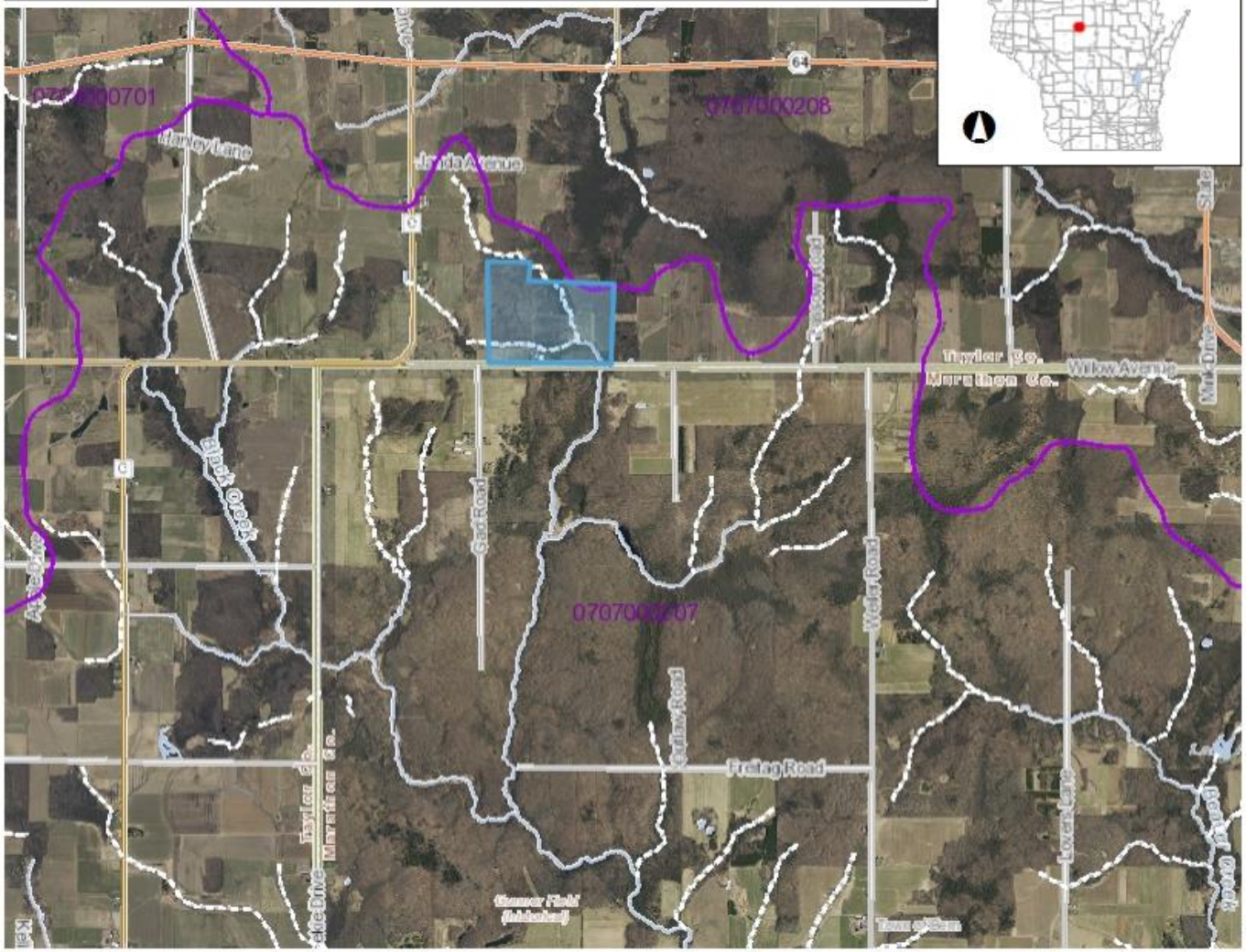
Qualified NM planner signature — *NAICC-Certified Professional Crop Consultant, ASA-Certified Crop Adviser, or SSSA-Soil Scientist* — Date

Qualified NM farmer-planner or Authorized farm operator signature receiving and understanding the plan — Date

