Permit Fact Sheet

General Information

Permit Number	WI-0062758-04-1
Permittee Name and Address	Thistle Dairy LLC 3006 Lone Elm Rd, Van Dyne, WI 54979
Permitted Facility Name and Address	Thistle Dairy LLC 3006 Lone Elm Road Van Dyne
Permit Term	March 01, 2025 to September 30, 2027
Discharge Location	3006 Lone Elm Road, Van Dyne, WI in the SE ¼ of Section 35, T17N, R16E
Receiving Water	3006 Lone Elm Road, Van Dyne, WI in the SE ¼ of Section 35, T17N, R16E to the Upper Fox River Watershed, and groundwaters of the state
Discharge Type	Existing

Animal Units					
	Current AU		**Proposed AU** **(Note: If all zeroes, expansions are not expected during permit term)**		
Animal Type	**Mixed**	**Individual**	**Mixed**	**Individual**	**Date of Proposed Expansion**
Dairy Calves (under 400 lbs.)	48	0	0	0	
Milking and Dry Cows	3892	3975	0	0	
Total	3940	3975	0	0	

Facility Description

Brief Facility Description: Thistle Dairy LLC is an existing Concentrated Animal Feeding Operation (CAFO). Thistle Dairy LLC is owned and operated by James Thompson. It currently has 4,715 animal units and based on current herd size Thistle Dairy has approximately 335 days of liquid manure storage. Thistle Dairy generates 37,993,066 gallons of liquid manure and process wastewater and 5,934 tons of solid manure annually. Thistle Dairy LLC has a total of 5,103 acres available for land application of manure and process wastewater. Of this acreage, 736 acres are owned, and 4,367 acres are rented.

Substantial Compliance Determination

Enforcement During Current Permit Term: Thistle Dairy was issued one (1) notice of noncompliance (2023) “in accordance with s. NR 243.15, the permittee shall submit plans and specifications for proposed new or upgraded reviewable facilities or systems to the Department for approval prior to construction.”

Compliance determination made by Makayla Jacobs, Agricultural Runoff Specialist on 4/9/2025.

Sample Point Designation For Animal Waste		
Sample Point Number	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**	
001	Sample point 001 is for liquid manure and process wastewater land applied from waste storage facility 1 (WSF 1). WSF 1 is an earthen lined storage located to the north of the existing free stall barns. The facility has a capacity of 3.3 million gallons and was constructed in 1994, modifications for the addition of armoring was completed in 2017. This storage accepts manure and process wastewater from the parlor and adjacent free stall barns and acts as the first cell in a two celled system.	
002	Sample point 002 is for liquid manure and process wastewater land applied from waste storage facility 2 (WSF 2). WSF 2 is an earthen lined storage located to the north of WSF 1. The facility has a capacity of 15.8 million gallons and was constructed in 2011. This storage accepts manure and process wastewater from WSF 1 and acts as the second cell in a two celled system.	
003	Sample point 003 is for solid manure sources that are directly land applied and not stored in a waste storage facility. Representative samples shall be taken for each manure source type. This includes solid manure sources such as bedpack, calf hutch manure, maternity pen bedpack, heifer bedpack, steer manure, etc.	
004	Sample point 004 is for visual monitoring and inspection of the calf hutch area and associated runoff control system. Proper operation and maintenance is required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to monitoring program.	
005	Sample point 005 is for visual monitoring and inspection of the feed storage area and associated runoff control system. Proper operation and maintenance is required to ensure discharges meet permit requirements. Weekly inspections are required and shall be recorded according to monitoring program.	
006	Sample point 006 is for liquid manure and process wastewater land applied from waste storage facility 3 (WSF 3). WSF 3 is an earthen lined storage located to the north of the feed storage area. The facility has a capacity of 4.7 million gallons and was constructed in 1994, modifications for the addition of armoring was completed in 2016. This storage accepts manure and process wastewater from the feed storage area and calf hutch area.	
007	Sample point 007 is for solid manure land applied from approved headland stacking sites. Stacks are defined as part of the production area and therefore subject to the production area discharge limitations section of this permit. Weekly visual monitoring and quarterly inspections while stacks are present are required and shall be recorded according to monitoring program.	
008	Sample point 008 is for and manure solids removed from the bottom of all liquid waste storage facilities. This includes manure-laden sand solids, manure fiber solids, etc. Representative samples shall be taken from each waste storage facility.	
009	Sample point 009 is for visual monitoring and inspection of all production site storm water conveyance systems. This includes roof gutter and downspout structures, drainage tile systems, grassed waterways and other diversion systems that transport uncontaminated storm water. Proper operation and maintenance is required to keep uncontaminated runoff diverted away from manure and process wastewater handling systems. Weekly inspections are required and shall be recorded according to the monitoring program.	
010	Sample point 010 is for liquid manure and process wastewater land applied from waste storage facility 4 (WSF 4). WSF 4 is an earthen lines storage located west of WSF 3. The facility has a capacity of 11	

