



March 17, 2021

St. Croix County
Approval

Todd Tuls
Emerald Sky Dairy LLC
2670 D Road
Rising City, NE 68658

SUBJECT: Conditional Approval of Emerald Sky Dairy LLC Nutrient Management Plan, WPDES Permit No. 0059315-04-1

Dear Mr. Tuls:

After completing a review of Emerald Sky Dairy LLC 2020-2024 Nutrient Management Plan (NMP) the Wisconsin Department of Natural Resources (Department) is providing conditional approval that it is consistent with Nutrient Management Requirements in s. NR 243, Wis. Adm. Code. This part of your WPDES permit application is now ready for the public notice and comment process as required by Ch. 283 Stats.

Before applying manure onto approved fields each season, the Department recommends Emerald Sky Dairy LLC review the NMP with those individuals involved with manure applications to ensure all remain familiar with the approved manure spreading protocol, spreading maps, field and map verification, record keeping requirements, and all the conditions of this approval. Specifically, some fields in Emerald Sky Dairy LLC may have:

- Soils that may have bedrock or groundwater within 24 inches of surface,
- Multiple setback areas due to streams, conduits to streams, grassed waterways, wetlands or wells, and
- Evidence of possible soil erosion/flow channels. Note: road ditches or other man made channels may be considered flow channels or conduits to navigable water and may be subject to a SWQMA and setback.

Reviewing the NMP and checking fields for these features and soil conditions prior to manure applications will help Emerald Sky Dairy LLC maintain compliance with their WPDES permit and Ch. NR 243 requirements.

FINDINGS OF FACT

The Department confirms that:

1. A current dairy herd size of 2,380 animal units (1,600 milking & dry cows). A planned herd size of 4,620 animal units (3,300 milking & dry cows) by 2021.
2. Manure generation and spreading records indicate your herd will annually generate approximately 17,382,103 gallons of manure and process wastewater and 5,861 tons of solid manure in the first year of the permit term. Once the full expansion is complete, your herd will annually generate approximately 41,358,839 gallons of manure and process wastewater and 11,378 tons of solid manure.
3. The use of application restriction options 1 and 5 within surface water quality management areas.
4. The use of phosphorus delivery method P Index.

5. That Emerald Sky Dairy LLC currently has 5,371 acres (0 owned and 5,371 controlled through contracts, rental agreements or leases, or under manure agreements) of which 5,305 are spreadable acres.
6. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to a 303(d) impaired water.
7. That no fields are directly adjacent to or have high potential to deliver nutrients and sediment to outstanding/exceptional waters.
8. That Emerald Sky Dairy LLC currently has at least 240 days of storage (after expansion) for liquid manure, process wastewater and rainfall and at least 59 days of storage for solid manure.

	<i>Total Volume</i>	<i>Maximum Operating Level (MOL) Volume</i>
WSF 1	3,086,882gal	2,274,612gal
WSF 2	29,553,636gal	25,423,765gal

9. That no fields are tiled
10. That all fields will be checked for the following features prior to/during manure or process wastewater applications: soil areas with possible shallow groundwater (i.e., within 24 inches of surface) at the time of manure application; required setbacks associated with wells, navigable waters, conduits to navigable waters, grassed waterways, wetlands, possible soil erosion/flow channels.
11. That surface applications of manure will not be completed when precipitation capable of producing runoff is forecasted within 24 hours of the time of planned application.

CONDITIONAL NUTRIENT MANAGEMENT PLAN APPROVAL

The Department hereby approves the 2020-2024 Emerald Sky Dairy LLC Nutrient Management Plan subject to the following conditions and the applicable requirements of Ch. NR 243, Wis. Adm. Code:

FIELD AND MANURE MANAGEMENT

1. Fields not included in the NMP and new fields shall not receive manure or process wastewater applications until they have been properly soil sampled, entered into Snap Plus, evaluated for their nutrient needs, and approved by the Department.
2. If existing fields yield a soil test results greater than 200 ppm P, those fields would be prohibited from receiving manure or process wastewater applications, unless you obtain Department approval in accordance with NR 243.14(5)(b)2., Wis. Adm. Code.
3. All liquid manure samples collected may be analyzed, at a minimum, for percent dry matter, total nitrogen, percent NH₄-N, percent NO₃-N, phosphorus, potassium, and sulfur.
4. If manure sample results have a dry matter (DM) content less than 2.0% and the percent ammonium (NH₄⁺) is greater than 75% of the total N, Emerald Sky Dairy LLC may use the following equation to adjust the first year available nitrogen when applications are injected or incorporated within 1 hour:

$$\text{First-Year Available N} = \text{NH}_4\text{-N} + [0.25 \times (\text{Total N} - \text{NH}_4\text{-N})]$$