5-15-23

Signature if reviewed for quality assurance — Date

Surface Water Data Viewer Map
R Dairy LLC



Legend

- 10-digit HUCs (Watersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

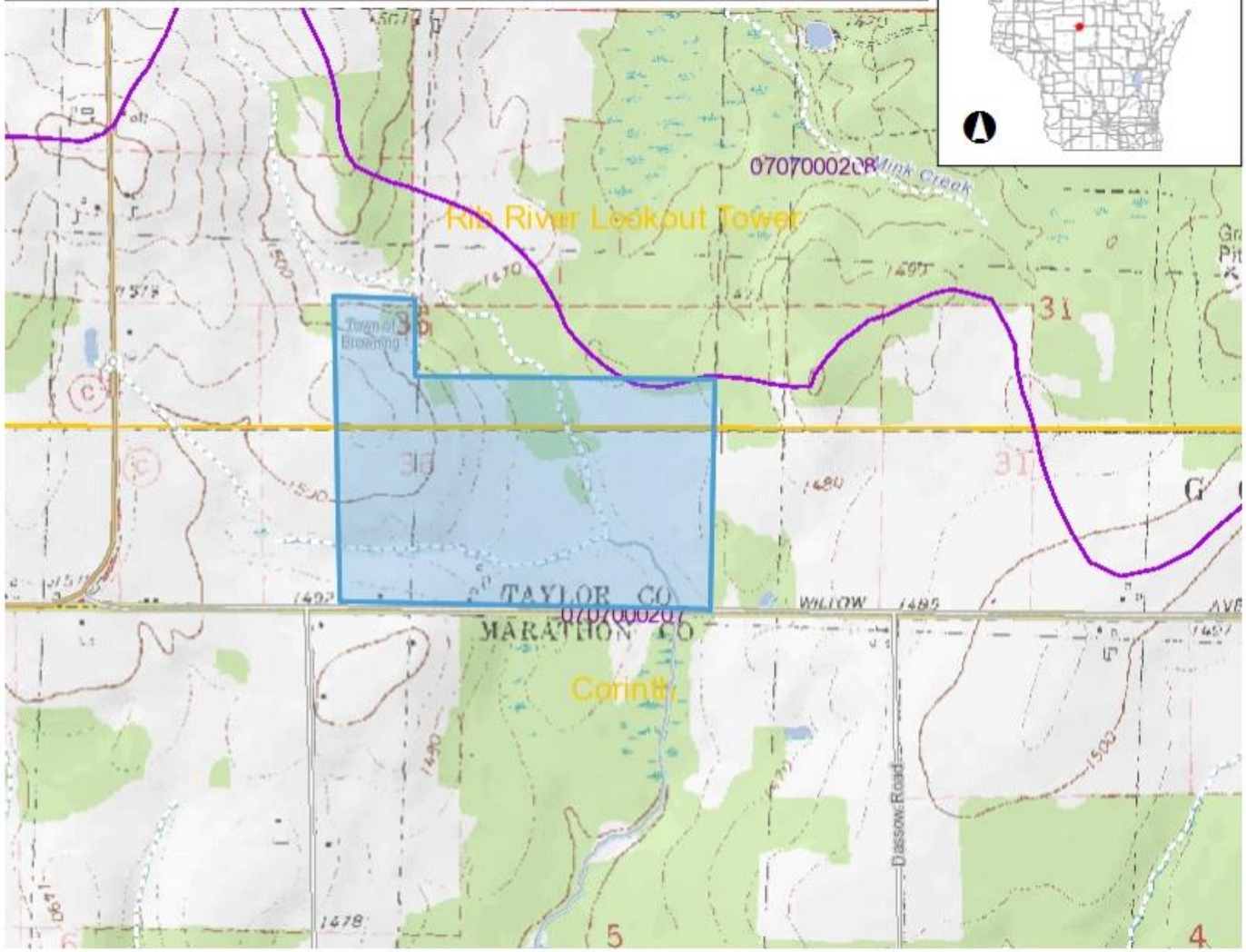
Notes

1.5 0 0.75 1.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 47,520

R Dairy LLC-Topographic Map
Surface Water Data Viewer Map



Legend

- 10-digit HUCs (Watersheds)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
- 24K USGS Quad Index - Level 7 - 16

Notes

0.5 0 0.25 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

1: 15,840

R Dairy LLC Operation and Maintenance requirements:

Standards:

1. The pasture perennial forage mix shall meet NRCS standard 512 (Pasture and Hayland planting) minimum requirements at all times. If pasture stand were to drop below the required plants per square foot required in NRCS standard 512, it will be inter-seeded following 512 standard, as soon as conditions allow, utilizing no-till establishment methods. No herbicides or tillage operations will take place as part of the interseeding.

2. There shall be no state regulated invasive plants within the conservation easement at any time during the agreement period. Information on regulated invasive plants and eradication methods are found at: http://dnr.wi.gov/topic/Invasives/species.asp?filterBy=Terrestrial&filterVal=Y&catVal=PlantsReg#RegSelect

3. Landowner or their agent shall contact Wisconsin Water Quality (WI WQT) Clearinghouse when an adequate forage plant density is established. An adequate stand shall consist of species listed in NRCS Standard 512, as planned in Prescribed Grazing Plan (NRCS Standard 528). Landowner may begin implementing prescribed grazing (NRCS Standard 528) upon verification of successful planting. Certification of 512, 590, and 528 shall be done by a Professional with credentials to complete said certifications. WI WQT Clearinghouse shall evaluate the field annually, document results and certify an adequate forage plant density exists. Landowner or their agent shall provide any documentation requirements upon request.

4. All nutrients, including manure and commercially available products, shall be applied following Nutrient Management Standard 590. Nutrient management plan shall be updated annually. All records must be available upon request.