Sample Point Designation For Animal Waste		
Sample Point Number	**Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)**	
	million gallons and was constructed in 2024. This storage accepts manure and process wastewater transfers from the other waste storage facilities as needed. An engineering evaluation for this WSF is required see permit schedule for details.	
011	Sample point 011 addresses all digested liquids located within the 2 proposed digester cells. Manure is pumped from an existing manure processing building to the digesters and then returned to the manure processing buildings (for solids removal) after the digestion is completed. Liquids will then be transferred to onsite waste storage facilities for long term storage. Sampling from within the digester cell(s) for nutrient content is only required if the liquids are to be manually pumped from the cell(s) and directly land applied.	

1 Livestock Operations - Proposed Operation and Management

Production Area Discharge Limitations

Beginning on the effective date of the permit, the permittee may not discharge pollutants from the operation's production area (e.g., manure storage areas, outdoor animal lots, composting and leachate containment systems, milking center wastewater treatment/containment systems, raw material storage areas) to navigable waters, except in the event a 25-year, 24-hour rainfall event (or greater) causes the discharge from a structure which is properly designed and maintained to contain a 25-year, 24-hour rainfall event for this location as determined under s. NR 243.04. If an allowable discharge occurs from the production area, state water quality standards may not be exceeded.

Runoff Control

The permit requires control of contaminated runoff from all elements of the production area to prevent a discharge of pollutants to navigable waters in accordance with the Production Area Discharge Limitations and to comply with surface water quality standards and groundwater standards. Beginning on the effective date of this permit, (if needed) interim measures shall be implemented to prevent discharges of pollutants to navigable waters. In addition, permanent runoff control system(s) shall be designed, operated and maintained in accordance with the requirements found in USDA Natural Resources Conservation Service standards and ch. NR 243, Wis. Adm. Code. If any upgrading or modifications to runoff controls are necessary, formal engineering plans and specifications must submitted to the Department for approval.

Manure and Process Wastewater Storage

The permit requires the operation to have adequate storage for manure and process wastewater and that storage or containment facilities are designed, operated and maintained to prevent overflows and discharges to waters of the state. In order to prevent overflows, the permittee must maintain levels of materials in liquid storage or containment facilities at or below certain levels including a one foot margin of safety that can never be exceeded. If any upgrading or modifications to the storage facilities are necessary, formal engineering plans and specifications must submitted to the Department for approval.

The permittee currently has approximately 309 months of storage for liquid manure. The permittee must maintain 180 days of storage, unless temporary reductions in required storage are approved by the Department.

Solid Manure Stacking

The operation has proposed to stack solid manure. All stacking of solid manure shall be done in accordance ch. NR 243, Wis. Adm. Code, which includes restrictions from NRCS Standard 313. Stacking of manure is considered to be part of the production area and is subject to the Production Area Discharge Limitations.

Ancillary Service and Storage Areas

The permittee shall take preventative maintenance actions and conduct visual inspections to minimize pollutant discharges from areas of the operation that are not part of the production area or land application areas. These areas are called ancillary service and storage areas and include access roads, shipping and receiving areas, maintenance areas, refuse piles and CAFO outdoor vegetated areas.