5. Emerald Sky Dairy LLC shall record daily manure applications by using form 3200-123A. These forms shall be retained at the farm and provided to the department upon request.
6. Emerald Sky Dairy LLC shall annually submit a spreading report that summarizes the land application activities listed under NR 243.19(3)(c)5., Wis. Adm. Code by using form 3200-123.

WINTER SPREADING

7. Liquid manure applications during winter conditions, as defined by NR 243.14(7), Wis. Adm. Code, are prohibited with the exception of emergency applications.
8. The following field(s) are approved for winter spreading solid manure, emergency applications of liquid manure and frozen liquid manure:
- | | | |
|-------------------------|----------------|-------------|
| - Johnson Cat Swansen 3 | - Home 6 | - ED 3 |
| - Eric's 1 | - Eric's 2 | - ED 1 |
| - ED 2 | - Clear Lake 3 | - Brad 2-11 |
| - Clear Lake 2 | - Clear Lake 1 | - |
9. Winter spreading of solid and liquid manure may not occur during the "high risk runoff period" pursuant to s. NR 243.14(6)(c) and NR 243.14(7)(c), respectively.
10. Winter applications of liquid manure shall only occur under emergency situations, after notifying the Department and receiving verbal approval.
11. Liquid applications shall be limited to 3,500 gallons per acre or 30 lbs. P per acre, whichever is less, on slopes 2-6% and 7,000 gallons per acre or 60 lbs. P per acre, whichever is less, on slopes 0-2%. Winter applications of solid manure shall be limited to 60 lbs. P per acre.

HEADLAND STACKING

12. The following sites are approved for non-winter and winter headland stacking of manure with solids 32% or greater:
- | | | |
|---|---------------------|---------------------|
| - Henry Lentz
Obermueller (North and
East site) | - C Hyner | - Jason Jack Sand 3 |
| - Jason Jack Sand 5 | - Jason Jack Sand 6 | - |
13. The following sites are denied for headland stacking manure:
- | | | |
|---------------------------------------|---------------------------------------|--|
| - Jason Jack Sand 1
(within SWQMA) | - Jason Jack Sand 2
(within SWQMA) | - Jason Jack Sand 4 (both
sites) (within SWQMA) |
|---------------------------------------|---------------------------------------|--|

MANURE & PROCESS WASTEWATER IRRIGATION

14. Irrigation of manure or process wastewater is prohibited.

SUBMITAL AND RECORDKEEPING REQUIREMENTS

15. A copy of this conditional approval shall be included in all future annual Nutrient Management Plan Updates in addition to the NR 243 and NRCS 590 checklists.
16. By **March 31, 2021**, an updated set of winter and non-winter restriction maps must be submitted including the updated concentrated flow channels and SWQMA areas that were updated before this approval.

This conditional approval does not limit the Department's regulatory authority to require NMP revisions (based upon new information or manure irrigation research findings) or request additional information in order to

confirm or ensure your farm operation remains in compliance with NR 243 and your WPDES permit conditions. If additional information, project changes or other circumstances indicate a possible need to modify this approval, the Department may ask you to provide further information relating to this activity.

Please keep in mind that approval by the Department of Natural Resources – Runoff Management Program does not relieve you of obligations to meet all other applicable federal, state or local permits, zoning and regulatory requirements.

If you have any questions regarding this approval I can be reached at 715-214-5503 or Aaron.Orourke@Wisconsin.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'AOR', is written over a faint, light-colored signature line.

Aaron O'Rourke
WDNR Nutrient Management Program Coordinator
Wisconsin Department of Natural Resources

cc: Jeff Jackson, WDNR Agricultural Runoff Specialist (Jeffery.Jackson@Wisconsin.gov)
Jill Schoen, Interim WDNR Watershed Field Supervisor (Jill.Schoen@Wisconsin.gov)
Chris Clayton, WDNR Ag Runoff Section Chief (Christopherr.Clayton@Wisconsin.gov)
Ashley Scheel, WDNR CAFO NMP Reviewer (Ashley.Scheel@Wisconsin.gov)
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