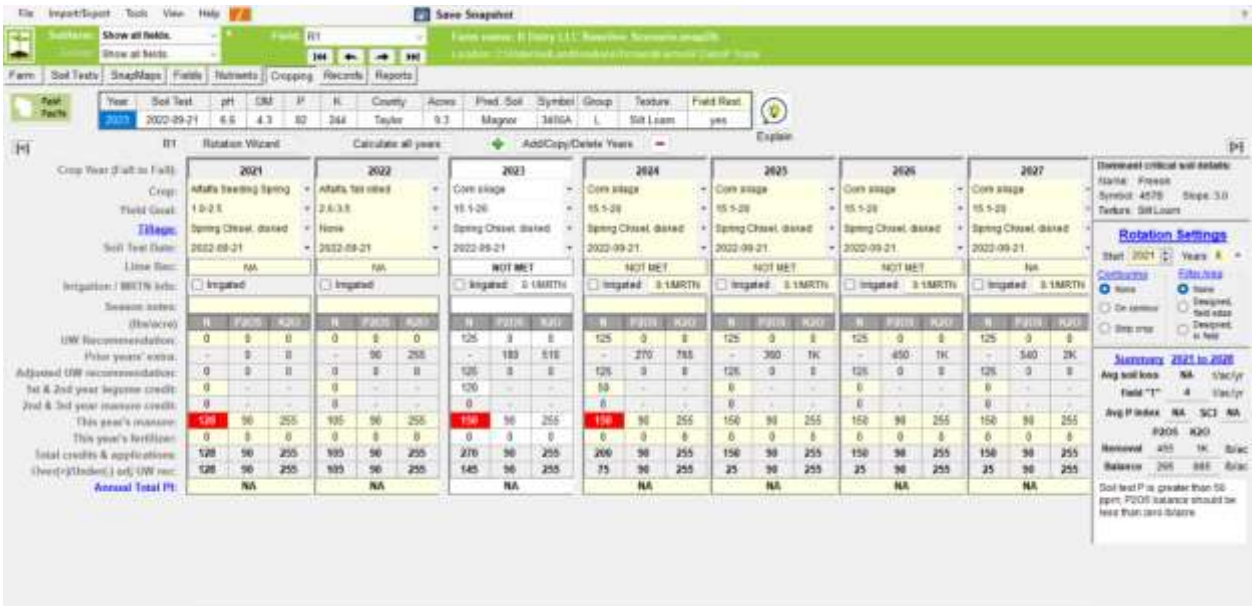
5. Landowner may apply pesticides and fungicides according to federal and state approved label directions.

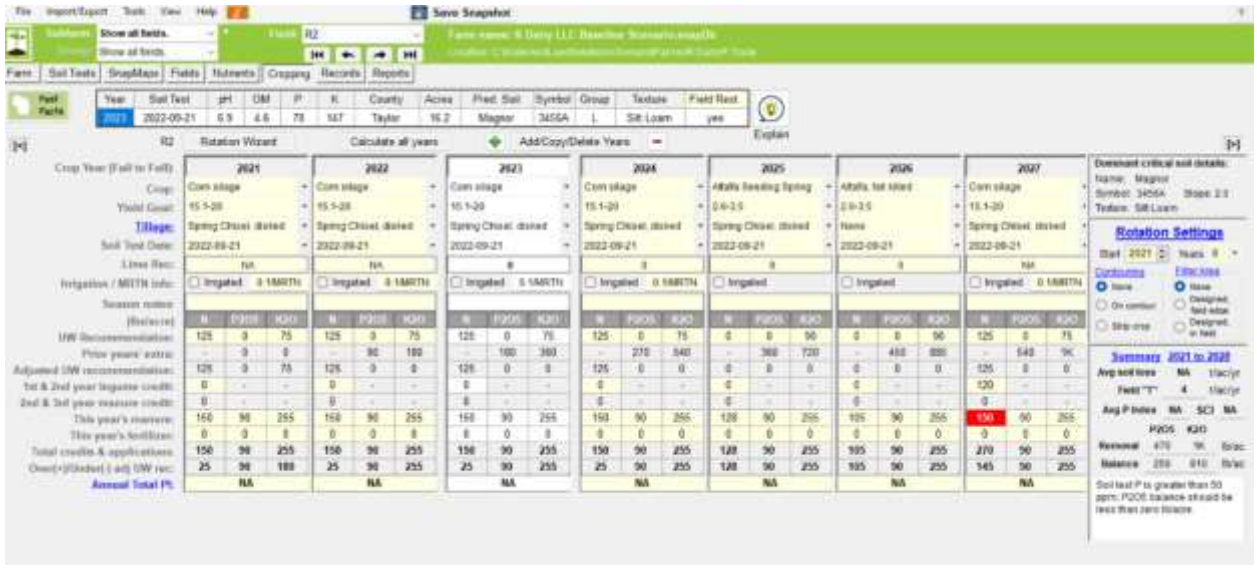
6. Landowner may harvest and remove the forage for agricultural production utilizing prescribed grazing and/or mechanical harvesting methods.

7. If at any time during agreement period, soil disturbance or erosion occurs on property, landowner shall repair and revegetate immediately. WI WQT Clearinghouse shall be notified of the need for any such disturbance.