Nutrient Management

With 3940, it is estimated that approximately 26,322,888 of manure and process wastewater will be produced per year. The permittee owns *approximately* 654 acres of cropland and rents about 4,436. Given the rotation commonly used by the permittee, 4,972 acres are available (or open) to receive manure and process wastewater on an annual basis. The permit requires all landspreading of manure and process wastewater be completed in accordance with an approved nutrient management plan. The permit will require sampling and analysis of manure and process wastewater that will be landspread. Landspreading rates must be adjusted based on sample analysis. The permit requires the permittee to maintain a daily log that documents landspreading activities. The permit also requires the submittal of an annual report that summarizes all landspreading activities. Plans must be updated annually to reflect cropping plans and other operational changes. Among the requirements, the plans must include detailed landspreading information including field by field nutrient budgets.

The permittee is required to implement a number or practices to address potential water quality impacts associated with the land application of manure and process wastewater. Among the permit conditions are restrictions on manure ponding, restrictions on runoff of manure and process wastewater from cropped fields, and setbacks from wells and direct conduits to groundwater (e.g., sinkholes, fractured bedrock at the surface). In addition, the permittee must implement a phosphorus based nutrient management plan that addresses phosphorus delivery to surface waters by basing manure and process wastewater applications on soil test phosphorus levels or the Wisconsin Phosphorus index. Additional phosphorus application restrictions apply to fields that are high in soil test phosphorus (>100 ppm).

The permitee must also implement conservation practices when applying manure near navigable waters and their conduits, referred to as the Surface Water Quality Management Area (SWQMA). These practices include a 100-foot setback from navigable waters and their conduits, a 35-foot vegetated buffer adjacent to the navigable water or conduit, or a practice that provides equivalent pollutant reductions equivalent to or better than the 100-foot setback.

In addition, the permittee must comply with restrictions on land application of manure and process wastewater on frozen or snow-covered ground. Included in these restrictions is a prohibition on surface applications of solid manure ($\geq$12% solids) on frozen or snow-covered ground during February and March.

Monitoring and Sampling Requirements

The permittee must submit a monitoring and inspection program that outlines how the permittee will conduct self-inspections to determine compliance with permit conditions. These self-inspections include visual inspections of water lines, diversion devices, storage and containment structures and other parts of the production area. The permit requires periodic inspections and calibrations of landspreading equipment. The permittee must take corrective actions to problems identified inspections or otherwise notify the Department. Samples of manure, process wastewater and soils receiving land applied materials from the operation must also be collected and analyzed.

Sampling Points

The permit identifies the different sources of land applied materials (e.g., manure storage facilities, milking centers, egg-washing facilities) as "Sampling Points." For these Sampling Points, the permittee is required to sample and analyze the different sources for nutrients and other parameters which serve as the basis for determining rates of application for these materials. Other areas are also identified as Sampling Points as a means of identifying them as areas requiring action by the permittee, such as an upgrade or evaluation of a certain system or structure (e.g., runoff control systems), even though sampling is not actually required.

1.1 Sample Point Number: 001- WSF 1 - South; 002- WSF 2 - North; 006- WSF 3; 010- WSF 4, and 011- Anerobic Digester

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total		lb/1000gal	2/Month	Grab	
Nitrogen, Available		lb/1000gal	2/Month	Calculated	
Phosphorus, Total		lb/1000gal	2/Month	Grab	
Phosphorus, Available		lb/1000gal	2/Month	Calculated	
Solids, Total		Percent	2/Month	Grab	

1.1.1 Changes from Previous Permit

Sample point language was updated to more accurately describe existing facilities.

1.1.2 Explanation of Operation and Management Requirements

Liquid manure & process wastewater must be properly stored, and land applied according to the permit and nutrient management plan.

1.2 Sample Point Number: 003- Misc Solid Manure; 007- Stacked Solids; 008- Settled Solid Manure

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Nitrogen, Total		lbs/ton	Quarterly	Grab	
Nitrogen, Available		lbs/ton	Quarterly	Calculated	
Phosphorus, Total		lbs/ton	Quarterly	Grab	
Phosphorus, Available		lbs/ton	Quarterly	Calculated	
Solids, Total		Percent	Quarterly	Grab	

1.2.1 Changes from Previous Permit

Sample point language was updated to more accurately describe existing facilities.

1.2.2 Explanation of Operation and Management Requirements

Liquid manure & process wastewater must be properly stored, and land applied according to the permit and nutrient management plan.

1.3 Sample Point Number: 004- Calf Hutch Area; 005- Feed Storage Runoff Controls, and 009- Storm Water Controls

1.3.1 Changes from Previous Permit

Sample point language was updated to more accurately describe existing facilities.

1.3.2 Explanation of Operation and Management Requirements

Liquid manure & process wastewater must be properly stored, and land applied according to the permit and nutrient management plan.

2 Schedules

2.1 Emergency Response Plan

Required Action	Due Date
Develop Emergency Response Plan: Develop a written Emergency Response Plan within 30 days of permit coverage, available to the Department upon request.	10/30/2022

2.2 Monitoring & Inspection Program

Use of the department's monitoring and inspection program template is encouraged, but optional.

Required Action	Due Date
Proposed Monitoring and Inspection Program: Consistent with the Monitoring and Sampling Requirements subsection, the permittee shall submit a proposed monitoring and inspection program within 90 days of the effective date of this permit.	12/30/2022

2.3 Annual Reports

Submit Annual Reports by January 31st of each year in accordance with the Annual Reports subsection in Standard Requirements.

Required Action	Due Date
Submit Annual Report #1: To include monitoring and inspection results from the previous 12 months,	01/31/2023

consistent with the requirements of department form 3400-025E.	
Submit Annual Report #2: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2024
Submit Annual Report #3: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2025
Submit Annual Report #4: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2026
Submit Annual Report #5: To include monitoring and inspection results from the previous 12 months, consistent with the requirements of department form 3400-025E.	01/31/2027
Ongoing Annual Reports: Continue to submit Annual Reports until permit reissuance has been completed.	

2.4 Nutrient Management Plan

Submit annual nutrient management plan (NMP) updates by March 31 of each year. Note, in addition to annual NMP updates, submit NMP amendments and substantial revisions to the department for written approval prior to implementation of any changes to the NMP.

Required Action	Due Date
Management Plan Submittal: Submit any necessary updates to the Nutrient Management Plan to meet the conditions outlined in this permit (see conditions in the Livestock Operational and Sampling Requirements section).	
Management Plan Annual Update #1: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department for 3400-025D.	03/31/2023
Management Plan Annual Update #2: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department for 3400-025D.	03/31/2024
Management Plan Annual Update #3: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department for 3400-025D.	03/31/2025
Management Plan Annual Update #4: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department for 3400-025D.	03/31/2026
Management Plan Annual Update #5: To include actual cropping, tillage, and nutrient application data from the previous calendar or crop year, consistent with the requirements of department for 3400-025D.	03/31/2027
Ongoing Management Plan Annual Updates: Continue to submit Annual Updates to the Nutrient Management Plan until permit reissuance has been completed.	

2.5 Submit Permit Reissuance Application

Required Action	Due Date
Reissuance Application: Submit a complete permit reissuance application 180 days prior to permit expiration.	04/01/2027

2.6 Manure Storage Facility - Engineering Evaluation

Applicable to sample point 011 (WSF4)

Required Action	Due Date
Retain Expert: Retain a qualified expert to complete an engineering evaluation for WSF 4 manure storage facility and report the name of the expert to the Department.	08/01/2025
Written Report: Submit a written report evaluating the existing manure storage facility's ability to meet the conditions in the Production Area Discharge Limitations and Manure and Process Wastewater Storage subsections and s. NR 243.15, Wis. Adm. Code. (See Standard Requirements for report details.)	12/31/2025
Plans and Specifications: Submit plans and specifications for Department review and approval in accordance with Chapter 281.41, Wis. Stats., and Chapter NR 243, Wis. Adm. Code, to permanently correct any adverse manure storage conditions.	12/31/2026
Corrections and Post Construction Documentation: Complete construction on the manure storage facility that permanently corrects any adverse conditions in concurrence with and approval by the Department, by the specified Date Due. Submit post construction documentation within 60 days of completion of the project.	09/30/2027

2.7 Explanation of Schedules

Emergency Response Plan, Monitoring and Inspection Program – Schedules consistent with permit requirements.