8. Avoid crossing and/or travelling on the conservation easement with heavy equipment during wet times of the year when fields may become rutted.

To: Andrew Craig and Chris Murphy. Here is the requested rotations for the three fields that had a dairy crop rotation added to them. In addition is an updated 590 checklist with the boxes all check. Paul Daigle





Wisconsin Department of Agriculture, Trade and Consumer Protection
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Use this form to check nutrient management (NM) plans for compliance with the WI NRCS 2015-590 Standard.

Nutrient Management Checklist

Wis. Stat. §92.05(3) (k), Wis. Admin. Code §ATCP50.04(3) and Ch. 51

COUNTY **Taylor**	DATE PLAN SUBMITTED **6/28/2023**	GROWING SEASON YEAR PLAN IS WRITTEN FOR **2024** (from harvest to harvest)	
TOWNSHIP: (T. N.) RANGE: (R. E., W).		CHECK ONE: Initial Plan or Updated Plan	
NAME OF FARM OPERATOR RECEIVING NM PLAN **Joe Tomandl III**	FARM NAME (OPTIONAL) **R Dairy LLC**		BUSINESS PHONE **715-748-9816**
STREET ADDRESS **2552 Willow Avenue**	CITY **Medford**	STATE **WI**	ZIP **54451**
REASON THE PLAN WAS DEVELOPED:		CROPLAND ACRES (OWNED & RENTED) **156**	
RENTED FARM(S) LANDOWNER NAME(S) AND ACREAGE: add sheet(s) if needed			
WAS THE PLAN WRITTEN IN SNAPPLUS? **YES**	If yes, which software version, if known? **20.4**		
CHECK PLANNER'S QUALIFICATION: (1. NAICC-CPCC, 2. ASA-CCA, 3. SSSA-Soil Scientist, 4. DATCP approved training course, 5. Other approved by DATCP)			
NAME OF QUALIFIED NUTRIENT MANAGEMENT PLANNER Paul Daigle			BUSINESS PHONE 715-573-1435
STREET ADDRESS 235678 Morgan Lane	CITY Wausau	STATE WI	ZIP 54403

Use header sections to add comments. Mark NA in the shaded sections if no manure is applied.

1. Does the plan include the following nutrient application requirements to protect surface and groundwater?

This section applies to fields and pastures. If no manure is applied, check NA for 1.c., 1.h., 1.i., 1.n., 1.o., 1.q., 1.s.	Yes	No	NA
a. Determine field nutrient levels from soil samples analyzed by a DATCP **certified laboratory**.	X		
b. For fields or pastures with mechanical nutrient applications, determine field nutrient levels from **soil samples** collected within the last **4 years** according to 590 Standard (590) and UWEX Pub. A2809, *Nutrient Application Guidelines for Field, Vegetable, and Fruit Crops in Wisconsin* (A2809) typically collecting **1 sample per 5 acres** of 10 cores. Soil tests are not required on **pastures** that do not receive mechanical applications of nutrients if either of the following applies: 1. The pasture average stocking rate is one animal unit per acre or less at all times during the grazing season. 2. The pasture is winter grazed or stocked at an average stocking rate of more than one animal unit per acre during the grazing season, and a nutrient management plan for the pasture complies with 590 using an assumed soil test phosphorus level of 150 PPM and organic matter content of 6%.	X		
c. For **livestock siting permit approval**, collect and analyze soil samples meeting the requirements above in 1. b., excluding pastures, within 12 months of approval and revise the nutrient management plan accordingly. Until then, either option below maybe used: 1. Assume soil test phosphorus levels are greater than 100 ppm soil test P, OR 2. Use preliminary estimates analyzed by a certified DATCP laboratory with soil samples representing > 5 ac/sample.			X
d. **Identify all fields'** name, boundary, acres, and location.	X		
e. Use the field's previous year's legume credit and/or applications, predominant soil series, and realistic yield goals to determine the crop's nutrient **application rates consistent with A2809 for ALL forms of N, P, and K.**		X	
f. Make no **winter applications of N and P** fertilizer, except on grass pastures and winter grains.	X		
g. Document method used to determine **application rates**. Nutrients shall not runoff during or immediately after application.	X		
h. Identify in the plan that **adequate acreage** is available for manure produced and/or applied.			
i. Apply a single phosphorus (P) assessment using either the **P Index** or **soil test P** management strategy to all fields within a tract when fields receive manure or organic by-products during the crop rotation.	X		
j. Use **complete crop rotations** and the field's **critical soil** series to determine that sheet and rill erosion estimates will not exceed **tolerable soil loss** (T) rates on fields that receive nutrients.	X		
k. Use contours; reduce tillage; adjust the crop rotation; or implement other practices to **prevent ephemeral erosion**; and maintain perennial vegetative cover to **prevent reoccurring gullies** in areas of concentrated flow. Grass is all Sod			X
l. Make no nutrient applications within 8' of **irrigation** wells or where **vegetation is not removed**.			X
m. Make no nutrient applications within **50' of all direct conduits to groundwater**, unless directly deposited by gleaning/pasturing animals or applied as starter fertilizer to corn.			X