Annual Reports, Nutrient Management Plan, Submit Permit Reissuance Application - Schedules consistent with permit requirements.

Sample point 010 (WSF 4) was added to the permit to account for the liquid manure to be stored and land applied from the proposed waste storage facility.

Sample point 011 (Digester) was added to the permit to account for the liquid manure contained in the proposed anaerobic digester. While unlikely to occur, this manure could be removed and directly land applied and therefore would need to available as a sample point.

Schedule 2.6 was included to ensure that WSF 4 described in sample point 010 meets permit discharge limitations. An evaluation is required per 243.16 (2).

Attachments

Map(s)

Plan Approval Letter(s)

- 3/21/2025 - Days of Storage Review
- 10/22/2024 - 2nd year Inspection Report

Public Notice

Justification Of Any Waivers From Permit Application Requirements

No waivers requested or granted as part of this permit reissuance

Prepared By: Makayla Jacobs **Agricultural Runoff Management Specialist** **Date: 4/22/2025**

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Tony Evers, Governor
Karen Hyun, Ph.D., Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
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March 21, 2025

FILE REF: R-2025-0051
WPDES Permit #: WI-0062758

James Thompson
Thistle Dairy LLC
3006 Lone Elm Road
Van Dyne, WI 54979

Subject: Days of Storage Review for Thistle Dairy LLCSE¼ of T17N, R16E, Section 35 in Nekimi Township, Winnebago County – NO ADDITIONAL ACTION REQUIRED

Dear James Thompson:

This letter is to inform you that the Wisconsin Department of Natural Resources (Department) has completed its review of the calculation of days of storage submitted under certification by Brandon Robaidek, Robert E. Lee & Associates, Inc on February 11, 2025 on behalf of Thistle Dairy LLC.

The Department reviewed the submitted calculations in accordance with ss. NR 243.14(9) and NR 243.15(3)(i) to (k), Wis. Adm. Code. Under s. NR 243.17(3)(c), Wis. Adm. Code, the permittee shall demonstrate compliance with the 180-day design storage capacity requirement at specified times. For the following liquid manure storage calculations, the Department has determined **no additional actions** on your part are required.

Days of Available Liquid Waste Storage: The submitted information states that Thistle Dairy LLC has 309 days of liquid waste storage based on the volumes listed in the table below with respect to s. NR 243.15(3)(i) to (k), Wis. Adm. Code. The current number of animal units provided for the calculation is 4,715. The liquid waste volumes are based on the NRCS spreadsheet and other estimated or calculated values for a collection period of 365 days. All feed storage area runoff, up to the 25-year, 24- hour storm is collected in permanent waste storages.

Total Liquid Waste Storage Capacity (gallons)						
Waste Storage	Total Vol. from Settled Top to Bottom	-Solids Storage	-25-yr, 24-hr Precip. on Storage	25-yr, 24-hr Collected Runoff	Freeboard Vol.	Max. Operating Level (MOL) Vol.
#1	3,893,054		123,612	97,321	335,598	3,336,523
#2	17,531,072		451,657	61,229	1,226,219	15,791,967
#3	6,583,251		197,984	795,199	806,269	4,783,799
#4	12,059,696		296,097		803,883	10,959,716
					Total MOL Vol:	34,872,005
					Days of Storage:	**309**

Total Annual Liquid Waste Volume (NRCS Table Values)	
Liquids Collected/Stored	Annual Gallons
Manure and Bedding	30,531,328
Feed Storage Leachate	112,200
Feed Storage Runoff Collected	4,607,358
Net Precipitation on Storage Surface(s)	4,911,268
Calf Housing Runoff Collected	1,047,127
TOTAL:	**41,209,281**

Should you have any questions, please contact Tabby Davis, DNR Madison office or your regional CAFO Specialist.

NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that the Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to WIS. STAT. §§ 227.52 and 227.53, you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review must name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to WIS. STAT. § 227.42, you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. All requests for contested case hearings must be made in accordance with WIS. ADMIN. CODE § NR 2.05(5), and served on the Secretary in accordance with WIS. ADMIN. CODE § NR 2.03. The filing of a request for a contested case hearing does not extend the 30-day period for filing a petition for judicial review.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES

Bernie Michaud, P.E.
CAFO Engineer Supervisor
Watershed Management Program

Tabby Davis
CAFO Review Engineer
Watershed Management Program

Email: Jim Thompson; Thistle Dairy
(920) 376-0746; altmorejim@aol.com

Brandon Robaidek; Robert E. Lee & Associates, Inc
(920) 662-9641; brobaidek@releeinc.com

Aaron O'Rourke; DNR, Eau Claire
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Matt Woodrow; DATCP
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Chad Casper; Winnebago County LCD
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Joe B Baeten; DNR-Northeast Region
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Ashley Scheel; DNR, Central Office
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October 29, 2024

James Thompson
Thistle Dairy
3006 Lone Elm Rd
Van Dyne, WI 54979

WPDES Permit No. 0062758-04-0
Winnebago County

Subject: Mid permit Inspection Report 10/22/2024

Dear Mr. James Thompson:

On October 22, 2024, the Department of Natural Resources (department) conducted a mid-permit walkover inspection of Thistle Dairy. Results and photos are included in the enclosed report. The department has noted follow up action items on page 3 in the enclosed report.

If you have any questions regarding this letter or your WPDES permit requirements, please contact me at (920) 573-8033 or at Makayla.Jacobs@wisconsin.gov.

Sincerely,

Makayla Jacobs
Agricultural Runoff Management Specialist

Electronic CC:
Chris Casper - Winnebago County LWCD
Todd Schaumberg - Tilth Agronomy
Joe Baeten, Holly Stegemann - DNR

CAFO Compliance Inspection Report

Inspection Date: 10/22/2024

Report Final Date: 10/29/2024

Operation Name: Thistle Dairy

WPDES Permit #: 0062758-04-0

Farm Address: 3006 Lone Elm Rd, Van Dyne, WI 54979

On-Site Representative(s): James Thompson, Owner/Operator

Report Author: Makayla Jacobs, Agricultural Runoff Management Specialist

Other Participating Agencies: Larry Paltzer, Agronomist

Introduction

On October 22, 2024 Makayla Jacobs and Holly Stegemann met with James Thompson and Larry Palzer (Palzer Agronomy) at Thistle Dairy to conduct a mid permit inspection. All facilities under Thistle Dairy's WPDES permit were inspected. No precipitation had fallen 24 hours prior to the inspection, conditions were warm and dry. Action item follow up is listed on page 3.

Site Overview Diagram (Main Dairy)

Site Overview Diagram (Main Dairy: orange lines =potential runoff flow patterns, blue lines = stormwater flow, pink lines = waste transfer system, yellow circles indicate water supply well locations)

SITE OBSERVATIONS :

Feedlot Runoff

Thistle Dairy does not utilize any outdoor lots.

Calf Hutch Areas

Thistle Dairy utilizes one permanent calf hutch area located south of the existing feed storage area. Calves are bedded with straw on a gravel base. Runoff from this area drains north towards the feed storage area and is collected via a designated collection inlet and transferred to the feed storage runoff controls. No indications of runoff leaving the intended flow paths were observed.

Thistle Dairy is also utilizing a gravel area to the west side of the feed pad for temporary calf hutches. The farm indicated that as feed is fed off the hutches will move onto the concrete pad.

Calf hutch areas appear managed to not have current or past indicators of discharges. Calf hutch runoff control systems appear well-maintained, in good repair and in compliance with permit requirements

Waste Storage Facilities

Manure and process wastewater are stored in three waste storage facilities (WSF) with an additional WSF under construction.

WSF 1 is an earthen lined storage facility constructed in 1994. Modifications for the installation of armoring as required by the permit were installed in 2017. WSF 1 is located north of the freestall barns and serves as the settling pit for a two-celled system. WSF 1 accepts manure and process wastewater from the adjacent animal barns and parlor. At the time of inspection, permanent markers were in place but safety fencing was taken down for removal of manure.

WSF 2 is an earthen lined storage facility constructed in 2011. WSF 2 accepts process wastewater and runoff from WSF 2, serving as the second cell of a two-celled system. At the time of inspection, required permanent were in place but the safetu fencing was taken down for removal of manure.

WSF 3, also called the leachate basin, is an earthen lined pit constructed in 2016 and serves as storage for the feed storage runoff collection
system, including runoff from the calf hutch area. At the time of inspection, required fencing and permanent markers were in place. Woody vegetation was observed growing on the top of the storage berm, Jacobs reminded Thompson that this vegetation would need to be removed to protect the integrity of the earthen liner.

WSF 4 is an earthen lined storage facility located directly west of the existing WSF 3 and is currently under construction (R-2023-0069).

Solid and liquid waste storage facilities appear managed to not have current or past indicators of discharges. Liquid waste storage facilities have required permanent markers installed.

Process Wastewater (other than feed storage area leachate/runoff)

Milking parlor wash water at the Main Dairy is collected and mixed with the manure from the dairy barns. Any liquid from this system is eventually stored in the WSF's.

Animal Mortality Disposal

Mortalities are picked up daily as needed by OJ Krull.

Feed Storage Area (FSA) Runoff

Thistle Dairy keeps all feed under plastic either on concrete or in concrete bunkers. The concrete is pitched to convey runoff towards a collection point and runoff channel that is then transferred to WSF 3. Outer perimeter tile lines have been installed to capture any additional runoff from the pad. The feed pad was expanded to the west in 2022. (R-2021-0233)

Feed storage areas and associated process wastewater (leachate, runoff) appear managed to not have current or past indicators of discharges. Feed storage areas and runoff control systems appear well-maintained, in good repair and in compliance with permit requirements.

Ancillary Service Areas

Several clean water manholes are located on the production site to divert clean water, including grassed water ways and driveway culverts. No indications of discharges were observed.

Summary

Permit Noncompliance: None

Area of Concern: WSF 3 has woody vegetation growth which could potentially compromise the earthen liner of the storage if action is not taken.

Action Items:

1- Woody Vegetation should be removed from the perimeter of the Leachate basin. Please submit photo documentation of woody vegetation removal by **December 31,2024**.

2– Safety fencing around WSF 1 & 2 should be replaced after hauling is completed.

Photo #:	1
Date/Time of Photo:	10/22/2024 1300
Photo By:	Makayla Jacobs
Photo Location:	Temporary calf hutch area

Photo Description:

Standing at the North end looking South.

Photo #:	2
Date/Time of Photo:	10/22/2024 12:59
Photo By:	Makayla Jacobs
Photo Location:	Temporary calf hutch area

Photo Description:

Standing at the East side looking West.

Photo #:	3
Date/Time of Photo:	10/22/2024 13:21
Photo By:	Makayla Jacobs
Photo Location:	Calf Hutch Area

Photo Description:

Standing at the North side looking South.

Photo #:	4
Date/Time of Photo:	10/22/2024 13:21
Photo By:	Makayla Jacobs
Photo Location:	Calf Hutch Area

Photo Description:

Standing at the North side looking East. Circled in red is a collection inlet and the red arrow indicates the flow path from the calf hutch area.

Photo #:	5
Date/Time of Photo:	10/22/2024 13:16
Photo By:	Makayla Jacobs
Photo Location:	WSF 3

Photo Description:

Standing at the West side of WSF 3 looking East.