	Yes	No	NA
n. Make no **untreated manure applications** to areas within 1000' of a **community potable water well** or within 100' of a **non-community potable water well** (ex. church, school, restaurant) unless manure is treated to substantially eliminate pathogens.			X
o. Make no manure applications to areas **locally delineated** by the Land Conservation Committee or in a conservation plan as areas contributing runoff to direct conduits to groundwater unless manure is substantially buried within 24 hours of application.			X
p. Make no applications of **late summer or fall commercial N fertilizer** to the following areas UNLESS needed for establishment of fall seeded crops OR to meet A2809 with a blended commercial fertilizer. Commercial fertilizer N applications shall not exceed 36 lbs. N/acre on: • Sites vulnerable to N leaching **PRW Soils** (P=high permeability, R= bedrock < 20 inches, or W= wet < 12 inches to apparent water table); • Soils with depths of 5 feet or less to bedrock; • Area within 1,000 feet of a community potable water well. On **P soils, when commercial N is applied** for full season crops in **spring and summer**, follow A2809 and apply one of the following: 1. A split or delayed N application to apply a majority of crop N requirement after crop establishment. 2. Use a nitrification inhibitor with ammonium forms of N. 3. Use slow and controlled release fertilizers for a majority of the crop N requirement applied near the time of planting.	X		
q. Limit manure applications in late summer or fall using the lesser of A2809 or the following 590 rates on **PRW Soils.** Use ≤ 120 lbs. available N/acre on: **P and R soils** on *all crops, except annual crops*. Additionally, manure with ≤ 4% dry matter (DM) wait until after soil temp. < 50°F or Oct. 1, and use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combo. W soils** on *all crops*. Additionally, manure with ≤ 4% DM on *all crops* use at least one of the following: **1.** Use a nitrification inhibitor; **2.** Apply on an established cover crop, an overwintering annual, or perennial crop; **3.** Establish a cover crop within 14 days of application; **4.** Surface apply & don't incorporate for at least 3 days; **5.** Wait until after soil temp. < 50°F or Oct. 1. Use ≤ 90 lbs. available N/acre on: **P and R soils** on *annual crops* wait until after soil temp. < 50°F or Oct. 1. Additionally, manure with ≤ 4% DM use either a nitrification inhibitor OR surface apply and do not incorporate for at least 3 days. **W soils or combination W soils** receiving manure with ≤ 4% DM on *all crops*.	X		
r. Use at least one of the following practices on **non-frozen soils for all nutrient applications** within **Surface Water Quality Management Area (SWQMA)** = 1000' of lakes/ponds or 300' of rivers: **1.** Maintain > 30% cover after nutrient application; **2.** Effective incorporation within 72 hours of application; **3.** Establish crops prior to, at, or promptly following application; **4.** Install/maintain vegetative buffers or filter strips; **5.** Have at least 3 consecutive years no-till for applications to fields with < 30% residue (silage) and apply nutrients within 7 days of planting.	X		
s. Limit mechanical applications to **12,000 gals/acre of unincorporated liquid manure or organic by-products with 11% or less dry matter where subsurface drainage is present** OR **within SWQMA.** Wait a minimum of 7 days between sequential applications AND use one or more of the practice options on non-frozen soils listed in 1.r.1. through **1.r.5.**	X		

2. When frozen or snow-covered soils prevent effective incorporation, does the plan follow these requirements for winter applications of all mechanically applied manure or organic by-products? *This section doesn't apply to winter gleaning/pasturing meeting 590 N and P requirements.*

If no manure is applied, check NA for 2.a. through 2.g.	Yes	No	NA
a. Identify **manure quantities planned to be spread during the winter**, or the amount of manure generated in 14 days, whichever is greater. *For daily haul systems, assume 1/3 of the manure produced annually will need to be winter applied.*			X
b. Identify **manure storage capacity** for each type applied and stacking capacity for manure ≥ 16% DM if permanent storage does not exist.			X
c. Show on map and make no applications within the **SWQMA.**			X
d. Show on map and make no surface applications of liquid manure during **February and March** where **Silurian dolomite** is within 60 inches of the soils surface OR where **DNR Well Compensation** funds provided replacement water supplies for wells contaminated with livestock manure.			X
e. Show on map and make no applications of manure within **300 feet** of **direct conduits to groundwater.**			X
f. Do not exceed the P removal of the following growing season's crop when applying manure. Liquid manure applications are limited to **7,000 g/acre.** All winter manure applications are not to exceed **60 lbs. of P2O5/acre.**			X
g. Make no applications of manure to fields with **concentrated flow channels** unless using two of the following: **1.** Contour buffer strips or contour strip cropping; **2.** Leave all crop residue and no fall tillage; **3.** Apply manure in intermittent strips on no more than 50% of field; **4.** Apply manure on no more than 25% of the field waiting a minimum of 14 days between applications; **5.** Reduce manure app. rate to 3,500 gal. or 30 lbs. P2O5, whichever is less; **6.** No manure application within 200 feet of all concentrated flow channels; **7.** Fall tillage is on the contour and slopes are lower than 6%. Make no applications to **slopes greater than 6%** (soil map units with C, D, E, and F slopes) unless the plan documents that no other accessible fields are available for winter spreading AND two of the options 2.g.**1.** through 2.g.**5.** are used.			X

I certify that the plan represented by the answers on this checklist complies with Wisconsin's NRCS 2015-590 NM Standard or is otherwise noted.

Mark Daigle — 6-27-23

Qualified NM planner signature — NAICC-*Certified Professional Crop Consultant*, ASA-*Certified Crop Adviser*, or SSSA-*Soil Scientist* — Date

[signature] — 6-27-23

Qualified NM farmer-planner or Authorized farm operator signature receiving and understanding the plan — Date — Signature if reviewed for quality assurance — Date

Tomandl Fields - Interim and Long Term Credit Calcs using Rotational Average P loss and TMDL Credit Threshold

Wisconsin River TMDL Subbasin 104
TMDL % Reduction: 63%
Rounded TP Credit Threshold from WI River TMDL - 1.0 lb/ac/yr

Baseline - Rotational Average Pollutant Load

Field	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Basline Rotational Average (lb/ac/yr)
R1	9	59	75	76	77	78	79	79	80	81	81	8.5
R11	56	479	481	486	490	495	499	503	508	379	216	8.1
R12	30	317	248	239	239	241	243	245	247	243	330	8.6
R13	7	51	51	52	51	70	72	57	55	55	56	8.1
R2	16	146	147	107	68	119	151	154	156	157	158	8.5
R3	7	15	15	15	15	15	15	15	15	12	11	2.0
R4	16	48	48	48	48	49	49	49	50	50	50	3.1
		1115	1065	1023	988	1067	1108	1102	1111	977	902	

Future - Rotational Average Pollutant Load

Field	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Future Rotational Average (lb/ac/yr)
R1	9	17	10	9	8	8	8	8	8	8	8	1.0
R11	56	55	37	39	37	36	35	35	35	35	36	0.7
R12	30	37	26	27	25	25	24	24	24	24	25	0.9
R13	7	8	6	6	6	6	6	6	6	6	6	0.9
R2	16	24	17	16	15	15	15	15	15	15	15	1.0
R3	7	3	4	5	5	5	5	5	6	6	6	0.7
R4	16	12	14	17	17	18	18	18	18	18	19	1.1
		156	114	119	113	113	111	111	112	112	115	

Field	Acres	Baseline (lb/ac/yr)	Future (lb/ac/yr)*	Reduction (lb/ac/yr)	Interim Credits (lb/ac/yr)*	Total Interim Credits (lb/yr)	Long Term Credits (lb/ac/yr)*	Total Long Term Credits (lb/yr)
R1	9	8.5	1.0	7.5	7.5	67.5	0	0
R11	56	8.1	0.7	7.4	6.9	386.4	0.3	16.8
R12	30	8.6	0.9	7.8	7.7	231	0.1	3
R13	7	8.1	0.9	7.3	7.2	50.4	0.1	0.7
R2	16	8.5	1.0	7.5	7.5	120	0	0
R3	7	2.0	0.7	1.3	1	7	0.3	2.1
R4	16	3.1	1.1	2.0	2	32	0	0
						894.3		22.6
						745.3		**18.8**