Photo #:	6
Date/Time of Photo:	10/22/2024 13:17
Photo By:	Makayla Jacobs
Photo Location:	WSF 3

Photo Description:

Standing at the Southwest side of WSF 3 looking Northeast. Circled in red is wooded vegetation.

Photo #:	7
Date/Time of Photo:	10/22/2024 13:19
Photo By:	Makayla Jacobs
Photo Location:	WSF 3

Photo Description:

Standing on the South side of WSF 3 looking northeast. Markers are metal stakes.

Photo #:	8
Date/Time of Photo:	10/22/2024 13:19
Photo By:	Makayla Jacobs
Photo Location:	WSF 3

Photo Description:

Standing on the South side looking North.

Photo #:	9
Date/Time of Photo:	10/22/2024
Photo By:	Makayla Jacobs
Photo Location:	WSF 1

Photo Description:

Standing on the Southwest side of WSF 1 looking North.

Photo #:	10
Date/Time of Photo:	10/22/2024
Photo By:	Makayla Jacobs
Photo Location:	WSF 1

Photo Description:

Standing on the South side of WSF 1 looking North.

Photo #:	11
Date/Time of Photo:	10/22/2024 13:26
Photo By:	Makayla Jacobs
Photo Location:	WSF 1

Photo Description:

Standing on the South side of WSF 1 looking Northeast.

Photo #:	12
Date/Time of Photo:	10/22/2024 13:27
Photo By:	Makayla Jacobs
Photo Location:	WSF 2

Photo Description:

Standing on the south side of WSF 2 looking Northeast. Circled in red are the markers.

Photo #:	13
Date/Time of Photo:	10/22/2024 13:27
Photo By:	Makayla Jacobs
Photo Location:	WSF 2

Photo Description:

Standing on the South side of WSF 2 looking Northwest.

Photo #:	14
Date/Time of Photo:	10/22/2024 13:27
Photo By:	Makayla Jacobs
Photo Location:	WSF 2

Photo Description:

Standing on the South side looking West.

Photo #:	15
Date/Time of Photo:	10/22/2024 13:20
Photo By:	Makayla Jacobs
Photo Location:	Leachate Collection Basin

Photo Description:

Standing on the West side of the leachate collection basin looking East. Farm was in the process of removing built up solids.

Photo #:	16
Date/Time of Photo:	10/22/2024 13:03
Photo By:	Makayla Jacobs
Photo Location:	New WSF 4

Photo Description:

Standing on the South side of the New WSF 4 looking North. Under construction.

Photo #:	17
Date/Time of Photo:	10/22/2024 12:58
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing at the Southwest side of the feed storage pad looking East.

Photo #:	18
Date/Time of Photo:	10/22/2024 12:58
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage Pad

Photo Description:

Standing on the Southwest side of the feed storage pad looking North.

Photo #:	19
Date/Time of Photo:	10/22/2024 13:17
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing on the North side of the feed storage pad looking West.

Photo #:	20
Date/Time of Photo:	10/22/2024 13:20
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing on the East side of the feed storage pad looking West. Red arrow indicates direction of runoff path.

Photo #:	21
Date/Time of Photo:	10/22/2024 13:20
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

View of the feed storage area runoff collection inlet.

Photo #:	22
Date/Time of Photo:	10/22/2024 13:21
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing on the West side of the Feed bunkers looking Southeast.

Photo #:	23
Date/Time of Photo:	10/22/2024
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing on the West side of the feed storage bunker looking Southeast.

Photo #:	24
Date/Time of Photo:	10/22/2024
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

Standing on the East side of the feed storage pad looking South.

Photo #:	25
Date/Time of Photo:	10/22/2024 13:23
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

View of intermittent stream running through production site.

Photo #:	26
Date/Time of Photo:	10/22/2024 13:23
Photo By:	Makayla Jacobs
Photo Location:	Feed Storage pad

Photo Description:

View of intermittent stream running through production site.