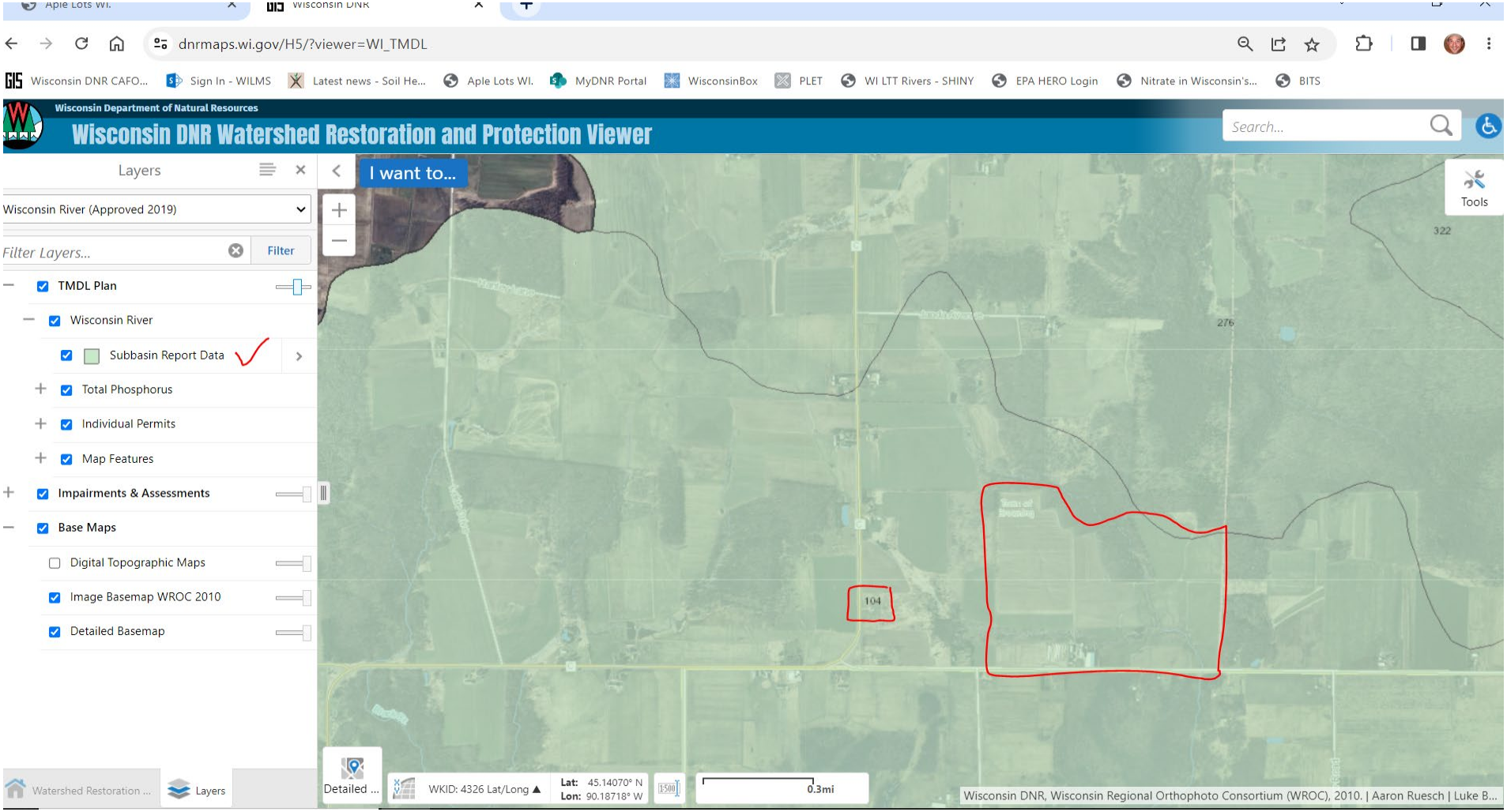
* Rounded TP Credit Threshold from WI River TMDL = 1.0 lb/ac/yr

1.2 : 1 Uncertainty Factor Applied

NOTE: Still need to apply Delivery Factor - depending on credit buyer location

= meets TMDL credit threshold

= Per page 25 of DNR Guidance, this field qualifies for interim credits, despite not meeting TMDL credit threshold


Aple Lots WI.
Wisconsin DNR
dnrmaps.wi.gov/H5/?viewer=WI_TMDL
Wisconsin DNR CAFO...
Sign In - WILMS
Latest news - Soil He...
Aple Lots WI.
MyDNR Portal
WisconsinBox
PLET
WI LTT Rivers - SHINY
EPA HERO Login
Nitrate in Wisconsin's...
BITS
Wisconsin Department of Natural Resources
Wisconsin DNR Watershed Restoration and Protection Viewer
Search...
Layers
I want to...
Tools
Wisconsin River (Approved 2019)
Filter Layers...
Filter
TMDL Plan
Wisconsin River
Subbasin Report Data
Total Phosphorus
Individual Permits
Map Features
Impairments & Assessments
Base Maps
Digital Topographic Maps
Image Basemap WROC 2010
Detailed Basemap
322
276
104
Watershed Restoration ...
Layers
Detailed ...
WKID: 4326 Lat/Long
Lat: 45.14070° N
Lon: 90.18718° W
0.3mi
Wisconsin DNR, Wisconsin Regional Orthophoto Consortium (WROC), 2010. | Aaron Ruesch | Luke B...

WI River TMDL TP Parameters and Rounded Credit Threshold					Interim Floor Calculations		Feasibility Analysis
TMDL Subbasin	Baseline TP loss lb/ac/yr	TMDL % Reduction	TP Credit Threshold lb/ac/yr	Rounded TP Credit Threshold lb/ac/yr	Conservation Scenario 1 lb/ac/yr	Interim Floor lb/ac/yr	Conservation Scenario 2 lb/ac/yr
98	2.40	84%	0.39	0.50	0.66	0.66	0.48
99	2.70	84%	0.45	0.50	0.76	0.76	0.55
100	2.00	84%	0.33	0.50	0.53	0.53	0.35
101	3.10	63%	1.12	1.50	0.74	NA	0.47
102	3.40	67%	1.10	1.50	0.83	NA	0.59
103	3.10	67%	1.00	1.00	0.80	NA	0.61
104	2.60	63%	0.95	1.00	0.71	NA	0.49
105	3.20	68%	1.03	1.00	0.81	NA	0.59
106	3.40	63%	1.24	1.50	0.82	NA	0.55
107	2.50	63%	0.91	1.00	0.71	NA	0.50

Baseline and Future PTP

P Trade Report				PTP									
Field Name	Soil Series	Soil Symbol	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
R1	MAGNOR	3456A	9	59	75	76	77	78	79	79	80	81	81
R11	FREEON	457B	56	479	481	486	490	495	499	503	508	379	216
R12	MAGNOR	3456A	30	317	248	239	239	241	243	245	247	243	330
R13	MAGNOR	3456A	7	51	51	52	51	70	72	57	55	55	56
R2	MAGNOR	3456A	16	146	147	107	68	119	151	154	156	157	158
R3	CAPITOLA	923A	7	15	15	15	15	15	15	15	15	12	11
R4	CAPITOLA	923A	16	48	48	48	48	49	49	49	50	50	50
Total			**140**	**1,115**	**1,066**	**1,022**	**989**	**1,066**	**1,108**	**1,104**	**1,111**	**977**	**902**

P Trade Report				PTP									
Field Name	Soil Series	Soil Symbol	Acres	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
R1	MAGNOR	3456A	9	17	10	9	8	8	8	8	8	8	8
R11	FREEON	457B	56	55	37	39	37	36	35	35	35	35	36
R12	MAGNOR	3456A	30	37	26	27	25	25	24	24	24	24	25
R13	MAGNOR	3456A	7	8	6	6	6	6	6	6	6	6	6
R2	MAGNOR	3456A	16	24	17	16	15	15	15	15	15	15	15
R3	CAPITOLA	923A	7	3	4	5	5	5	5	5	6	6	6
R4	CAPITOLA	923A	16	12	14	17	17	18	18	18	18	18	19
Total			**140**	**155**	**115**	**119**	**114**	**112**	**111**	**111**	**111**	**112**	**113**

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
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8/4/2023

Wisconsin Clearinghouse
c/o: Chris Murphy, Nutrient Trading Manager
17921 Smith Road
Brodhead, WI 53520

Subject: Verification of Pollutant Reduction Credits
R Dairy LLC Credit Verification Package: CVP-2023-01

Dear Mr. Murphy:

The Department of Natural Resources (department) recently received a credit verification package (CVP) for proposed generation of phosphorus credits via the State's water quality trading clearinghouse. Initial information was received in May of 2023 and a final CVP was received on 7/27/2023. Information supporting credit amount calculations (Snap Plus model) was submitted on 8/4/2023. Based on the department's review, the final CVP (dated July 2023) is in general conformance with the DNR Water Quality Trading Guidance and Sections 16.9685 and 283.84 of the Wisconsin Statutes. The CVP proposes conversion of corn/alfalfa row crop agricultural fields to perennial grass with rotationally managed grazing. The timeline for practice installation, as set forth in the CVP, indicates practices will be installed by end of the 2023 calendar year.

Credits generated from approved practices result in available credit quantities shown in Table 1. These credits may be incorporated into WPDES permits, subject to the department's public notice and permit modification/reissuance procedures. An agreement must be established with a credit buyer pursuant to s. 283.84(1)(f), Wis Stats., and buyers must be located in the applicable hydrologic area, as defined at s. 283.84(1m)(e)2., Wis. Stats. Credit sales must observe any applicable downstream or delivery factors. Pollutant credits may be used to demonstrate compliance with phosphorus water quality-based effluent limits, subject to a maximum interim credit duration of 10 years.

Table 1: Total Phosphorus Credits Available per CVP-2023-01

Year	Available Credits (lbs/yr) – Interim	Available Credits (lbs/yr) – Long Term	Available Credits (lbs/yr) – Total
2024	745.3	18.8	764.1
2025	745.3	18.8	764.1
2026	745.3	18.8	764.1
2027	745.3	18.8	764.1
2028	745.3	18.8	764.1
2029	745.3	18.8	764.1
2030	745.3	18.8	764.1
2031	745.3	18.8	764.1
2032	745.3	18.8	764.1

2033	745.3	18.8	764.1
2034[i]	0	18.8	18.8

[i] *interim credits no longer valid after 12/31/2033*

The department conditionally verifies pollutant credits for a duration of ten years, provided operation & maintenance, inspection reporting, and NRCS technical standard protocols are adhered to. This verification is not to be construed as an approval for any activities requiring a permit under chs. 30 or 31, Wis. Stats. or other permits/approvals required at the county or municipal level. The department has assigned the CVP a tracking number of CVP-2023-01 and it will be referenced as such in the WPDES permits of credit users. The CVP will be included as part of the public notice package when a credit buyer's permit is reissued to incorporate credits. The WPDES permit will include a requirement for an annual trading inspection report, requirements to implement the CVP as approved, and effluent monitoring for total phosphorus to demonstrate credit use and computed compliance.

If you have any questions or comments, please contact me at (608) 400 - 5596 or by email at matthew.claucherty@wisconsin.gov.

Sincerely,

Matt Claucherty
Phosphorus Implementation Coordinator
Wisconsin Department of Natural Resources

e-CC:

Joseph Tomandl III, R Dairy LLC
Paul Daigle, Water and Land Solutions, LLC
Erin Delawalla, RES
Andrew Craig, DNR
Kevin Kirsch, DNR